


<p>Developed in collaboration with the Wound Care Champions, Wound Care Specialists, Enterostomal Nurses, and South West Regional Wound Care Program (SWRWCP) members from Long Term Care Homes, Hospitals, and South West Community Care Access Centre contracted Community Nursing Agencies in the South West Local Health Integration Network.</p>	
<p><b>Title</b></p>	<p><b>Procedure: Interdisciplinary Lower Leg Assessment Form</b></p>
<p><b>Background</b></p>	<ul style="list-style-type: none"> <li>• The “Interdisciplinary Lower Leg Assessment Form” was developed by members of the SWRWCP, and is an interdisciplinary assessment tool to be used to assess individuals with leg ulcers or leg edema. The form is intended: <ul style="list-style-type: none"> <li>• To be completed at the point of entry to the health care system for individuals with a leg ulcer/edema or when such an ulcer/edema is identified on an individual already within the system;</li> <li>• To be completed by a generalist health care provider such as a Registered Nurse, Registered Practical Nurse, Occupational Therapist, Physiotherapist, etc. or by a Wound Care Specialist or Enterostomal Nurse if they are the first person to assess the wound;</li> <li>• To follow the individual as they move through the health care system, providing all subsequent health care providers access to the assessment information.</li> </ul> </li> </ul>
<p><b>Indications</b></p>	<p>This procedure is intended to be used by front line registered health care providers to assist with their assessment and management of individuals admitted with or presenting with a diabetic and/or neuropathic foot ulcer.</p>
<p><b>Procedure</b></p>	<p><b>NOTE: The use of the “Interdisciplinary Lower Leg Assessment Form” is but one part of the holistic assessment of an individual admitted with or presenting with a leg ulcer/edema.</b></p> <p><b>Assessment</b></p> <ol style="list-style-type: none"> <li>1. Thoroughly review the person’s available medical records and add appropriate information to the “Interdisciplinary Lower Leg Assessment Form” regarding the following: <ol style="list-style-type: none"> <li>a. The person’s name and Ontario Health Insurance Plan (OHIP) number or other identifier, and the assessment date</li> <li>b. Edema/Lymphedema/Lipedema: <ol style="list-style-type: none"> <li>i. Diagnoses of edema and/or lymphedema</li> <li>ii. Previous limb circumference measurements (note these on the “Interdisciplinary Lower Leg Assessment Form” for reference)</li> <li>iii. Current/historical use of compression stockings/systems, level of compliance, and age of the stockings/system, if such information is applicable/available</li> </ol> </li> <li>c. Skin and anatomy:</li> </ol> </li> </ol>



	<ul style="list-style-type: none"> <li>i. Any reference to a family history of venous or arterial disease</li> <li>ii. Any personal history of deep vein thrombosis, significant lower leg injury, vein surgery, leg ulceration, heart disease, stroke, heart attack, peripheral vascular disease and/or smoking</li> <li>iii. Look at recent pain assessments for any indications of ischemic rest pain or intermittent claudication pain</li> </ul> <p>d. Circulation:</p> <ul style="list-style-type: none"> <li>i. Diagnostic imaging reports re ankle brachial index (ABI) results, segmental compression study results, or toe pressure results. <b>NOTE: to be applicable, the testing must have taken place in the previous six months and there must have been no change in the presentation of the person’s limb since that time, otherwise re-testing is indicated</b></li> </ul> <p>e. Current wound care orders</p> <p><b>Planning</b></p> <ol style="list-style-type: none"> <li>1. Expected outcomes: <ul style="list-style-type: none"> <li>a. Information from the person’s chart, the person and/or their substitute decision maker (SDM)/power of attorney for personal care (POA C), and your assessment will allow for the thorough completion of the “Interdisciplinary Lower Leg Assessment Form”</li> <li>b. The information obtained on the “Interdisciplinary Lower Leg Assessment Form” will allow for: <ul style="list-style-type: none"> <li>i. The identification of any underlying cause(s) of the leg wound(s)/edema</li> <li>ii. The identification of any extrinsic, intrinsic, and iatrogenic factors affecting the person’s ability to heal (if healing is a realistic goal), or factors putting them at risk for ulcer development</li> <li>iii. The identification of pertinent person-centered concerns</li> </ul> </li> <li>c. Registered nursing staff, in collaboration with other involved health care disciplines and the person with the wound and/or their SDM/POA C (if applicable), will be able to use the assessment information to initiate/modify and implement an appropriate, interdisciplinary, person-centered plan of care which contains clear directions to staff and others who are providing the person with direct care</li> </ul> </li> <li>2. Explain the procedure and purpose of the assessment to the person and/or their SDM/POA C, and obtain verbal or implied consent</li> <li>3. Assess the need for pre-assessment analgesia, as this assessment will require removal of the person’s dressing and reapplication of a new dressing, which may be painful. If the person does require pre-</li> </ol>
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procedure analgesia, they **must** be allotted enough time to allow the drug's peak effect to take place BEFORE initiating the dressing change/assessment

