Quality Standards

Venous Leg Ulcers

Care for Patients in All Settings

Health Quality Ontario

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Summary

This quality standard focuses on care for people who have developed or are at risk of developing a venous leg ulcer. The scope of the standard covers all settings, including primary care, home and community care, long-term care, and acute care. It also provides guidance on optimal care when a person transitions between these settings—for example, when someone is discharged from a hospital to their home or a long-term care home.

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About Quality Standards

Health Quality Ontario, in collaboration with clinical experts, patients, residents, and caregivers across the province, is developing quality standards for Ontario.

Quality standards are concise sets of statements that will:

- Help patients, residents, families, and caregivers know what to ask for in their care
- Help health care professionals know what care they should be offering, based on evidence and expert consensus
- Help health care organizations measure, assess, and improve their performance in caring for patients

The statements in this quality standard do not override the responsibility of health care professionals to make decisions with patients, after considering each patient's unique circumstances.

How to Use Quality Standards

Quality standards inform clinicians and organizations about what high-quality health care looks like. They are based on the best available evidence.

They also include indicators to help clinicians and organizations assess the quality of care they are delivering, and to identify gaps and areas for improvement. These indicators measure process, structure, and outcomes.

In addition, tools and resources to support clinicians and organizations in their quality improvement efforts accompany each quality standard.

For more information on how to use quality standards, contact:
qualitystandards@hqontario.ca.

About This Quality Standard

Scope of This Quality Standard

This quality standard focuses on care for people who have developed or are at risk of developing a venous leg ulcer. The scope of the standard covers all settings, including primary care, home and community care, long-term care, and acute care. It also provides guidance on optimal care when a person transitions between these settings—for example, when someone is discharged from a hospital to their home or a long-term care home. It is one of three quality standards related to wound care; the other two are for pressure injuries and diabetic foot ulcers.

Why This Quality Standard Is Needed

Wounds represent a significant burden for patients, their caregivers and families, clinicians, and the Ontario health system, but the human and financial costs of wounds are not fully appreciated.[1] Leg ulcers can cause social isolation and affect a person's ability to work because of pain, treatment requirements, and frequent health care appointments.[2]

Most leg ulcers are venous leg ulcers (some estimate the proportion to be 80% to 90% of all leg ulcers).[2] Rates of venous leg ulcers in Ontario have increased over time; the average increase in hospital discharges for venous leg ulcers across the 14 local health integration networks between 2012 and 2014 was 11% (Discharge Abstract Database, IntelliHEALTH, 2016). Recurrence rates are difficult to determine, but they are high,[3] with some studies specifying recurrence rates of 19% to 48% after 5 years.[4]

Wound care represents a significant area of opportunity for quality improvement in Ontario. There are important gaps and variations in access to services and in the quality of care received by people who have developed or are at risk of developing a venous leg ulcer. Previous efforts to improve the coordination and delivery of wound care across the province have highlighted the inconsistent application of best practice guidelines, lack of standardized documentation and tracking of wound outcome measures, and poor coordination of care.[5]

Based on the best available evidence and guided by expert consensus from health care professionals and people with lived experience, this quality standard addresses key areas with significant potential for quality improvement in the care of people who have developed or are at risk of developing a venous leg ulcer in Ontario. The 13 quality statements that make up this standard each provide guidance on high-quality care, with accompanying indicators to help health care professionals and organizations measure their own quality of care. Each statement also includes details on how it affects people who have developed or are at risk of developing a venous leg ulcer, their caregivers, health care professionals, and health care services at large.

Note: In this quality standard, the term patient *includes community care clients and residents of long-term care homes.*

Principles Underpinning This Quality Standard

This quality standard is underpinned by the principles of respect and equity.

People who have developed or are at risk of developing a venous leg ulcer should receive services that are respectful of their rights and dignity and that promote self-determination.

A high-quality health system is one that provides good access, experience, and outcomes for all Ontarians, no matter where they live, what they have, or who they are.

People who have developed or are at risk of developing a venous leg ulcer are provided service that is respectful of their gender, sexual orientation, socioeconomic status, housing, age, background (including self-identified cultural, ethnic, and religious background), and disability.

How We Will Measure Our Success

We have set a limited number of objectives for this quality standard as a whole, and we have mapped these objectives to indicators to measure its success. In addition, each quality statement within this quality standard is accompanied by one or more indicators to measure the successful implementation of the statement.

- Percentage of patients with a new venous leg ulcer in a 6-month period (incidence)
- Percentage of patients with a venous leg ulcer in a 6-month period (prevalence)
- Percentage of patients with a closed venous leg ulcer in a 12-week period
- Percentage of patients with a healed venous leg ulcer who were diagnosed with a secondary venous leg ulcer within 1 year (recurrence)
- Percentage of patients with a venous leg ulcer who had a diagnosed wound infection in a 6-month period
- Percentage of patients with a venous leg ulcer in a 12-month period who reported high satisfaction with the care provided

Quality Statements in Brief

QUALITY STATEMENT 1:
Screening for Peripheral Arterial Disease

People with a suspected venous leg ulcer are screened for peripheral arterial disease using the ankle-brachial pressure index (ABPI) or an alternative such as the toe-brachial pressure index (TBPI) if ABPI is not possible. Screening is conducted by a trained health care professional during the initial comprehensive assessment and at regular intervals (at least every 12 months) thereafter.

QUALITY STATEMENT 2:
Patient Education and Self-Management

People who have developed or are at risk of developing a venous leg ulcer, and their families or caregivers, are offered education about venous leg ulcers and who to contact for early intervention when needed.

QUALITY STATEMENT 3:
Comprehensive Assessment

People with a venous leg ulcer undergo a comprehensive assessment conducted by a health care professional trained in leg ulcer assessment and treatment, to determine the healing potential of the wound. This assessment informs the individualized care plan.

QUALITY STATEMENT 4:
Individualized Care Plan

People with a venous leg ulcer have a mutually agreed-upon individualized care plan that identifies patient-centred concerns and is reviewed and updated regularly.

QUALITY STATEMENT 5:
Compression Therapy

People who have developed or are at risk of developing a venous leg ulcer are offered compression therapy that is applied by a trained individual based on the results of the assessment and patient-centred goals of care.

