

INTRODUCTION TO LOWER EXTREMITY WOUND PATHWAY TOOLS AND FORMS

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What is the Lower Extremity Wound Pathway?

Clinical pathway for the standardization and improved management of most common chronic leg and foot wounds:

- Venous stasis ulcers
- Diabetic ulcers – neuro-ischemic
- Arterial ulcers
- Mixed etiology ulcers

Does not include pressure ulcers at this time.

Diabetic feet

Diabetic neuropathy and vascular compromise set the stage for:

- Ulceration at pressure points
- Unsuspected injury
- Infection



Venous Stasis

Chronic venous insufficiency sets the stage for:

- Ulceration
- Slow healing wounds
- Stasis dermatitis
- Cellulitis



- In 2016/17, SK patients were hospitalized 150 times for venous stasis wounds and spent almost 2,200 days in hospital.
- In 2016/17, SK patients were hospitalized 524 times for diabetic foot wounds and spent over 8,000 days in hospital.
- In 2016/17 there were 173 lower leg amputations with diabetic foot wounds.
- Patients may live with open wounds for months or years.
- *How many nursing visits are for wound care?*

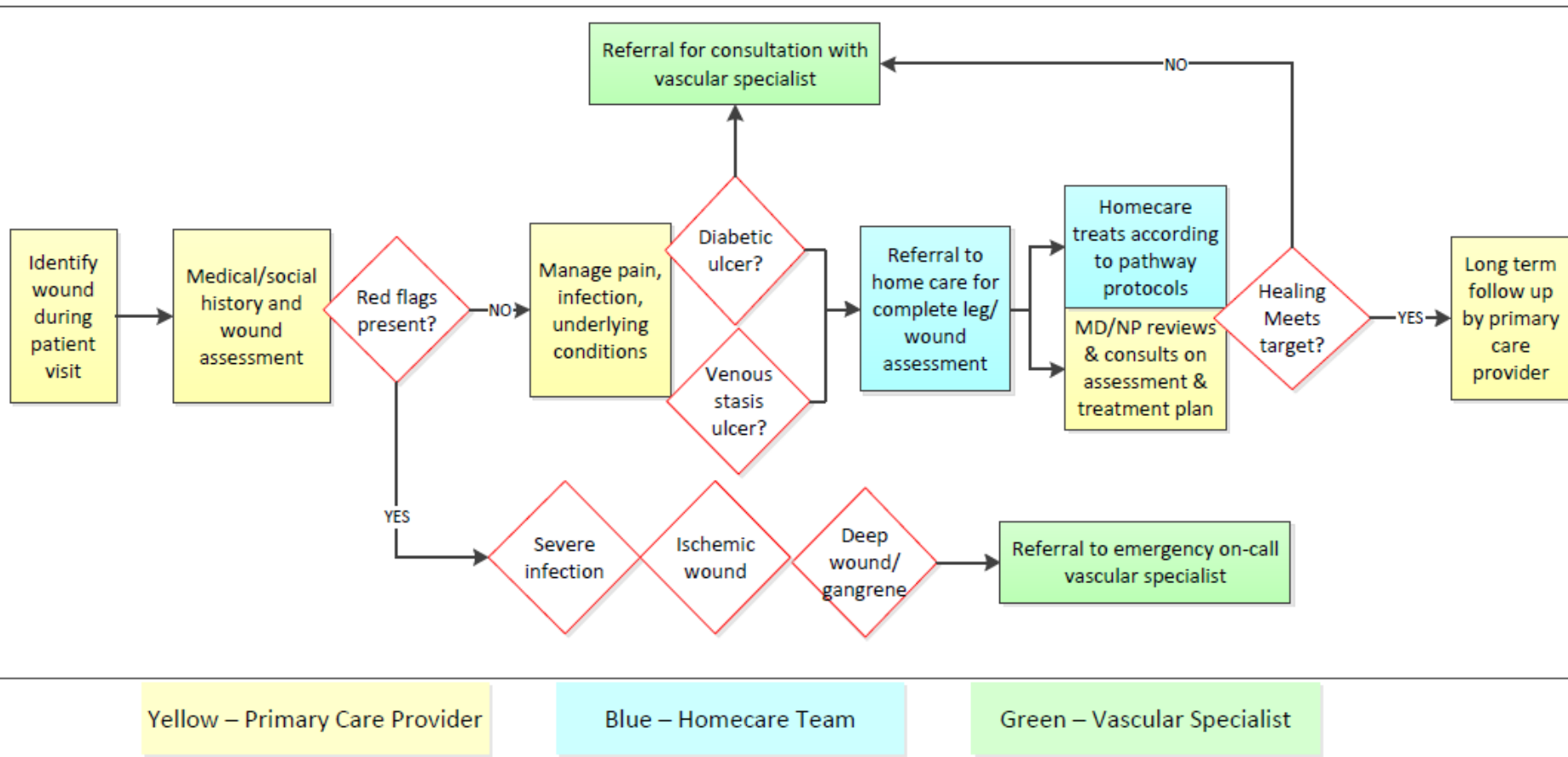
Wound care challenges for nurses

- Incomplete information and orders from primary care
- Lack of standardized wound care protocols
- Capacity for wound care not always available from the homecare team if the client is in acute or long term care.
- Sometimes difficult to access wound resource nurse/ physicians/ specialists for advice
- Wound care consumes considerable amounts of resources and time

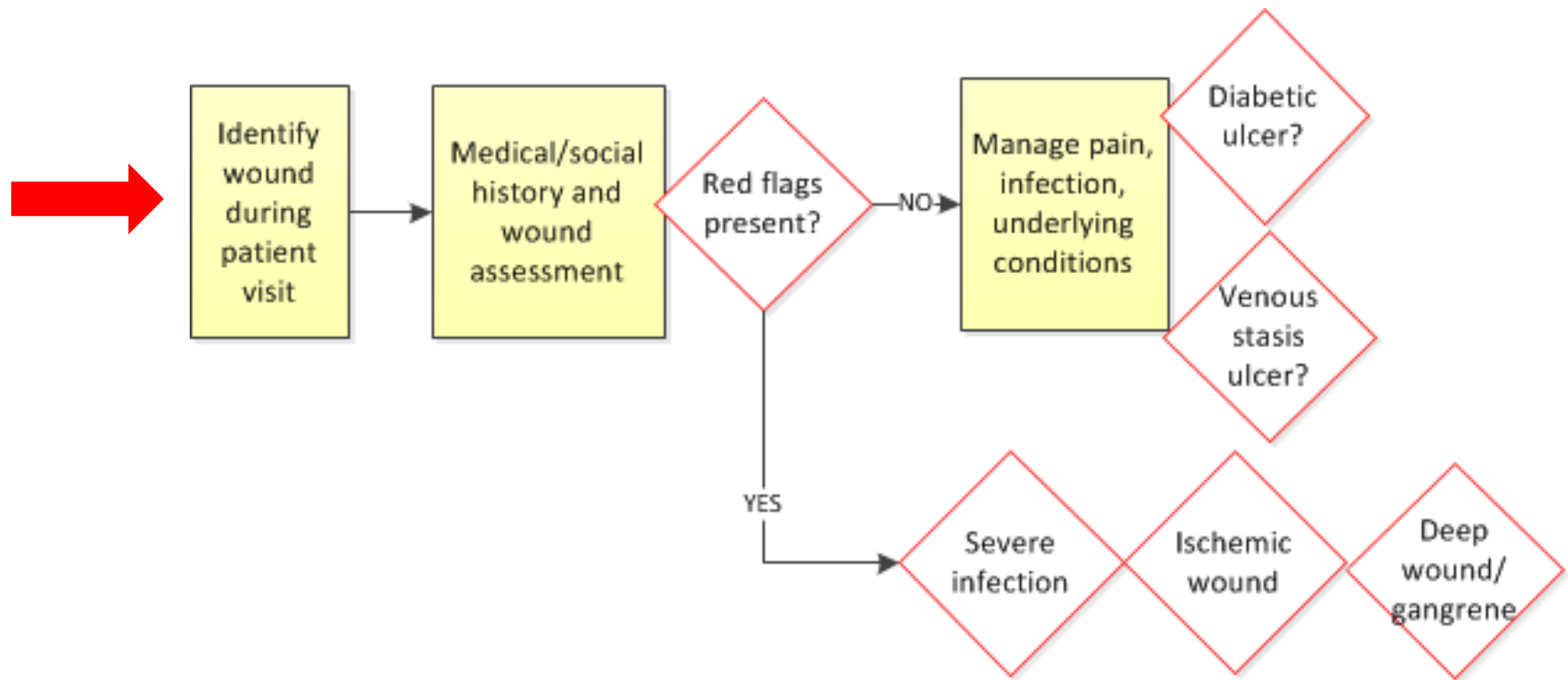
Pathway provides:

