Quality Standards

Venous and Mixed Venous/Arterial Leg Ulcers
Care for Patients in All Settings

December 2016

Let’s make our health system healthier
Summary

This quality standard focuses on care for people who have developed or are at risk of developing a venous or mixed venous/arterial leg ulcer. The scope of the standard covers all settings, including primary care, home 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.

About Quality Standards

Health Quality Ontario, in collaboration with clinicians, 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 recommendations 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.
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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 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.
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 or mixed venous/arterial leg ulcer. The scope of the standard covers all settings, including primary care, home 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. Leg ulcers can cause social isolation and affect a person’s ability to work because of pain, treatment requirements, and frequent health care appointments.¹

Venous leg ulcers account for 80% to 90% of all leg ulcers.¹ 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). The rate of recurrence for venous leg ulcers is also high, ranging from 19% to 48% after 5 years.²

Wound care represents a significant area of opportunity for quality improvement in Ontario. Across the province, 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 or mixed venous/arterial 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.³

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 or mixed venous/arterial leg ulcer in Ontario. The 14 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 its successful delivery affects people who have developed or are at risk of developing a venous or mixed venous/arterial 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 facilities.
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 or mixed venous/arterial leg ulcer should receive services that are respectful of their rights and dignity and that promote self-determination.

A 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 or mixed venous/arterial 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

Each quality statement within this quality standard is accompanied by one or more indicators to measure the successful implementation of the statement. In addition to indicators for specific statements, a small number of health outcome indicators have been selected to measure the success of the quality standard as a whole:

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

[Quality Statements in Brief to be inserted once statements are finalized.]
## Quality Statement 1: Patient Education and Self-Management

People who have developed or are at risk of developing a venous or mixed venous/arterial leg ulcer (as well as their families or caregivers) are offered education about venous and mixed venous/arterial 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 or mixed venous/arterial leg ulcer, as well as 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. To support adherence, people with leg ulcers need to receive information about these interventions and how to implement them. Educational materials should be offered in both oral and written formats. The content of the education will vary depending on the need of the patient, focusing on prevention and/or treatment.

### Definitions Used Within This Quality Statement

#### Risk factors

People are at a higher risk of developing a venous leg ulcer if they:

- Have had a previous leg ulcer
- Have venous disease, including venous insufficiency and varicose veins
- Have a family history of venous disease, leg ulcers, or varicose veins
- Have a history of thrombophilia, venous thromboembolism, or phlebitis
- Have had multiple pregnancies
- Are over 60 years old
- Are obese
- Have a sedentary occupation and lifestyle
- Have impaired/limited calf muscle pump function

### Education

This is 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 hypertension and venous and mixed venous/arterial leg ulcers develop, and what symptoms a patient might experience
- The importance of compression therapy: the importance of wearing it every day, its role in managing venous hypertension and leg ulcers, and the potential implications of declining or discontinuing compression therapy
- Devices that may assist in applying and removing compression therapies
- The importance of leg elevation and exercise (particularly to strengthen calf muscles, improve calf muscle pump function, 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, redness, or abnormal skin sensations
- Managing comorbidities such as diabetes
- How to access support groups that may provide education and psychosocial support

**What This Quality Statement Means**

**For Patients**
If you have a leg ulcer or are at risk of developing one, you should be taught about leg ulcers and who to contact for help when you need it.

**For Clinicians**
Offer people who have developed or are at risk of developing a venous or mixed venous/arterial leg ulcer (as well as their families and caregivers) education about leg ulcers and who to contact to seek early intervention when needed.

**For Health Services**
Ensure the availability of educational materials on venous and mixed venous/arterial leg ulcers for people who have developed or are at risk of developing leg ulcers, as well as their families and caregivers.