QUALITY STATEMENT 6:
Wound Debridement

People with a venous leg ulcer have their wound debrided if it is determined as necessary in their assessment, and if it is not contraindicated. Debridement is carried out by a trained health care professional using an appropriate method.

QUALITY STATEMENT 7:
Local Infection Management

People with a venous leg ulcer and a local infection receive appropriate treatment, including antimicrobial and non-antimicrobial interventions.

QUALITY STATEMENT 8:
Deep/Surrounding Tissue Infection or Systemic Infection Management

People with a venous leg ulcer and a suspected deep/surrounding tissue infection or systemic infection receive urgent assessment (within 24 hours of initiation of care) and systemic antimicrobial treatment.

QUALITY STATEMENT 9:
Wound Moisture Management

People with a venous leg ulcer receive wound care that maintains the appropriate moisture balance or moisture reduction in the wound bed.

QUALITY STATEMENT 10:
Treatment with Pentoxifylline

People with large, slow-healing venous leg ulcers are assessed for appropriateness for pentoxifylline in combination with compression therapy.

QUALITY STATEMENT 11:
Referral to Specialist

People with a venous leg ulcer that is atypical, or that fails to heal and progress within 3 months despite optimal care, are referred to a specialist.

QUALITY STATEMENT 12:
Health Care Provider Training and Education

People who have developed or are at risk of developing a venous leg ulcer receive care from health care providers with training and education in the assessment and treatment of venous leg ulcers.

QUALITY STATEMENT 13:
Transitions in Care

People with a venous leg ulcer who transition between care settings have a team or provider who is accountable for coordination and communication to ensure the effective transfer of information related to their care.

1

Screening for Peripheral Arterial Disease

People with a suspected venous leg ulcer are screened for peripheral arterial disease using the ankle-brachial pressure index (ABPI) or an alternative such as the toe-brachial pressure index (TBPI) if ABPI is not possible. Screening is conducted by a trained health care professional during the initial comprehensive assessment and at regular intervals (at least every 12 months) thereafter.

Background

Prior to treatment, it is crucial to determine the cause and type of leg ulcer, because arterial and venous leg ulcers require different approaches to treatment and management. For example, compression therapy is an appropriate treatment for venous ulcers (see Quality Statement 5) but may not be appropriate or safe for arterial leg ulcers, depending on the severity of the arterial disease. Approximately 15% to 25% of people with venous leg ulcers will also have peripheral arterial disease.[6] Measurement of ABPI using Doppler ultrasound is the most common way to identify the presence of arterial disease; however, the test should be conducted by trained health care providers, and the results may be unreliable if people have calcification or diabetes.[3]

Sources: Australian Wound Management Association, New Zealand Wound Care Society, 2011[3] | Registered Nurses' Association of Ontario, 2007[9] | Society for Vascular Surgery and the American Venous Forum, 2014[6] | Wound Ostomy and Continence Nurses Society, 2011[2]

What This Quality Statement Means

For Patients

If your health care professional thinks you might have a leg ulcer, you should have a test for peripheral arterial disease at least once a year. The results will determine what type of treatment you should have, such as compression therapy.

For Clinicians

Conduct ABPI or alternative testing to screen for the presence of peripheral arterial disease if you suspect that someone has a venous leg ulcer. This should be done during the initial comprehensive assessment and at appropriate intervals thereafter to determine and ensure the appropriate treatment.

For Health Services

Ensure that tools, systems, processes, and resources are in place to support clinicians in conducting ABPI or alternative testing to screen for the presence of peripheral arterial disease when they suspect that someone has a venous leg ulcer. This includes providing access to training programs and materials.

DEFINITIONS USED WITHIN THIS QUALITY STATEMENT

Ankle-brachial pressure index

A vascular test that can be used to determine if there is sufficient arterial blood flow in the leg.

- ABPI of less than or equal to 0.9 at rest is a cut-off point for peripheral arterial disease[6]
- ABPI of less than or equal to 0.5 is usually an indication of critical limb ischemia[6]
- ABPI greater than 1.3[7] (range of 1.2[3] to 1.4[8]) suggests possible arterial calcification

Alternative testing

This includes TBPI if ABPI is not accurate or feasible (i.e., cannot be tolerated owing to pain or the location of the ulcer).

Regular intervals

Every 12 months, or more often if there is a change in the signs and symptoms of peripheral arterial disease.

Quality Indicators

Process Indicators

Percentage of people with a suspected venous leg ulcer who are screened for peripheral arterial disease using the ABPI or an alternative such as the TBPI during their initial comprehensive assessment

- Denominator: number of people with a suspected venous leg ulcer
- Numerator: number of people in the denominator who are screened for peripheral arterial disease using the ABPI or an alternative such as the TBPI during their initial comprehensive assessment
- Data source: local data collection

Percentage of people with a non-healing venous leg ulcer who have been reassessed for peripheral arterial disease using the ABPI or an alternative such as the TBPI in the previous 12 months or more often

- Denominator: number of people with a non-healing venous leg ulcer for more than 12 months
- Numerator: number of people in the denominator who have been reassessed for peripheral arterial disease using the ABPI or an alternative such as the TBPI in the previous 12 months or more often (if there is a change in the signs and symptoms of peripheral arterial disease)
- Data source: local data collection

2

Patient Education and Self-Management

People who have developed or are at risk of developing a venous leg ulcer, and their families or caregivers, are offered education about venous leg ulcers and who to contact for early intervention when needed.

Background

Providing education to people who have developed or are at risk of developing a venous leg ulcer, along with their families and caregivers, can enable them to play an active role in self-examination and care. People involved in self-management can help prevent an initial ulcer, detect the signs and symptoms of an ulcer early on, monitor current ulcers to determine if they are getting worse, and prevent recurrent ulceration. Adherence to prevention and management strategies such as compression therapy, exercise, and leg elevation, can positively affect healing times and prevent recurrence.[3] To support adherence, people with leg ulcers need to receive information about these interventions, including how to implement them.[3] Educational materials should be offered in both oral and written formats[3] and be tailored to a person's language and education level where possible. The content of the education will vary depending on the needs of the patient, focusing on prevention and/or treatment.