**Implementation**

1. Provide for privacy and ensure the person is in a comfortable position to facilitate the assessment
2. Ensure the person's SDM/POA C is present or available if the person does not have a reliable memory or is unable to accurately answer any questions on the "Interdisciplinary Lower Leg Assessment Form"
3. Wash your hands and attend to the person with your assessment documentation and dressing supplies
4. If the person is in bed, raise the bed (if you are so able) to an appropriate ergonomic working position to facilitate ease of assessment. Otherwise, position yourself in an appropriate ergonomic position to allow for the wound/leg assessment while preventing self-injury
5. Ensure adequate lighting
6. Following the order of the "Interdisciplinary Lower Leg Assessment Form", ask the person and/or their SDM/POA C questions to elicit responses to the identified items. Specific instructions:
  - a. Before beginning the interview/assessment, ensure that the person's name, OHIP or other identifying number and the current date are added to the top of every page (in the header space where indicated)
  - b. Edema/Lymphedema/Lipedema – confirm/determine (for those with leg swelling)<sup>1</sup>:
    - i. Any diagnoses of edema, lymphedema, or lipedema or any history of swelling. Indicate the date of onset and whether or not the swelling is symmetrical
    - ii. The location of the edema and description of the edema (see the chart below for swelling definitions):

Type of Swelling	Example
<p><b>Pitting edema:</b></p> <ul style="list-style-type: none"> <li>• Apply pressure to swollen area by depressing skin x10-15 seconds. If the indentation persists when pressure is removed, it is pitting edema</li> <li>• Score the severity of the edema based on the depth of the indentation:               <ul style="list-style-type: none"> <li>○ +1 = 0-1/4"</li> <li>○ +2 = 1/4"-1/2"</li> <li>○ +3 = 1/2-1"</li> <li>○ +4 = takes several minutes to rebound</li> </ul> </li> </ul>	
<p><b>Non-pitting edema:</b></p> <ul style="list-style-type: none"> <li>• No persistent indentation when pressure applied to the skin</li> <li>• Can be due to lymphedema</li> </ul>	

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**Brawny induration:**

- Hard/firm swelling of tissue, with margins
- Palpate where it starts/tops
- Cannot pinch this tissue