**Quality Indicators**

**Process Indicator**

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

- Denominator: number of people who have developed or are at risk of developing a venous or mixed venous/arterial leg ulcer
- Numerator: number of people in the denominator who, along with their caregivers, are offered education about venous or mixed venous/arterial leg ulcers and who to contact for early intervention when needed
- Data source: local data collection

**Sources**

- Australian Wound Management Association, New Zealand Wound Care Society, 2011
- Registered Nurses’ Association of Ontario, 2007
- Wound Ostomy and Continence Nurses Society, 2011
Quality Statement 2: Comprehensive Assessment

People with a venous or mixed venous/arterial leg ulcer undergo a comprehensive assessment conducted by a health care professional trained in leg ulcer assessment and treatment. 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 can help to determine the healability of the ulcer (wounds are classified as healable, maintenance, or nonhealable) and develop a corresponding approach to optimal wound care and management.7 Healable wounds have adequate blood supply and can be healed if the underlying cause is addressed. Maintenance wounds have healing potential, but barriers are present that may compromise healing (such as lack of access to appropriate treatments and poor adherence to treatment). Nonhealable wounds are not likely to heal because of irreversible causes or illnesses, such as critical ischemia or a nontreatable malignancy.7 Comprehensive assessment also provides an opportunity to determine risk factors for recurrence, which is important given the high rate of recurrence of venous and mixed venous/arterial 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).4

Definitions Used Within This Quality Statement

Comprehensive assessment
This is completed at first presentation and transitions and includes the following components, at a minimum:

- A comprehensive health history to address risk factors, including family history, pregnancy, older age, thrombophilia, systemic inflammation, obesity, and venous thromboembolism
- Leg ulcer history
- Pain history and characteristics
- Medication history
- Nutritional assessment
- Psychosocial assessment
- Screening for peripheral arterial disease (ankle-brachial pressure index or toe-brachial pressure testing)
- Physical examination of the affected limb(s):
  - Functional ability, including calf muscle pump function
  - Skin perfusion
  - Skin changes
  - Pedal pulses
  - Signs and symptoms of infection
- Wound assessment:
  - Position and size (length, width, depth)
  - 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

**What This Quality Statement Means**

**For Patients**

You should have a full assessment if you have a leg ulcer. An assessment means that your team of health care professionals will want to learn more about your health history, your concerns, and your preferences for care. They will also examine your legs and feet, including any wounds you have. This full assessment will allow them to work with you to figure out how best they can help.

**For Clinicians**

Carry out a comprehensive assessment for people with a venous or mixed venous/arterial leg ulcer. 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 or mixed venous/arterial leg ulcer. This includes providing the time required for a full assessment and ensuring access to assessment tools.

**Quality Indicators**

**Process Indicator**

**Percentage of people with a venous or mixed venous/arterial leg ulcer who have a comprehensive assessment that informs their individualized care plan at first presentation and at transitions**

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

**Sources**

- Australian Wound Management Association, New Zealand Wound Care Society, 2011
- Registered Nurses’ Association of Ontario, 2007
- Wound Ostomy and Continence Nurses Society, 2011
Quality Statement 3: Screening for Peripheral Arterial Disease

People with a suspected venous or mixed venous/arterial 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). Screening is conducted by a trained health care provider 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 not appropriate or safe for arterial leg ulcers and some mixed venous/arterial leg ulcers, depending on the severity of the arterial disease. Approximately 15% to 25% of patients with venous leg ulcers will also have a concomitant arterial component. Doppler ultrasound measurement of ABPI 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 in patients with calcification or diabetes.

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 and a clinical picture of arterial disease should be considered arterial insufficiency (trigger for referral to a vascular specialist for further evaluation)
- ABPI greater than 1.2 suggests possible arterial calcification

Alternative testing
This includes TBPI if ABPI is not feasible (i.e., cannot be tolerated due 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.

What This Quality Statement Means

For Patients
If your health care professional thinks you might have a leg ulcer, you should have a test to see if you have peripheral arterial disease. This will determine what type of treatment you should receive, including whether or not you should have compression therapy. You should have this test at least once a year.