Sources: Australian Wound Management Association, New Zealand Wound Care Society, 2011[3] | Registered Nurses' Association of Ontario, 2007[9] | Society for Vascular Surgery and the American Venous Forum, 2014[6] | Wound Ostomy and Continence Nurses Society, 2011[2]

What This Quality Statement Means

For Patients

If you have a leg ulcer or are at risk for developing one, you and your family or caregiver should be taught about leg ulcers and who to contact for help.

For Clinicians

Offer people who have developed or are at risk of developing a venous leg ulcer, and their families and caregivers, education about leg ulcers and who to contact for early intervention when needed.

For Health Services

Ensure the availability of educational materials on venous leg ulcers for people who have developed or are at risk of developing leg ulcers, and their families and caregivers.

DEFINITIONS USED WITHIN THIS QUALITY STATEMENT

Risk factors

People are at a higher risk of developing a venous leg ulcer if they have signs and symptoms of venous disease[10] and:

- Have had a previous leg ulcer
- Have a family history of venous disease, leg ulcers, or varicose veins
- Have a history of thrombophilia, venous thromboembolism, or phlebitis
- Have had trauma or injury or major surgery to the leg
- Have had multiple pregnancies
- Are obese
- Have a sedentary occupation and lifestyle (people who stand or sit for long periods of time throughout the day)
- Have impaired/limited calf muscle pump function and restricted ankle range of motion

Education

This should be collaborative and interactive. The content will vary depending on the need of the patient, focusing on prevention and/or treatment, and may include the following topics:

- Information about how venous leg ulcers develop and the symptoms a patient might experience

Quality Indicators

Process Indicator

Percentage of people who have developed or are at risk of developing a venous leg ulcer who, along with their families and caregivers, are offered education about venous leg ulcers and who to contact for early intervention when needed

- Denominator: number of people who have developed a venous leg ulcer
- Numerator: number of people in the denominator who, along with their families and caregivers, are offered education (such as printed materials, video presentations and in-person resource/instruction) about how to prevent foot complications, how to monitor for the signs and symptoms of foot complications, and who to contact for early intervention when needed.
- Data source: local data collection

Structural Indicator

Availability of materials that provide education about venous leg ulcers for people who have developed or are at risk of developing a venous leg ulcer, along with their families

DEFINITIONS USED WITHIN THIS QUALITY STATEMENT

Education (continued)

- The importance of compression therapy, including wearing the stocking or bandage every day and the potential consequences of discontinuing compression therapy
- Devices that may assist in applying and removing compression therapy
- The importance of leg elevation and exercise (particularly to strengthen calf muscles, improve calf muscle pump function, ensure proper gait, and improve ankle range of motion), nutrition and weight management, skin care, and avoiding trauma
- Seeking early intervention and who to contact at the signs of swelling, skin discolouration (including redness), or abnormal skin sensations
- Managing comorbidities such as diabetes
- How to access support groups that may provide education and psychosocial support

3

Comprehensive Assessment

People with a venous leg ulcer undergo a comprehensive assessment conducted by a health care professional trained in leg ulcer assessment and treatment, to determine the healing potential of the wound. This assessment informs the individualized care plan.

Background

A comprehensive assessment helps identify causative and contributing factors, supports accurate diagnosis, and informs treatment and management. The results of the assessment help to determine the healability of the ulcer (ulcers may be classified as healable, maintenance, or non-healable) and informs a corresponding approach to optimal wound care and management.[11] Healable wounds have adequate blood supply and can be healed if the underlying cause is addressed and treated. Maintenance wounds have healing potential, but barriers are present that may prevent healing (such as lack of access to appropriate treatments and poor adherence to treatment). Non-healable wounds are not likely to heal because of non-treatable causes or illnesses.[11]

Sources: Australian Wound Management Association, New Zealand Wound Care Society, 2011[3] | Registered Nurses' Association of Ontario, 2007[9] | Society for Vascular Surgery and the American Venous Forum, 2014[6] | Wound Ostomy and Continence Nurses Society, 2011[2]

BACKGROUND CONTINUED

Comprehensive assessment also provides an opportunity to determine risk factors for recurrence, which is important given the high rate of recurrence of venous leg ulcers. Reassessment should be carried out at regular intervals to support ongoing management and monitoring of the healing process (optimal healing is characterized by a 25% reduction in size after 1 month).[3]

What This Quality Statement Means

For Patients

If you have a leg ulcer, you should have a full assessment. Your health care team will want to learn more about your health history, concerns, and preferences. They should also examine your legs and feet, including any wounds you have. They will use this information to develop a care plan with you.

For Clinicians

Carry out a comprehensive assessment for people with a venous leg ulcer to determine the healing potential of the wound. The results should inform their individualized care plan.

For Health Services

Ensure that tools, systems, processes, and resources are in place to help clinicians assess people with a venous leg ulcer. This includes providing the time required for a full assessment and ensuring access to assessment tools.

Quality Indicators

Process Indicators

Percentage of people with a venous leg ulcer who have a comprehensive assessment at first presentation, conducted by a health care professional trained in leg ulcer assessment and treatment, to determine the healing potential of the wound

- Denominator: number of people with a venous leg ulcer
- Numerator: number of people in the denominator who have a comprehensive assessment at first presentation, conducted by a health care professional trained in leg ulcer assessment and treatment, to determine the healing potential of the wound
- Data source: local data collection

DEFINITIONS USED WITHIN THIS QUALITY STATEMENT

Comprehensive assessment

This includes the following components, at a minimum:

- A comprehensive health history to identify risk factors (see definitions under Quality Statement 2)
- Pain history and characteristics
- Medication history
- Nutritional assessment
- Psychosocial assessment
- Screening for peripheral arterial disease (ankle-brachial pressure index or toe-brachial pressure testing if ankle-brachial pressure index is not possible)
- Physical examination of the limb(s):
  - Functional ability, including ankle range of motion and calf muscle pump function
  - Skin perfusion
  - Skin changes (including colour and temperature)
  - Pedal pulses
  - Swelling of the calf, thigh, and ankle
  - Signs and symptoms of infection