- Referral form for family physicians and nurse practitioners available in print and EMR
- Patients referred to homecare for treatment according to protocol (no orders required)
- Capacity building for nurses & primary care
- Standardized lower leg assessment, wound care protocols & product formulary
- Tools to record & share information with wound resource nurse/ physician/ specialist

Lower Extremity Wound Pathway -- Patient Flow



Step 1: Primary care triage & referral



In order to initiate the LEW Pathway process, a physician or NP referral is required.

Because management of a wound may require ordering lab tests, prescribing medications, referring to specialists, etc, the most responsible provider must be a physician/NP.

If a lower extremity wound is identified by a healthcare provider in the community, that provider should contact the patient's physician/ NP to initiate appropriate referral for wound care.

Role of primary care provider:

- Correct diagnosis of wound etiology
- Identification and management of factors that may interfere with wound healing
- Identification of red flags for urgent referral
- Referral to appropriate secondary or tertiary level of care, and follow up
- Initiation of antimicrobial therapy and/or pain medications as appropriate
- Sharing relevant information with specialists and wound care nurses

CME Program: Practical Management of Lower Extremity Wounds

www.woundpathwaysk.ca

- Capacity building for primary care providers
- Free on-line course
- Open to all
- 2-3 hours
- 3 Mainpro+ credits

Module 1 **Module 2** Module 3 Module 4 Module 5 Module 6 Final Quiz


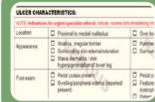

Module 2
Initial Assessment of Patient with Lower Limb Wound
How to use the LEW pathway referral form

Click below "Launch Training on Another Tab" to launch the training in full screen. Note that links to the List of Resources sidebar are not accessible while viewing in full screen.

- [Launch Training on Another Tab](#)

Learning Objectives

At the end of this module, learners will be able to:

-  List the key components required for the initial assessment of patients with lower extremity wounds
-  Use the LEW Pathway referral form to differentiate between venous and neuro-ischemic (diabetic) wounds
-  Identify red flags for urgent referral

List of resources

- Printable PDF of presentation slides
- Referral Form – Lower Extremity Wound Pathway
- Lower Leg Assessment Form
- Treatment protocol diabetic foot ulcer
- Treatment protocol venous stasis ulcer
- Treatment protocol non-healable wound
- LEW Pathway Communication with Referring Provider Form

Test Your Knowledge - Take Module Quiz

LEW Pathway referral form

REFERRAL FORM – VENOUS STASIS / ARTERIAL / DIABETIC FOOT WOUNDS

Saskatchewan Lower Extremity Wound Pathway

To: _____

Fax #: _____

**FAX TO LOCAL HOMECARE and
TO VASCULAR SPECIALIST IF NEEDED**

Patient name: _____

Address: _____

DOB: _____

Age: _____

Phone:(h) _____

PERTINENT MEDICAL HISTORY: relevant documents attached

diabetes

heart failure

CAD

hypertension

CKD stage ____

smoker

obesity

peripheral arterial disease

varicose veins/previous DVT

other:

Allergies:

Medications:

The pathway referral form should only be used for conditions that have pathway treatment protocols (venous stasis, diabetic foot wounds, arterial/non-healable wounds).

The referral form was designed by physicians to assist with differentiating venous and diabetic (neuro-ischemic) wounds.