For Clinicians
Conduct ABPI or alternative testing to screen for the presence of peripheral arterial disease if you suspect that someone has a venous or mixed venous/arterial leg ulcer. This should be done during the initial comprehensive assessment and at appropriate intervals thereafter to determine and ensure the appropriate treatment.
Draft—do not cite. Report is a work in progress and could change following public consultation.

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 or mixed venous/arterial leg ulcer. This includes providing access to training programs and materials.

Quality Indicators

Process Indicators

Percentage of people with a suspected venous or mixed venous/arterial 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 or mixed venous/arterial 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 nonhealing venous or mixed venous/arterial leg ulcer who were reassessed for peripheral arterial disease using the ABPI or an alternative such as the TBPI in the previous 12 months

- Denominator: number of people with a nonhealing venous or mixed venous/arterial leg ulcer for more than 12 months
- Numerator: number of people in the denominator who were reassessed for peripheral arterial disease using the ABPI or an alternative such as the TBPI in the previous 12 months
- Data source: local data collection

Sources

- Australian Wound Management Association, New Zealand Wound Care Society, 2011
- Registered Nurses’ Association of Ontario, 2007
- Wound Ostomy and Continence Nurses Society, 2011
Quality Statement 4: Patient-Centred Concerns

People with a venous or mixed venous/arterial leg ulcer have a conversation with their health care provider about their concerns and preferences. These concerns and preferences are incorporated into their goals of care and individualized care plan.

Background

When people with a venous or mixed venous/arterial leg ulcer have conversations with their health care providers about their concerns and preferences, it encourages and supports the development of mutually agreed-upon goals of care. A shared decision-making approach should be used, involving collaboration between health care providers and patients, taking into consideration the clinical evidence and the patient’s values and preferences. This process ensures that the patient’s perspective is heard when evaluating and weighing care options and recognizes that both the health care provider and patient are experts with different forms of expertise. It also supports provision of care that addresses the whole person as a unique individual, not just their condition.

Definitions Used Within This Quality Statement

Patient-centred concerns
These may include pain management, optimizing activities of daily living, and psychosocial supports.

What This Quality Statement Means

For Patients
Your health care professional should develop, in partnership with you, a care 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 the care you are to receive, who will provide it, and your goals for your care.

For Clinicians
Talk to people with a venous or mixed venous/arterial leg ulcer about their concerns and preferences as part of comprehensive and ongoing assessment. Incorporate patients’ concerns and preferences into their goals of care and individualized care plan.

For Health Services
Ensure that tools, systems, processes, and resources are in place to help clinicians discuss individual concerns and preferences with people who have a venous or mixed venous/arterial leg ulcer, and incorporate those concerns and preferences into care plans.

Quality Indicators

Process Indicators

Percentage of people with a venous or mixed venous/arterial leg ulcer who have a conversation with their health care provider about their concerns and preferences as part of their comprehensive assessment and at each reassessment

- Denominator: number of people with a venous or mixed venous/arterial leg ulcer
• Numerator: number of people in the denominator who have a conversation with their health care provider about their concerns and preferences as part of their comprehensive assessment and at each reassessment
• Data source: local data collection

Percentage of people with a venous or mixed venous/arterial leg ulcer and documented evidence of screening for pain at admission to care

• Denominator: number of people with a venous or mixed venous/arterial leg ulcer at admission to care
• Numerator: number of people in the denominator with documented evidence of screening for pain
• Data source: local data collection

Percentage of people with a venous or mixed venous/arterial leg ulcer and a documented discussion about activities of daily living and psychosocial supports at admission to care

• Denominator: number of people with a venous or mixed venous/arterial leg ulcer at admission to care
• Numerator: number of people in the denominator with a documented discussion of activities of daily living and psychosocial supports
• Data source: local data collection

Source
• Advisory committee consensus
Quality Statement 5: Individualized Care Plan

People with a venous or mixed venous/arterial leg ulcer have an individualized care plan that guides their care, identifies mutually agreed-upon goals of care, 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. 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.