PROCESS INDICATORS CONTINUED

Percentage of people with a venous leg ulcer who have a comprehensive assessment at each transition, conducted by a health care professional trained in leg ulcer assessment and treatment, to determine the healing potential of the wound

- Denominator: number of people with a venous leg ulcer
- Numerator: number of people in the denominator who have a comprehensive assessment at each transition, conducted by a health care professional trained in leg ulcer assessment and treatment, to determine the healing potential of the wound
- Data source: local data collection

Percentage of people with a venous leg ulcer who have a comprehensive assessment at first presentation that informs their individualized care plan

- Denominator: number of people with a venous leg ulcer
- Numerator: number of people in the denominator who have a comprehensive assessment at first presentation that informs their individualized care plan
- Data source: local data collection

Percentage of people with a venous leg ulcer who have a comprehensive assessment at each transition that informs their individualized care plan

- Denominator: number of people with a venous leg ulcer
- Numerator: number of people in the denominator who have a comprehensive assessment at each transition that informs their individualized care plan
- Data source: local data collection

DEFINITIONS USED WITHIN THIS QUALITY STATEMENT

Comprehensive assessment (continued)

- Wound assessment:
  - Length, width, depth, and location
  - Edges and wound bed
  - Exudate, odour, pain, bleeding, and peri-wound condition
  - Signs and symptoms of infection
- Factors that may affect wound healing, such as comorbid conditions, limited adherence to prevention or treatment interventions (such as compression therapy), and medications
- Individual concerns and preferences, and activities of daily living

4

Individualized Care Plan

People with a venous leg ulcer have a mutually agreed-upon individualized care plan that identifies patient-centred concerns and is reviewed and updated regularly.

Background

An individualized care plan guides effective, integrated coordination and delivery of care. Developing treatment plans and goals should be a collaborative process involving the health care professional(s) and the person receiving care.[9]

Regular review of the care plan also provides an opportunity to revisit goals, review progress, and make adjustments based on the changing needs and preferences of the person receiving care.

Source: Advisory committee consensus

What This Quality Statement Means

For Patients

Your health care professional should work with you to develop a care plan that reflects your needs, concerns, and preferences. A care plan is a written document that you have agreed on with your health care professional. It describes your goals for your care, the care you will receive, and who will provide it.

For Clinicians

Work with people who have a venous leg ulcer to create a mutually agreed-upon individualized care plan that identifies patient-centred concerns and is reviewed and updated regularly.

For Health Services

Ensure that systems, processes, and resources are in place to support clinicians in developing individualized care plans for people with a venous leg ulcer. This may also include tools such as standardized care plan templates.

DEFINITIONS USED WITHIN THIS QUALITY STATEMENT

Individualized care plan

This includes:

- Results of the comprehensive assessment (see Quality Statement 3), including identified risk factors and the dimensions, characteristics, and healing trajectory of the ulcer (these should be reassessed on a regular basis)
- Education (see Quality Statement 2)
- Mutually agreed-upon goals and individual concerns and preferences
- Factors that may affect wound healing and patient-centred concerns, such as pain management, optimizing activities of daily living, and psychosocial needs and supports
- A plan for local wound care based on the healing potential of the wound, which may include:
  - Compression therapy
  - Debridement
  - Infection management
  - Dressings and moisture balance
- Exercise (particularly to strengthen calf muscles, improve calf muscle pump function, ensure proper gait, and improve ankle range of motion)
- Strategies for preventing recurrence

Quality Indicators

Process Indicators

Percentage of people with a venous leg ulcer who have a mutually agreed-upon individualized care plan that identifies patient-centred concerns

- Denominator: number of people with a venous leg ulcer
- Numerator: number of people in the denominator who have a mutually agreed-upon individualized care plan that identifies patient-centred concerns
- Data source: local data collection

Percentage of people with a venous leg ulcer who have had their individualized care plan reviewed and updated regularly

- Denominator: number of people with a venous leg ulcer
- Numerator: number of people in the denominator who have had their individualized care plan reviewed and updated regularly (frequency may range from daily to every 3 months)
- Data source: local data collection

DEFINITIONS USED WITHIN THIS QUALITY STATEMENT

Reviewed and updated regularly

Frequency may range from daily (during dressing changes and based on regular wound assessments) to every 1 to 3 months (for a full care plan review) and is based on the characteristics of the wound, the acuity of the problem, and whether or not there are significant changes. Reviewing the care plan may require a partial reassessment (repeating aspects of the comprehensive assessment) or a full reassessment, including revisiting the goals of care.

5

Compression Therapy

People who have developed or are at risk of developing a venous leg ulcer are offered compression therapy that is applied by a trained individual based on the results of the assessment and patient-centred goals of care.

Background

Compression therapy supports venous return (blood flow back to the heart), reduction in venous pressure, and prevention of venous stasis (decreased circulation).[3] Compression therapy can be used to prevent initial and recurrent venous leg ulcers and is an effective treatment for venous leg ulcers. People who have developed or are at risk of developing a venous leg ulcer should be offered the highest-level (strongest) compression they can tolerate and maintain. Recurrence rates are lower when people use high compression therapy (for example, 40 to 50 mm Hg), but adherence rates are higher with medium compression therapy (for example, 30 to 40 mm Hg).[2]

Sources: Australian Wound Management Association, New Zealand Wound Care Society, 2011[3] | Registered Nurses' Association of Ontario, 2007[9] | Society for Vascular Surgery and the American Venous Forum, 2014[6] | Wound Ostomy and Continence Nurses Society, 2011[2]

BACKGROUND CONTINUED

Compression therapy studies have generally not included people with diabetes, cardiovascular disease, malignancy, or mixed venous/arterial ulcers.[3] Compression may be contraindicated for people with heart failure, peripheral arterial disease, an ankle-brachial pressure index (ABPI) score at or below 0.5[6] or above 1.2,[3] peripheral neuropathy, and some vasculitic ulcers.[3,6] People with mixed venous/arterial leg ulcers require close care and monitoring. In these situations, modified compression therapy should be used and the person should be closely monitored for signs and symptoms of complications.[2,3]

What This Quality Statement Means

For Patients

As part of your care plan, you should be offered compression therapy, which can include special bandages or stockings that support your veins and increase the circulation in your legs. You should talk to your health care professional about the most appropriate form of therapy for you.