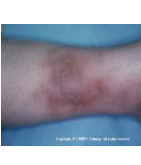
- iii. Obtain limb circumference measurements using a disposable paper measuring tape. To take measurements:
  - a. Have the person stand (or provide them with the support they need to stand and remain standing for approximately five minutes)
  - b. Measure the circumference of the widest part of the person's foot (in cm) and record
  - c. Measure up the person's lower leg 10cm, and take a second circumference measurement
  - d. Measure 20cm up the person's leg and take and document a third circumference measurement (this should be 10cm higher than your previous measurement)
  - e. Measure 30 cm up the person's leg .... And so forth until you have measured the circumference of the entire lower leg (if the swelling is limited to the lower leg), or the entire leg (if the swelling is present in the person's thighs as well). Compare these measurements to any previous measurements, and note any change
- iv. Confirm with/determine if the person is currently using any compression systems or stockings or if they have done so in the past, and document accordingly. Document the age of any stockings currently in use.  
**NOTE: one pair of compression stockings is only 'good' for daily use for four to six months, after which they have to be replaced. If the person has swelling in their limbs and is not using compression therapy, consider a referral to a Wound Care Specialist (WCS) or Enterostomal (ET) Nurse for a thorough lower limb assessment and suggestions re compression therapy (see: "Criteria for Interdisciplinary Referrals")**
- v. Ask if the person wears their compression system/stockings EVERY DAY, ideally putting them on before they get up in the AM and removing them immediately before bed in the PM, and document accordingly. **NOTE: if the person requires new compression stockings and has not had ankle-brachial pressure testing, segmental compression**


**studies, or toe-pressure testing done in the previous six months, request a referral to a WCS or ET Nurse for a full lower limb assessment (see: “Criteria for Interdisciplinary Referrals”)**

- vi. If you suspect lymphedema or lipedema, utilize the definitions provided on the “Interdisciplinary Lower Leg Assessment Form” to guide your choice of lymphedema stage and/or presence of lipidema. Discuss your findings with the person’s family physician or primary care nurse practitioner, and consider a referral to a WCS or ET nurse for a full lower limb assessment and consideration of compression therapy (see: “Criteria for Interdisciplinary Referrals”)

c. Skin and anatomy<sup>2-5</sup> – confirm/determine:

- i. Any family history of venous or arterial disease
- ii. Any personal history of deep vein thrombosis, significant lower leg injury, vein surgery, leg ulceration, heart disease, stroke, heart attack, peripheral vascular disease and/or smoking
- iii. The presence of ischemic rest pain or intermittent claudication pain
- iv. Observe the person’s lower limb for the signs of venous and arterial disease listed on the “Interdisciplinary Lower Leg Assessment Form”, and check the appropriate boxes as indicated. See the chart below for descriptions of the various terms:



Term and Definition	Example
<p><b>Varicosities:</b></p> <ul style="list-style-type: none"> <li>• Enlargement or swelling of the veins</li> </ul>	
<p><b>Hemosiderin staining:</b></p> <ul style="list-style-type: none"> <li>• Greyish-brownish discoloration of the skin caused by the degradation of red blood cells in the skin and deposition of the iron-containing pigment</li> </ul>	
<p><b>Chronic Lipodermatosclerosis:</b></p> <ul style="list-style-type: none"> <li>• Lower 1/3 of leg becomes sclerotic and woody</li> <li>• Leg becomes champagne bottle or bowling pin shaped</li> <li>• Ulcers sometimes more difficult to heal</li> </ul>	
<p><b>Acute Lipodermatosclerosis:</b></p> <ul style="list-style-type: none"> <li>• Painful condition</li> <li>• Represents as panniculitis associated with venous insufficiency</li> <li>• Ulcers in the area become fibrotic over time</li> <li>• Photo used with permission from Dr. V. Falanga</li> </ul>	