ULCER CHARACTERISTICS:

NOTE: Red flags for urgent specialist referral include: severe/limb-threatening infection, gangrene, acute ischemia

Location:	<input checked="" type="checkbox"/> Proximal to medial malleolus	<input type="checkbox"/> Over bony prominence on the lower leg/ foot
Skin and wound appearance:	<input checked="" type="checkbox"/> Shallow wound, irregular border <input checked="" type="checkbox"/> Surrounding skin edema/induration <input type="checkbox"/> Stasis dermatitis <input checked="" type="checkbox"/> Skin hyperpigmentation of lower leg	<input type="checkbox"/> Punched out/deeper wound, well-defined border <input type="checkbox"/> Surrounding skin atrophic, shiny, dry <input type="checkbox"/> Dystrophic nails, absent toe hair <input type="checkbox"/> Foot deformity
Circulation & sensation:	<input checked="" type="checkbox"/> Pedal pulses present <input type="checkbox"/> No signs of neuropathy	<input type="checkbox"/> Poor capillary refill <input type="checkbox"/> Pedal pulses weak/absent <input type="checkbox"/> Loss of sensation <input type="checkbox"/> 128Hz tuning fork <input type="checkbox"/> Patient report <input type="checkbox"/> Patient report <input type="checkbox"/> Signs of intri
Size of wound:	<input type="checkbox"/> previous ulcer	<input type="checkbox"/> p
Duration of this ulcer:	Initiating event:	

MRP inserts exam findings in the **Ulcer Characteristics** section of the form

PROBABLE ETIOLOGY: Venous Arterial Diabetic (neuro-ischemic) mixed uncertain

Triage and referral

TRIAGE DECISION:

- URGENT REFERRAL (red flags)** – send patient to ER, or page on-call vascular surgeon and fax this form
- NON-URGENT REFERRAL** to homecare for treatment according to pathway protocols (*home care nurse may order a wound swab in referring physician / NP name if required*) – fax this form to nearest homecare team
- NON-URGENT REFERRAL** for vascular assessment of diabetic foot ulcer – fax this form to vascular specialist. Non-urgent diabetic foot ulcers should also be referred to homecare for initiation of treatment.

Urgent referral (red flags are identified):

- Call the emergency on-call vascular specialist
- OR send the patient to the nearest emergency department.

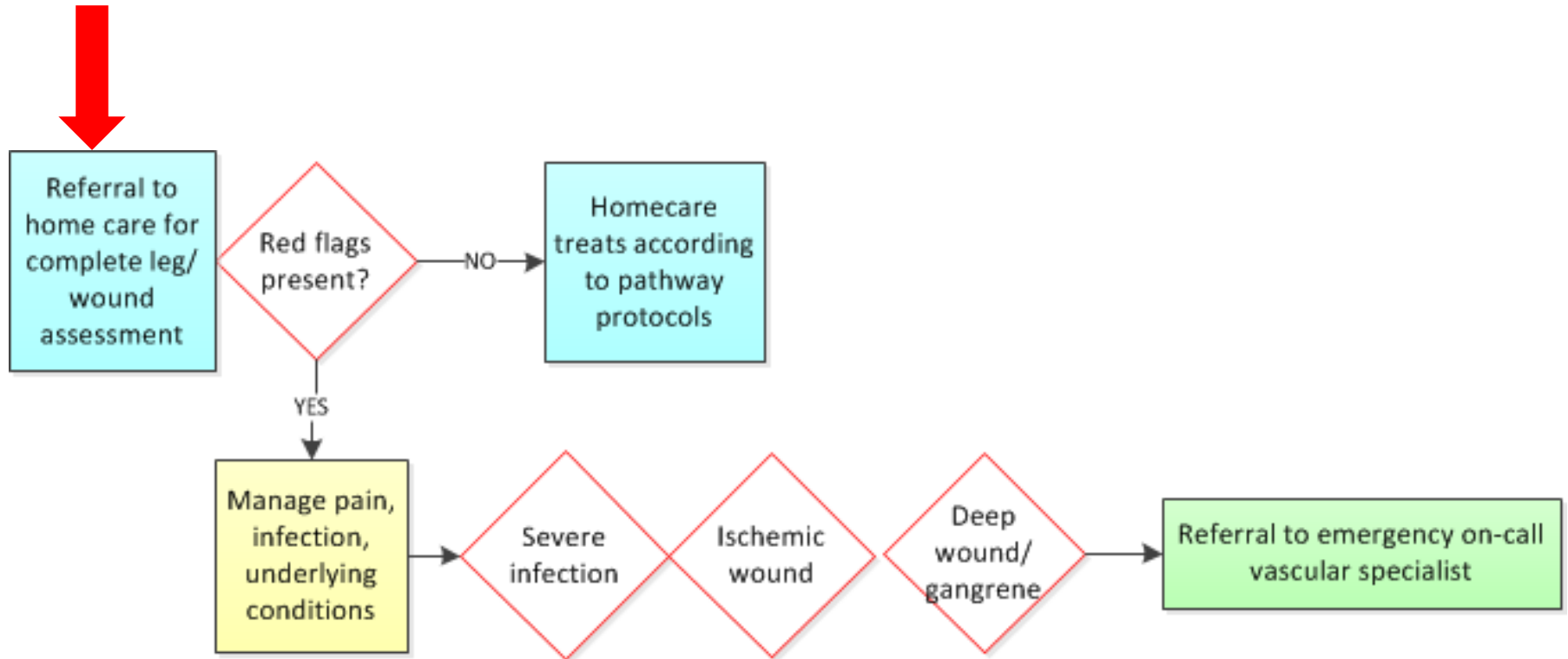
Non-urgent referral for diabetic foot ulcer:

- Refer patient to both a vascular specialist for assessment and to homecare for wound management. (The same form is used for both referrals.)

Non-urgent referral to homecare for treatment

- Specific orders are not required if the LEW Pathway referral form is used.
- The pathway referral form should only be used for conditions that have pathway treatment protocols
- If pathway referrals are received for different wounds, the form should be returned and orders requested.

Step 2: Lower Leg Assessment



Lower leg assessment form

- Should be completed ASAP after admission to homecare
- **Is a comprehensive baseline assessment** including vascular status (ABPI and pulses), sensation, appearance of legs and feet
- Assists to identify probable etiology
- Allows nurse to select evidenced-based treatment protocol based on assessment & physician referral
- Ideally, nurses performing this assessment have taken CE- 4021 or equivalent training

Lower leg assessment form


Plan two hours to complete assessment and associated paperwork

To open a PDF copy of this form, click on the link in the sidebar.



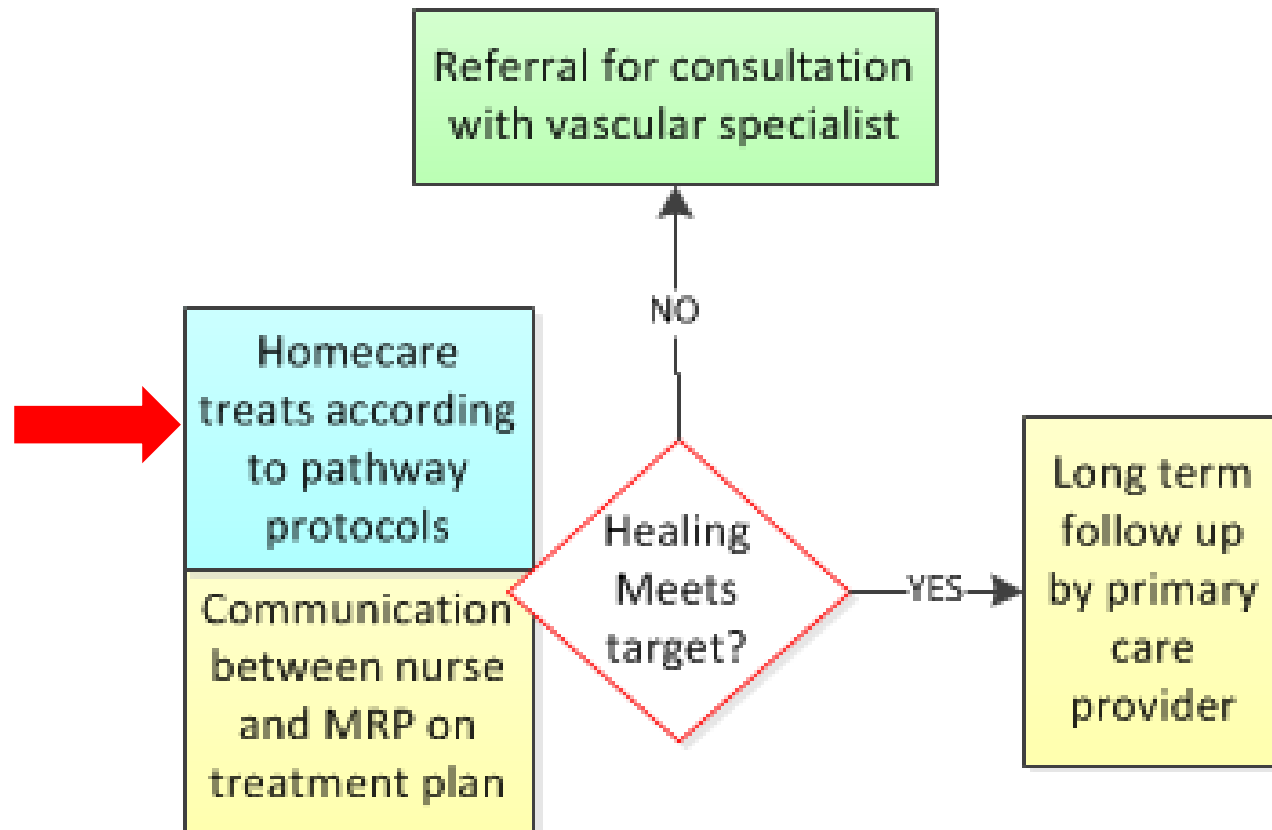
Saskatchewan Lower Extremity Wound Pathway LOWER LEG ASSESSMENT FORM		Client info:
Date of assessment:		
Location of assessment:		