For Clinicians

To treat an existing ulcer or prevent initial or recurrent ulceration, offer compression therapy to people who have developed or are at risk of developing a venous leg ulcer, based on the results of the assessment and patient-centred goals of care.

For Health Services

Ensure access to compression therapy for people who have developed or are at risk of developing a venous leg ulcer, to treat and heal an existing ulcer or prevent initial or recurrent ulceration.

DEFINITIONS USED WITHIN THIS QUALITY STATEMENT

Risk of developing a venous leg ulcer

People should be offered compression therapy if they have signs and symptoms of venous disease[10] and:

- Have or have had a leg ulcer
- Have a history of thrombophilia, venous thromboembolism, or phlebitis
- Have chronic leg swelling
- Have impaired/limited calf muscle pump function and restricted ankle range of motion

Compression therapy

Application of compression bandages, garments, or pumps to the legs.

Trained individual

May include a health care provider, the patient, or a family member/ caregiver who has received training in the application of compression therapy.

Quality Indicators

Process Indicators

Percentage of people who have developed or are at risk of developing a venous leg ulcer and are offered compression therapy based on the results of the assessment and patient-centred goals of care

- Denominator: number of people who have developed or are at risk of developing a venous leg ulcer and in whom compression therapy is not contraindicated
- Numerator: number of people in the denominator who are offered compression therapy based on the results of the assessment and patient-centred goals of care
- Data source: local data collection

Percentage of people who have developed or are at risk of developing a venous leg ulcer and receive compression therapy that is applied by a trained individual

- Denominator: number of people who have developed or are at risk of developing a venous leg ulcer and in whom compression therapy is not contraindicated
- Numerator: number of people in the denominator who receive compression therapy that is applied by a trained individual
- Data source: local data collection

Structural Indicator

Local availability of health care providers with specific training in the application of compression therapy

6

Wound Debridement

People with a venous leg ulcer have their wound debrided if it is determined as necessary in their assessment, and if it is not contraindicated. Debridement is carried out by a trained health care professional using an appropriate method.

Background

The purpose of debridement is to remove nonviable, dead (slough and/or necrotic) tissue, callus, and foreign matter (debris) from the wound to reduce infection and promote healing. There are many methods of debridement, but the most common are sharp/surgical, autolytic, and mechanical.[3,9] The choice of method and frequency of debridement should be based on individual tolerance, preference, and goals of care; the presence of infection; the amount of exudate; the amount and type of dead tissue; and the skill and training of the health care professional.[2,9] Sharp debridement requires specialized knowledge, education, and skills.[12]

Sources: Australian Wound Management Association, New Zealand Wound Care Society, 2011[3] | Registered Nurses' Association of Ontario, 2007[9] | Society for Vascular Surgery and the American Venous Forum, 2014[6] | Wound Ostomy and Continence Nurses Society, 2011[2]

What This Quality Statement Means

For Patients

To help your wound heal, you should have dead skin, callus, and debris removed (this is called debridement) if your health care professional determines that it is necessary and appropriate.

For Clinicians

Debride wounds for people with a venous leg ulcer using an appropriate method of debridement if it is determined as necessary in their assessment, and if it is not contraindicated. Sharp/surgical debridement should be considered first, unless it is contraindicated.

For Health Services

Ensure that health care professionals across settings who care for people with venous leg ulcers are trained in appropriate methods of wound debridement. This includes providing access to training programs and materials.

Quality Indicators

Process Indicator

Percentage of people with a venous leg ulcer who have their wound appropriately debrided by a trained health care professional if it is determined as necessary in their assessment

- Denominator: number of people with a venous leg ulcer and wound debridement determined as necessary in their assessment
- Numerator: number of people in the denominator who have their wound appropriately debrided (using sharp/surgical, mechanical, or autolytic methods) by a trained health care professional
- Data source: local data collection
- Potential stratification: patient type

DEFINITIONS USED WITHIN THIS QUALITY STATEMENT

Contraindication

Inadequate vascular supply.

Appropriate method of debridement

Sharp/surgical debridement should be considered first for the removal of slough and dead tissue, unless it is contraindicated (for example, limited vascular supply), and if it is in alignment with the individualized care plan and mutually agreed-upon goals of care. Sharp/surgical debridement may be active/aggressive (extensive and aggressive removal of tissue) or conservative (removal of loose, dead tissue without pain or bleeding). Other appropriate methods include mechanical and autolytic debridement. Pain should be managed during debridement.

Trained health care professional

The health care professional has training specific to the method of debridement being used.

7

Local Infection Management

People with a venous leg ulcer and a local infection receive appropriate treatment, including antimicrobial and non-antimicrobial interventions.

Background

All wounds contain bacterial flora, and wounds that are not healing may be infected, but leg ulcers without clinical evidence of infection should not be treated with antibiotics.[2,6] Overuse and inappropriate use of antibiotics may contribute to the development of antibiotic-resistant bacteria.[13]

Local infection may be suspected when three or more of the following signs and symptoms are present: stalled healing (ulcer is not healing at the expected rate or is growing quickly); increased amount of exudate; red and bleeding tissue; increased amount of dead tissue; and foul odour.[14]

Sources: Australian Wound Management Association, New Zealand Wound Care Society, 2011[3] | Registered Nurses' Association of Ontario, 2007[9] | Society for Vascular Surgery and the American Venous Forum, 2014[6] | Wound Ostomy and Continence Nurses Society, 2011[2]

What This Quality Statement Means

For Patients

If your wound is infected, you should receive treatment, which may include antibiotics.

For Clinicians

Provide appropriate antimicrobial and non-antimicrobial treatment for people with an infected venous leg ulcer.

For Health Services

Ensure that systems, processes, and resources are in place to support clinicians in treating people with a venous leg ulcer and a local infection.