	<p><b>Stasis or venous dermatitis:</b></p> <ul style="list-style-type: none"> <li>• Erythema, scaling, pruritus and sometimes weeping of the skin of the lower legs secondary to poorly controlled edema</li> <li>• May develop cellulitis</li> </ul> <p><b>Atrophie blanche:</b></p> <ul style="list-style-type: none"> <li>• Painful purpuric papules that evolve into ulcerations and finally angular scars (white lesions)</li> <li>• Located on ankle/foot</li> </ul> <p><b>Woody fibrosis:</b></p> <ul style="list-style-type: none"> <li>• Deposits of fibrin in the deep dermis and fat</li> <li>• Results in a woody induration of the gaiter area of the leg</li> </ul> <p><b>Ankle (submalleolar) flare:</b></p> <ul style="list-style-type: none"> <li>• Dilation of venules at the ankle area</li> <li>• Due to incompetence of perforating vein valves</li> </ul> <p><b>Dependent rubor:</b></p> <ul style="list-style-type: none"> <li>• Redness or deep purple color of a foot when it is in a dependent position</li> <li>• Sign of arterial compromise</li> <li>• Don't confuse with cellulitis</li> </ul> <p><b>Blanching on elevation:</b></p> <ul style="list-style-type: none"> <li>• Decrease in arterial flow without the gravitational effect of having the foot in a dependent position</li> <li>• Occurs in the presence of arterial compromise</li> </ul> <p><b>Gangrene:</b></p> <ul style="list-style-type: none"> <li>• Arterial blood supply is compromised so much that the affected tissues die (necrose)</li> <li>• May start out as red in color and cool to touch, then turn blue or brownish, and then black</li> <li>• May be wet or dry</li> </ul>	
<p>d. Assess the wound for signs of venous/arterial disease, and document:</p> <ol style="list-style-type: none"> <li>Don clean disposable gloves, and expose the person's wound by removing the existing wound dressing as per the manufacturer's instructions. You may consider application of gown, goggles, and/or mask if the risk for spray or splash back exists</li> <li>Dispose of soiled dressings in the appropriate receptacle</li> <li>Remove your gloves and dispose of them in the appropriate receptacle</li> <li>Wash your hands and put on a new pair of clean disposable gloves and cleanse the wound as ordered or as per the "South West Regional Wound Care Program's Dressing Selection and Cleansing Enabler – HEALABLE" or "South West Regional Wound Care Program's Dressing Selection and Cleansing Enabler – MAINTENANCE/NON-HEALABLE", as indicated. Gently pat the wound dry with gauze (as needed)</li> </ol>		





- v. Assess the wound using the “NPUAP PUSH Tool 3.0” (see “Procedure: NPUAP PUSH Tool 3.0”), and note, by checking the appropriate boxes, and signs of venous/arterial disease based on your wound assessment, i.e.

	Venous Ulcers	Arterial Ulcers
<b>Location</b>	Gaiter region of the calf, superior to the medial malleolus	Foot, toes, below ankle, heels
<b>Shape</b>	Irregular shape, shallow	Round, ‘punched out’ in appearance, deep
<b>Wound Tissue</b>	Moist with granulation +/- slough/fibrin	Pale, dry granulation +/- eschar/fibrin

- e. Assess the wound/lower leg for signs of pre-ulcerous conditions:
- i. Confirm/determine any history of previous leg ulceration, and the number of years they have been occurring over, and the time since the last ulcer closed
  - ii. Confirm/determine the approximate date of onset of the current ulceration(s) and the location of these wounds
  - iii. Note any pre-ulcerative conditions by observing the person’s lower legs, i.e. stretched skin, serous weeping with no obvious openings, etc.
- f. Assess the wound for any unusual characteristics, and document. I.e.:
- i. Is the ulcer in an atypical location?
  - ii. Does the ulcer have an unusual appearance<sup>9</sup>, i.e. purpura, undermined border, or livedo? See the chart below for examples of atypical wounds:

Atypical Leg Ulcer Description	Example
<p><b>Bullous Pemphigus:</b></p> <ul style="list-style-type: none"> <li>• Chronic, autoimmune, sub-epidermal, blistering skin disease</li> <li>• Rarely involves mucous membranes</li> <li>• Can persist for months → years with spontaneous remissions/exacerbations</li> </ul>	
<p><b>Calciphylaxis:</b></p> <ul style="list-style-type: none"> <li>• Singular or multiple lesions that suddenly appear on the lower legs, and that spread rapidly</li> <li>• Lesions may also be on torso/hands</li> <li>• Intense pain</li> <li>• Appear as non-specific violaceous mottling with a characteristic network pattern (livedo reticularis) or as erythematous papules, plaques or nodules</li> <li>• As the disease progresses, lesions develop a star-like appearance with central skin necrosis</li> </ul>	 <p>Newer lesions</p> <p>Older lesions</p>