SOCIAL HISTORY: Occupation: _____ Lives: <input type="checkbox"/> alone <input type="checkbox"/> with spouse <input type="checkbox"/> long term care <input type="checkbox"/> with family (specify): _____ <input type="checkbox"/> other (specify): _____ Mobility: <input type="checkbox"/> Independent <input type="checkbox"/> Use of aid(s) _____ <input type="checkbox"/> Bed/chair bound <input type="checkbox"/> Assistance from other person Comment:		HISTORY OF LEG ULCERS: Previous history of leg ulcers <input type="checkbox"/> Yes <input type="checkbox"/> No If yes: Year of first occurrence _____ Date of onset of current ulcer: _____ Location: _____ Previous use of compression bandages/stockings <input type="checkbox"/> Yes <input type="checkbox"/> No Age of stockings: _____ Comment:
HEALTH HISTORY that may be associated with vascular disease		
<input type="checkbox"/> No pertinent history <input type="checkbox"/> Family history of leg ulcers <input type="checkbox"/> Varicose veins <input type="checkbox"/> Deep vein thrombosis affected leg <input type="checkbox"/> Deep vein thrombosis unaffected leg <input type="checkbox"/> Venous surgery	<input type="checkbox"/> Rest pain/night pain <input type="checkbox"/> Lower extremity arterial disease <input type="checkbox"/> Intermittent claudication <input type="checkbox"/> Angina <input type="checkbox"/> Hypertension diagnosis <input type="checkbox"/> Heart failure	<input type="checkbox"/> Stroke/TIA <input type="checkbox"/> Diabetes (○ type 1 ○ type 2) <input type="checkbox"/> Rheumatoid arthritis <input type="checkbox"/> Renal disease <input type="checkbox"/> Phlebitis <input type="checkbox"/> Vasculitis