Quality Indicators

Process Indicator

Percentage of people with a venous leg ulcer and a local infection who receive the appropriate treatment, including antimicrobial and non-antimicrobial interventions

- Denominator: number of people with a venous leg ulcer and a local infection
- Numerator: number of people in the denominator who receive appropriate treatment, including antimicrobial and non-antimicrobial interventions
- Data source: local data collection

DEFINITIONS USED WITHIN THIS QUALITY STATEMENT

Local infection

This is characterized as superficial or local to the skin and subcutaneous tissue.

Treatment

For local infection, treatment may include both antimicrobial and non-antimicrobial (for example, debridement) interventions. Antimicrobial treatments are based on clinical assessment (severity, likely cause, and associated susceptibilities) and may be guided by properly conducted bacterial culture techniques.

8

Deep/Surrounding Tissue Infection or Systemic Infection Management

People with a venous leg ulcer and a suspected deep/surrounding tissue infection or systemic infection receive urgent assessment (within 24 hours of initiation of care) and systemic antimicrobial treatment.

Background

All wounds contain bacterial flora, and wounds that are not healing may be infected, but leg ulcers without clinical evidence of infection should not be treated with antibiotics.[2,6] Overuse and inappropriate use of antibiotics may contribute to the development of antibiotic-resistant bacteria.[13] Deep/surrounding or systemic infection may be suspected when three or more of the following signs and symptoms are present: increased ulcer size; elevated temperature in the peri-wound; ability to probe to bone or the presence of exposed bone; new areas of tissue breakdown; presence of red tissue and swelling or edema; increased exudate; and foul odour.[14] Pain is also a sign of deep infection.

Sources: Registered Nurses' Association of Ontario, 2007[9] | Society for Vascular Surgery and the American Venous Forum, 2014[6] | Wound Ostomy and Continence Nurses Society, 2011[2]

What This Quality Statement Means

For Patients

If you have a suspected deep/surrounding tissue or systemic infection, you should have an urgent assessment within 24 hours and treatment with antibiotics.

For Clinicians

Carry out an assessment within 24 hours and provide systemic antimicrobial treatment for people with a venous leg ulcer and suspected deep/surrounding tissue infection or systemic infection.

For Health Services

Ensure that systems, processes, and resources are in place to support clinicians in treating people with a venous leg ulcer with suspected deep/surrounding tissue infection or systemic infection.

DEFINITIONS USED WITHIN THIS QUALITY STATEMENT

Deep/surrounding tissue infection

This is characterized as a deeper wound, such as an abscess, underlying osteomyelitis, septic arthritis, or fasciitis.

Systemic infection

This is characterized as local infection with signs of systemic inflammatory response syndrome.

Quality Indicators

Process Indicators

Percentage of people with a venous leg ulcer and a suspected deep/surrounding tissue infection who receive an assessment within 24 hours of initiation of care

- Denominator: number of people with a venous leg ulcer and a suspected deep/surrounding tissue infection
- Numerator: number of people in the denominator who receive an assessment within 24 hours of initiation of care
- Data source: local data collection

PROCESS INDICATORS CONTINUED

Percentage of people with a venous leg ulcer and a suspected systemic infection who receive an assessment within 24 hours of initiation of care

- Denominator: number of people with a venous leg ulcer and a suspected systemic infection
- Numerator: number of people in the denominator who receive an assessment within 24 hours of initiation of care
- Data source: local data collection

Percentage of people with a venous leg ulcer and a confirmed deep/surrounding tissue infection who receive systemic antimicrobial treatment

- Denominator: number of people with a venous leg ulcer and a confirmed deep/surrounding tissue infection
- Numerator: number of people in the denominator who receive systemic antimicrobial treatment
- Data source: local data collection

Percentage of people with a venous leg ulcer and a confirmed systemic infection who receive systemic antimicrobial treatment

- Denominator: number of people with a venous leg ulcer and a confirmed systemic infection
- Numerator: number of people in the denominator who receive systemic antimicrobial treatment
- Data source: local data collection

9

Wound Moisture Management

People with a venous leg ulcer receive wound care that maintains the appropriate moisture balance or moisture reduction in the wound bed.

Background

Wound care that maintains moisture balance to promote healing includes cleansing of the wound (tap water is usually sufficient) and selection of a dressing that promotes a moist wound healing environment (for healable ulcers) or moisture reduction (for maintenance ulcers and non-healable ulcers). Cleansing the wound promotes healing by supporting improved wound assessment, increased comfort when adherent dressings are removed, and the potential for rehydration of the wound.[11] There are many options for wound dressings. Selection of these products should be based on clinical assessment of the wound and phase of healing; patient preference; pain management considerations; and ability to maintain a moist wound bed, control exudate, and avoid breakdown of the surrounding skin.[9,11]

Sources: Australian Wound Management Association, New Zealand Wound Care Society, 2011[3] | Registered Nurses' Association of Ontario, 2007[9] | Society for Vascular Surgery and the American Venous Forum, 2014[6] | Wound Ostomy and Continence Nurses Society, 2011[2]

What This Quality Statement Means

For Patients

Your health care team will determine whether your wound can heal or not. You should have a dressing that keeps the wound moist if it can heal, or dry if it cannot heal.

For Clinicians

For people with a venous leg ulcer, provide wound care that maintains the appropriate moisture balance or moisture reduction in the wound bed. A moist wound environment is appropriate for healable ulcers. Moisture reduction is appropriate for maintenance and non-healable ulcers.

For Health Services

Ensure that systems, procedures (protocols), and resources are in place to support clinicians in providing wound care that maintains the appropriate moisture balance or moisture reduction in the wound bed.