	<p><b>Cutaneous Vasculitis:</b></p> <ul style="list-style-type: none"> <li>• Associated with palpable purpura and a livid erythematous halo</li> <li>• Can appear as nodules, bullae or skin infarction</li> <li>• Lead to ulceration which can contain necrotic tissue</li> <li>• Very painful</li> <li>• Multiple sites/shapes</li> </ul>	
<p><b>Necrobiosis Lipoidica Diabeticorum:</b></p> <ul style="list-style-type: none"> <li>• Lesions appear well-circumscribed, erythematous plaques, with a depressed, waxy yellow atrophic center</li> <li>• Often in pre-tibial area</li> <li>• Can also appear as raised, shiny, red-brown patches occurring on lower legs</li> </ul>		
<p><b>Pyoderma Gangrenosum:</b></p> <ul style="list-style-type: none"> <li>• Red, tender nodules/pustules with bluish, undermined edges</li> <li>• Edges may appear 'moth-eaten'</li> <li>• Can be very painful</li> </ul>		
<p>iii. Does the wound present with signs of malignancy? See the diagram below for signs of early melanoma:</p>		
		
<p>iv. Has the ulcer been present for longer than six months despite evidence-informed treatment?</p> <p>v. If you suspect malignancy, discuss this with the persons primary care practitioner, as a wound biopsy may be warranted</p>		
<p>g. Leg pain:</p> <ol style="list-style-type: none"> <li>Ask the person questions regarding their leg pain experiences, and check the appropriate boxes on the "Interdisciplinary Lower Leg Assessment Form". The person's description of their pain may help you to identify the underlying wound etiology, as arterial and venous pain are distinct</li> <li>If the person reports poorly controlled pain, i.e. 4/10 or more on a 10-point Likert pain scale, discuss with the person's primary care practitioner, and consider further referrals to a pain specialist or physiotherapist for pain control. <b>NOTE: you may wish to use the</b></li> </ol>		

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**“Comprehensive Assessment of Pain in Chronic Wounds” tool, when communicating with the primary care practitioner re the person’s pain experience**

- h. Circulation<sup>7-8</sup>:
    - i. Palpate for the person’s dorsalis pedis and posterior tibial pulses, and indicate with a checked box whether they were present, diminished or absent
    - ii. If the person has not had ABI testing or equivalent in the past six months, or if the presentation of their limb has changed and you have received training on how to asses a person’s ABI, and you feel you have the knowledge, skill and judgment to perform the procedure, do so [see “Procedure: Ankle Brachial Index (ABI) Testing Using a Handheld Doppler”]. If you do not have the training, knowledge, skill or judgment, consider a referral to a WCS or ET nurse for ABI measurement and interpretation (see: “Criteria for Interdisciplinary Referrals”)
  - i. Based on your holistic assessment of the person and their wound, indicate your impression of the wound etiology, complicating factors, and healability status
7. Upon completion of the form, sign the bottom of every page. Include your designation
  8. Discuss the findings of the assessment with the person and/or their SDM/POA C and implement referrals and interventions as indicated
  9. Share the results of the leg assessment with the interdisciplinary members of the person’s wound care team
  10. Complete/update and initiate the person’s interdisciplinary person-centered plan of care, based on your holistic assessment, as per your organization’s policy
  11. Store the completed “Interdisciplinary Lower Leg Assessment Form” in the person’s medical record for future reference. Should the person be transferred to another facility/service, a copy of this document should accompany them to prevent duplication of assessment and to promote the continuity of care