Signs of lower leg disease

LOWER LEG ASSESSMENT: (Mark all appropriate boxes)			
	Signs of Venous Disease	Signs of Arterial/Ischemic	Signs of Diabetic/Neuropathic
TEMP 	<input checked="" type="checkbox"/> R <input checked="" type="checkbox"/> L Warm (may be cool with edema) Comment:	<input type="checkbox"/> R <input type="checkbox"/> L Cool/cold limb/foot in warm environment <input type="checkbox"/> R <input type="checkbox"/> L Lower temperature in one leg compared to other Comment:	<input type="checkbox"/> R <input type="checkbox"/> L Warm Comment:
COLOUR	<input checked="" type="checkbox"/> R <input checked="" type="checkbox"/> L Hemosiderin staining (brown staining) Comment:	<input type="checkbox"/> R <input type="checkbox"/> L Dependent rubor <input type="checkbox"/> R <input type="checkbox"/> L Pallor on elevation above hip level Comment:	<input type="checkbox"/> R <input type="checkbox"/> L Normal Skin Tones Comment:
PAIN	<input type="checkbox"/> R <input type="checkbox"/> L Heavy, aching legs <input type="checkbox"/> R <input type="checkbox"/> L With deep palpation <input type="checkbox"/> R <input type="checkbox"/> L Relieved by: Comment:	<input type="checkbox"/> R <input type="checkbox"/> L Nocturnal pain <input type="checkbox"/> R <input type="checkbox"/> L Knife-like pain <input type="checkbox"/> R <input type="checkbox"/> L Pain at rest <input type="checkbox"/> R <input type="checkbox"/> L Intermittent claudication <input type="checkbox"/> R <input type="checkbox"/> L Calf/leg/foot pain How far can client walk?	<input type="checkbox"/> R <input type="checkbox"/> L Numbness <input type="checkbox"/> R <input type="checkbox"/> L Tingling
	<input type="checkbox"/> R <input type="checkbox"/> L No pain <input type="checkbox"/> R <input type="checkbox"/> L Other pain (describe):		

The lower leg assessment is set up the same way as the primary care referral – to assist with determining etiology.

Step 3: Initiate treatment according to standardized protocols



Standardized treatment protocols

- Based on wound etiology
- Evidence based standardized care
- If wound fails to follow wound-healing trajectory or if concerns with protocols, contact wound resource nurse.
- Wound team may vary by region – identify local wound resources and coordinate care
- Please refer to printable copies

Treatment Protocol for Diabetic Foot Ulcer (DFU)

Saskatchewan Lower Extremity Wound Pathway

TREATMENT PROTOCOL FOR NEUROPATHIC & DIABETIC FOOT ULCER (DFU)

Page 1 of 3

Initiate Wound Record

****Confirm that patient with DFU has been referred to a vascular specialist for assessment.****

- Photograph wound and file as per regional policy
- Initiate wound record

CLIENT INFORMATION

Name
Date

Laboratory

Follow Home Care policy for sending a wound swab for C & S and inform most responsible practitioner in client's name and why. Swab C&S: date:

Wound Management:

**** See formulary for current Health Pro product selection****

- Cleanse and moisturize peri-wound and intact skin lower limb/feet/foot
- Cleanse wound with 60-100mls of normal saline or alternative at the appropriate psi (4-15) at least room temperature
- Gently remove loose debris/yellow slough/crusting with gauze
- Protect peri-wound skin from moisture damage, use skin sealant or barrier
- Identify infection or suspected infection (see Lower Leg Assessment Form for additional infection guidelines)

**** Do not underestimate the severity of infection in a diabetic foot.****

If any of these signs/symptoms are present contact the most responsible provider.

To open a PDF copy of this form, click on the link in the sidebar.



Treatment Protocol for Venous Stasis Ulcers

Saskatchewan Lower Extremity Wound Pathway

TREATMENT PROTOCOL FOR VENOUS STASIS ULCERS

Page 1 of 3

Initiate Wound Record

**** Contact physician/NP if urgent specialist referral is indicated. ****

- Photograph wound and file as per regional policy
- Initiate wound record

CLIENT INFORMATION:

Name:

Date:

Laboratory

Follow Home Care policy for sending a wound swab for C & S and inform most responsible practitioner in client's name and why. Swab C&S: date:

Wound Management

**** See formulary for current Health Pro product selection****

**** Consult wound clinician nurse if concerns arise related to client comorbidities, atypical presentation**

- Cleanse and moisturize peri-wound and intact skin lower limb/foot
- Cleanse wound with 60-100mls of normal saline or alternative at the appropriate psi (4-15) at least room temperature
- Gently remove loose debris/yellow slough/crusting with gauze
- Protect peri-wound skin from exudate, use skin sealant or barrier: _____
- Identify infection or suspected infection (see LEW assessment form for localized and spreading infection guidelines)
- Apply an antimicrobial contact layer if indicated (refer to formulary or contact wound specialist nurse for advice on product selection): _____

To open a PDF copy of this form, click on the link in the sidebar.