DEFINITIONS USED WITHIN THIS QUALITY STATEMENT

Moisture management

This is specific to the type of wound:

- Moisture balance and a moist wound environment for healable ulcers (ulcers that have adequate blood supply and can be healed if the underlying cause is addressed and treated).[11] Note: increased moisture is a sign of infection, which should be treated.
- Moisture reduction for maintenance ulcers (ulcers that have healing potential, but barriers are present that may prevent healing, such as lack of access to appropriate treatment and poor adherence to treatment) or non-healable ulcers (ulcers that are not likely to heal because of non-treatable causes or illnesses).[11]

Quality Indicators

Process Indicators

Percentage of people with a healable venous leg ulcer who receive wound care that maintains the appropriate moisture balance in the wound bed and a moist wound environment

- Denominator: number of people with a healable venous leg ulcer
- Numerator: number of people in the denominator who receive wound care that maintains the appropriate moisture balance in the wound bed and a moist wound environment
- Data source: local data collection

Percentage of people with a maintenance or non-healable venous leg ulcer who receive wound care that maintains the appropriate moisture reduction in the wound bed

- Denominator: number of people with a maintenance or non-healable venous leg ulcer
- Numerator: number of people in the denominator who receive wound care that maintains the appropriate moisture reduction in the wound bed
- Data source: local data collection

10

Treatment with Pentoxifylline

People with large, slow-healing venous leg ulcers are assessed for appropriateness for pentoxifylline in combination with compression therapy.

Background

Pentoxifylline increases blood circulation and the amount of oxygen delivered by the blood to the muscles.[3] It has been shown to improve the rate of healing for venous leg ulcers,[15,16] but may take up to 8 weeks to show full results.[3]

Sources: Australian Wound Management Association, New Zealand Wound Care Society, 2011[3] | Society for Vascular Surgery and the American Venous Forum, 2014[6] | Wound Ostomy and Continence Nurses Society, 2011[2]

What This Quality Statement Means

For Patients

If you have a leg ulcer that is large or taking a long time to heal, you should be offered a medication called pentoxifylline, which can help heal your leg ulcer. You should talk to your health care professional to see if this medication is right for you. You should continue compression therapy while you take this medication.

For Clinicians

Assess people with large, slow-healing venous leg ulcers for their appropriateness for pentoxifylline treatment, in combination with compression therapy.

For Health Services

Ensure access to pentoxifylline for people with large, slow-healing venous leg ulcers.

Quality Indicators

Process Indicator

Percentage of people with large, slow-healing venous leg ulcers who are assessed for appropriateness for pentoxifylline treatment in combination with compression therapy

- Denominator: people with large, slow-healing venous leg ulcers
- Numerator: number of people in the denominator who are assessed for appropriateness for pentoxifylline treatment in combination with compression therapy
- Data source: local data collection

DEFINITIONS USED WITHIN THIS QUALITY STATEMENT

Appropriateness for treatment

Some people cannot tolerate this medication, and pentoxifylline is not recommended for people with[17]:

- Acute myocardial infarction
- Severe coronary artery disease (where the clinician thinks myocardial stimulation may be harmful)
- Hemorrhage
- A history of intolerance to pentoxifylline or other xanthines, such as caffeine, theophylline, and theobromine
- Peptic ulcers (or a recent history of peptic ulcers)

11

Referral to Specialist

People with a venous leg ulcer that is atypical, or that fails to heal and progress within 3 months despite optimal care, are referred to a specialist.

Background

Referral to health care professionals who offer specialized services is important when ulcers are atypical or are not healing with appropriate local wound care. Referral to a specialist may be required in the following circumstances: "diagnostic uncertainty; atypical ulcer characteristics or location; suspicion of malignancy; treatment of underlying conditions, including diabetes, rheumatoid arthritis, and vasculitis; suspected presence of peripheral arterial disease; ankle-brachial pressure index greater than 1.2; contact dermatitis; ulcers that have not healed within three months; recurring ulceration; healed ulcers with a view to venous surgery; antibiotic-resistant infected ulcers; ulcers causing uncontrolled pain"[3]; as well as cellulitis, venous thromboembolism, and variceal bleeds.[2]

Sources: Australian Wound Management Association, New Zealand Wound Care Society, 2011[3] | Wound Ostomy and Continence Nurses Society, 2011[2]

What This Quality Statement Means

For Patients

If your leg ulcer is unusual or not healing, you should be referred to a specialist for further assessment and appropriate treatment.

For Clinicians

Refer people with a venous leg ulcer that is atypical, or that fails to heal and progress despite optimal care, to a specialist for further assessment and appropriate treatment.

For Health Services

Ensure that systems, procedures (protocols), and resources are in place for referral to a specialist for people with a venous leg ulcer that is atypical, or that fails to heal and progress despite optimal care.

Quality Indicators

Process Indicator

Percentage of people with a venous leg ulcer that is atypical, or that fails to heal and progress within 3 months despite optimal care, who are seen by a specialist

- Denominator: number of people with a venous leg ulcer that is atypical, or that fails to heal within 3 months and progress despite optimal care
- Numerator: number of people in the denominator who are seen by a specialist
- Data source: local data collection

DEFINITIONS USED WITHIN THIS QUALITY STATEMENT

Atypical ulcer

Unusual characteristics or location.

Typical characteristics of a venous leg ulcer include:

- Location on the lower leg
- Irregular edges
- Wound bed that is shallow, ruddy red, with yellow slough and granulation tissue
- Mild, moderate, or heavy amount of exudate
- Surrounding (peri-wound) skin is macerated, crusty, scaling, or hyperpigmented
- Odour and bleeding may or may not be present

Ulcer that fails to heal and progress

A healable ulcer that has not reduced in size by 25% in 1 month or healed within 3 months despite optimal care.

Specialist

Health care professional with specialized training, experience, and expertise in wound care.

12

Health Care Provider Training and Education

People who have developed or are at risk of developing a venous leg ulcer receive care from health care providers with training and education in the assessment and treatment of venous leg ulcers.

Background

People who have developed or are at risk of developing venous leg ulcers benefit from individualized care by health care professionals who have specific, comprehensive training and education in the appropriate assessment and management of these types of wounds.[3] Training and education materials or programs are additional to entry-level programs and should be tailored to providers' roles and responsibilities.

Sources: Australian Wound Management Association, New Zealand Wound Care Society, 2011[3] | Registered Nurses' Association of Ontario, 2007[9] | Society for Vascular Surgery and the American Venous Forum, 2014[6]

What This Quality Statement Means

For Patients

You should receive care from a team of health care professionals who have been trained to care for people who have a venous leg ulcer or are at risk for one.