**Evaluation**

1. Unexpected outcomes:
  - a. Information from the person’s available medical records, the person and/or their SCM/POA C, and your assessment do not allow for the thorough completion of the “Interdisciplinary Lower Leg Assessment Form”
  - b. The information obtained does not allow you to:
    - i. Accurately identify underlying cause(s) of the wound/leg edema
    - ii. Accurately identify extrinsic, intrinsic, and iatrogenic

	<p>factors affecting the person’s ability to heal (if healing is the goal) or putting them at increased risk for ulcer development</p> <p>iii. Identify pertinent person-centered concerns</p> <p>iv. Identify healability of the ulcer</p> <p>c. Registered nursing staff, in collaboration with other involved health care disciplines and the person with the wound/edema and/or their SDM/POA C, are unable to use the assessment information to initiate/update and implement an appropriate person-centered, interdisciplinary plan of care</p>
<p><b>References</b></p>	<ol style="list-style-type: none"> <li>1. International Society of Lymphology (ISL). Lymphoedema Staging (From International Consensus Document Best Practices for the Management of Lymphoedema). Retrieved from: <a href="http://www.lympho.org/mod_turbolead/upload/file/Lympho/Best_practice_20_July.pdf">http://www.lympho.org/mod_turbolead/upload/file/Lympho/Best_practice_20_July.pdf</a>.</li> <li>2. Hess CT. Venous ulcer checklist. <i>Advances in Skin and Wound Care</i>. 2010;23(8):384.</li> <li>3. Moloney MC, Grace P. Understanding the underlying causes of chronic leg ulceration. <i>JWC</i>. 13(6):215-218.</li> <li>4. Coutts et al. RNAO Assessment and Management of Venous Leg Ulcers Guideline supplement. 2007.</li> <li>5. Dissemond J, Körber A, Grabbe S. Differential diagnosis of leg ulcers. <i>Journal der Deutschen Dermatologischen Gesellschaft</i>. 2006;4:627–634.</li> <li>6. Vowden P, Vowden K. Doppler assessment and ABPI: Interpretation in the management of the leg ulceration. <i>Worldwide Wounds</i>. 2001. Available at: <a href="http://www.worldwidewounds.com/2001/march/Vowden/Doppler-assessment-and-ABPI.html">http://www.worldwidewounds.com/2001/march/Vowden/Doppler-assessment-and-ABPI.html</a>.</li> <li>7. Suzuki K. How to diagnose Peripheral Arterial Disease. <i>Podiatry Today</i>. 2007;20(4).</li> <li>8. Conestoga Collage Institute of Technology and Advanced Learning. School of Health Sciences, Community Services and Bio Technology. Basic Foot Care Student Learning Package. August 2005.</li> <li>9. Patel K, Grey JE, Harding KG. ABC’s of wound healing: Uncommon causes of ulceration. <i>British Medical Journal</i>. 2006;332(7541):594-596.</li> </ol>
<p><b>Related Tools</b>  <b>(NOTE: these tools and their instructions can be found on the SWRWCP’s website: <a href="http://swrwoundcareprogram.ca">swrwoundcareprogram.ca</a>)</b></p>	<ul style="list-style-type: none"> <li>• Interdisciplinary Lower Leg Assessment Form</li> <li>• Criteria for Interdisciplinary Referrals</li> <li>• Procedure: Ankle Brachial Index (ABI) Testing Using a Handheld Doppler</li> <li>• South West Regional Wound Care Program’s Dressing Selection and Cleansing Enabler – HEALABLE</li> <li>• South West Regional Wound Care Program’s Dressing Selection and Cleansing Enabler – MAINTENANCE/NON-HEALABLE</li> <li>• NPUAP PUSH Tool 3.0</li> </ul>

	<ul style="list-style-type: none"><li>• Procedure: NPUAP PUSH Tool 3.0</li><li>• Comprehensive Assessment of Pain in Chronic Wounds</li></ul>
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