Treatment Protocol for Arterial/ Non-healable Wounds

Saskatchewan Lower Extremity Wound Pathway

TREATMENT PROTOCOL FOR ARTERIAL/NON-HEALABLE WOUNDS

Initiate Wound Record **Confirm that patient with arterial wound has been referred to a vascular specialist for re-vascularization consult.** <input type="checkbox"/> Photograph wound and file as per regional policy <input type="checkbox"/> Initiate wound record	CLIENT INFORMATION: Name: Date:
ARTERIAL WOUND <input type="checkbox"/> Date of re-vascularization consult: _____ <input type="checkbox"/> Maintain a clean, stable wound until consult has taken place. Paint wound with Betadine or Chlorhexidine. <input type="checkbox"/> Apply a protective dry gauze dressing, if required, and secure it. ** Once the limb has been successfully re-vascularized, re-evaluate the client by completing an updated Lower Leg Assessment and a new treatment plan ** ** If re-vascularization is not possible, treat as non-healable wound. **	
NON-HEALABLE WOUND (when moist wound healing is contra-indicated) Wound is considered non-healable due to: <input type="checkbox"/> Not a surgical candidate <input type="checkbox"/> Patient at end of life <input type="checkbox"/> Other	
Wound is covered with stable, hard, dry eschar or dry gangrene	

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Skin & wound product formulary

CATEGORY	PRODUCT
ABSORBENT DRESSINGS	<ul style="list-style-type: none"> • Classic Health Pads (Classic Health) • Mextra (Mölnlycke) • Dressing Roll
ALGINATE	<ul style="list-style-type: none"> • Nu-Derm alginate (Systagenix) – sheet or ribbon
ANTIMICROBIALS	<ul style="list-style-type: none"> • Acticoat Flex (Smith & Nephew) • Silvercel hydroalginate with silver (Systagenix) ribbon • Iodosorb Cadexomer Iodine (Smith & Nephew) • Inadine (Systagenix) • Aquacel Ag + Extra sheet (ConvaTec) • Aquacel Ag + ribbon (ConvaTec) • Aquacel Ag Foam (ConvaTec) • InterDry AG (Coloplast) • Mepilex Transfer AG (Mölnlycke)

To open a PDF copy of this form, **click on the link in the sidebar.**



Communication to referring provider

Send communication form when treatment is initiated, and at any treatment change.

****This is important to physicians****

RE: Patient Name: _____

Patient contact info: _____

Your patient was assessed by Regional Home Care Team personnel as follows:

Date: _____ Location: _____

Assessed by: _____

ABI TBI _____ Other investigation: _____

REGIONAL HOME CARE TEAM REQUESTING:

Clinical follow-up:	Referral to specialist
	<input type="checkbox"/> re. foot deformities: _____
	<input type="checkbox"/> re. surgical consult: _____
	<input type="checkbox"/> re. non-healing wound: _____
	<input type="checkbox"/> other: _____

TREATMENT INITIATED ACCORDING TO WOUND PROTOCOL (NO FOLLOW UP REQUIRED)

To open a PDF copy of this form, **click on the link in the sidebar.**



Who is part of the multidisciplinary team?

- Patient & family
- Primary care provider
- Community nurse
- Wound resource nurse
- Podiatrist
- Diabetes educator
- Physiotherapist
- Occupational therapist
- Nutritionist
- Social worker
- Orthotist
- Vascular specialist

Education & resources

- CE-4021 “Care of the Patient with Lower Extremity Wounds” SK Polytechnic
- Additional self-study modules at www.woundpathwaysk.ca
- Pathway web pages (search sask wound pathway) for documents & links <http://www.sasksurgery.ca/provider/lowerextremitywound.html>

In summary:

The purpose of the pathway is to improve **patient outcomes** through early optimal wound management:

- Better healing times
- Reduced hospitalization and amputation

In summary:

Improvements for providers include:

- Standardized tools and protocols
- Better communication and teamwork
- Improved patient outcomes = reduced provider hours/products

QUESTIONS?

For more information contact your area's wound resource nurse, or visit the Lower Extremity Wound Pathway web pages at

www.sasksurgery.ca/provide/lowerextremitywound.html