For Clinicians

Ensure that you have the training and education required to effectively provide care (including assessments and treatments) for people who have developed or are at risk of developing a venous leg ulcer, in accordance with your professional role.

For Health Services

Ensure that health care providers caring for people who have developed or are at risk of developing a venous leg ulcer have training and education in how to carry out comprehensive assessments and provide appropriate treatment, including compression therapy and local wound care.

DEFINITIONS USED WITHIN THIS QUALITY STATEMENT

Risk of developing a venous leg ulcer

People are at a higher risk of developing a venous leg ulcer if they have signs and symptoms of venous disease[10] and:

- Have had a previous leg ulcer
- Have a family history of venous disease, leg ulcers, or varicose veins
- Have a history of thrombophilia, venous thromboembolism, or phlebitis
- Have had trauma, injury, or major surgery to the leg
- Have had multiple pregnancies
- Are obese
- Have a sedentary occupation and lifestyle (people who stand or sit for long periods of time throughout the day)
- Have impaired/limited calf muscle pump function and restricted ankle range of motion

Quality Indicators

Structural Indicator

Local availability of providers trained in the assessment and management of venous leg ulcers

DEFINITIONS USED WITHIN THIS QUALITY STATEMENT

Provider training and education

These should include the following skills and information, at a minimum:

- Ankle-brachial pressure index testing (Quality Statement 1)
- Techniques for providing effective patient education (Quality Statement 2)
- Comprehensive assessment (Quality Statement 3) and individualized care planning (Quality Statement 4)
- Compression therapy (proper application and monitoring) (Quality Statement 5)
- Treatment, including local wound care (Quality Statements 6, 7, 8, 9)
- Criteria for specialist referral (Quality Statement 11)
- Primary prevention and prevention of recurrence

13

Transitions in Care

People with a venous leg ulcer who transition between care settings have a team or provider who is accountable for coordination and communication to ensure the effective transfer of information related to their care.

Background

Transitions in care involve changes in providers or locations (within and between care settings)[18] and can increase the risk of errors and miscommunication related to a person's care. To support coordination and continuity of care, transition planning should be collaborative, involving the person with the venous leg ulcer, their family, and their caregiver(s), and incorporating their individual concerns and preferences. To support the transfer of accurate information, all providers must document the most up-to-date information in the individualized care plan. A provider or team should be accountable for ensuring the accurate and timely transfer of information on an ongoing basis to the proper recipients as part of seamless, coordinated transitions.

Source: Advisory committee consensus

What This Quality Statement Means

For Patients

When you change health care settings (for example, you return home after being cared for in a hospital), your health care team or health care professional should work with you to make sure that important information is transferred with you, and that you are connected to the supports you need.

For Clinicians

Ensure that people moving between providers or care settings have a person or team responsible for coordinating their care and transferring information.

For Health Services

Ensure that systems, processes, and resources are in place to enable smooth transitions between care settings for people with a venous leg ulcer.

DEFINITIONS USED WITHIN THIS QUALITY STATEMENT

Team or provider

This is the provider or team of providers who have an ongoing role in the coordination and delivery of health care services for the person who has developed a venous leg ulcer. Where possible, this should be a primary care provider or primary care team. Alternatively, an individual at the regional level who is responsible for care coordination could fill this role.

Quality Indicators

Process Indicators

Percentage of people with a venous leg ulcer who transition between care settings and have a team or provider who is accountable for coordination and communication to ensure the effective transfer of information related to their care

- Denominator: number of people with a venous leg ulcer who transition between care settings
- Numerator: number of people in the denominator who have a team or provider who is accountable for coordination and communication to ensure the effective transfer of information related to their care
- Data source: local data collection

Percentage of people with a venous leg ulcer who transition between care settings and report that their team or provider knew about their medical history

- Denominator: number of people with a venous leg ulcer who transition between care settings and answer the question, “During your most recent visit, did this team or provider seem to know about your medical history?”
- Numerator: number of people in the denominator who answer “Yes”
- Data source: local data collection

Percentage of people with a venous leg ulcer who transition between care settings and report that there was good communication about their care between their team and care providers

- Denominator: number of people with a venous leg ulcer who transition between care settings and answer the question, “Do you feel that there was good communication about your care between your team, doctors, nurses, and other staff?”
- Numerator: number of people in the denominator who answer “Usually” or “Always”
- Data source: local data collection

Acknowledgements

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Health Quality Ontario thanks the following individuals for their generous, voluntary contributions of time and expertise to help create this quality standard:

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About Health Quality Ontario

Health Quality Ontario is the provincial advisor on the quality of health care. We are motivated by a single-minded purpose: Better health for all Ontarians.

Who We Are

We are a scientifically rigorous group with diverse areas of expertise. We strive for complete objectivity, and look at things from a vantage point that allows us to see the forest and the trees. We work in partnership with health care providers and organizations across the system, and engage with patients themselves, to help initiate substantial and sustainable change to the province's complex health system.

What We Do

We define the meaning of quality as it pertains to health care, and provide strategic advice so all the parts of the system can improve. We also analyze virtually all aspects of Ontario's health care. This includes looking at the overall health of Ontarians, how well different areas of the system are working together, and most importantly, patient experience. We then produce comprehensive, objective reports based on data, facts and the voice of patients, caregivers, and those who work each day in the health system. As well, we make recommendations on how to improve care using the best evidence. Finally, we support large scale quality improvements by working with our partners to facilitate ways for health care providers to learn from each other and share innovative approaches.

Why It Matters

We recognize that, as a system, we have much to be proud of, but also that it often falls short of being the best it can be. Plus certain vulnerable segments of the population are not receiving acceptable levels of attention. Our intent at Health Quality Ontario is to continuously improve the quality of health care in this province regardless of who you are or where you live. We are driven by the desire to make the system better, and by the inarguable fact that better has no limit.

Quality Standards

Looking for more information?

Visit our website at **hqontario.ca** and contact us at **qualitystandards@hqontario.ca** if you have any questions or feedback about this guide.

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ISBN 978-1-4868-0340-8 (Print)
ISBN 978-1-4868-0346-0 (PDF)

Ontario
Health Quality Ontario