Definitions Used Within This Quality Statement

Individualized care plan
This includes:

- Results of the comprehensive assessment
- Mutually agreed-upon goals and individual concerns and preferences, including pain management and activities of daily living
- 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
- Strategies for preventing recurrence

Reviewed and updated regularly
The frequency may range from daily (during dressing changes and based on regular wound assessments) to every 3 to 6 months (for a full care plan review) and is based on the characteristics of the wound and acuity of the problem. 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.

What This Quality Statement Means

For Patients
Your health care professional should develop, in partnership with you, 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 the care you are to receive, who will provide it, and your goals for your care.

For Clinicians
Work with people who have a venous or mixed venous/arterial leg ulcer to create an individualized care plan that documents the results of their assessments. The plan should include mutually agreed-upon goals of care and individual concerns and preferences (including pain management and activities of daily living), a plan for local wound care, and strategies for preventing recurrence. The plan should be 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 or mixed venous/arterial leg ulcer. This may also include tools such as standardized care plan templates.

Quality Indicators

Process Indicators

Percentage of people with a venous or mixed venous/arterial leg ulcer who have an individualized care plan that guides their care

- Denominator: number of people with a venous or mixed venous/arterial leg ulcer
- Numerator: number of people in the denominator who have an individualized care plan that guides their care
- Data source: local data collection

Percentage of people with a venous or mixed venous/arterial leg ulcer who have had their care plan reviewed in the past 6 months

- Denominator: number of people with a venous or mixed venous/arterial leg ulcer
- Numerator: number of people in the denominator who have had their care plan reviewed in the past 6 months
- Data source: local data collection

Source

- Advisory committee consensus
Quality Statement 6: Compression Therapy

People who have developed or are at risk of developing a venous or mixed venous/arterial leg ulcer receive 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), reduces venous pressure, and prevents venous stasis (decreased circulation).\(^4\) Compression therapy can be used to prevent initial and recurrent venous leg ulcers and is the “gold standard” for venous leg ulcer treatment. 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).\(^3\) Generally, higher pressure is better than lower pressure, and some pressure is better than no pressure.\(^4\)

Compression therapy studies have not generally included people with diabetes, cardiovascular disease, malignancy, or mixed venous/arterial ulcers. Compression may be contraindicated for people with heart failure, peripheral arterial disease, an ankle-brachial pressure index (ABPI) score below 0.5 or above 1.2, peripheral neuropathy, and some vasculitic ulcers.\(^4,6\) People with mixed venous/arterial leg ulcers (ABPI score of 0.5 to 0.8)\(^5\) require close care and monitoring. In these situations, compression therapy should be used with caution at a lower level, and the person should be closely monitored for signs and symptoms of complications.\(^1,4\)

Definitions Used Within This Quality Statement

Risk factors
People are at a higher risk of developing a venous leg ulcer if they:

- Have had a previous leg ulcer
- Have venous disease, including venous insufficiency and varicose veins
- Have a family history of venous disease, leg ulcers, or varicose veins
- Have a history of thrombophilia, venous thromboembolism, or phlebitis
- Have had multiple pregnancies
- Are over 60 years old
- Are obese
- Have a sedentary occupation and lifestyle
- Have impaired/limited calf muscle pump function

Compression therapy
Application of compression bandages or garments to the legs at an even tension.

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

What This Quality Statement Means

For Patients
You should receive compression therapy, which is wearing special bandages or garments specially designed to support your veins and increase circulation in your legs. Compression therapy can be used to prevent an ulcer or to treat and heal an ulcer if you already have one. You should talk to your health care provider to see if compression therapy is right for you.

For Clinicians
Provide compression therapy to people who have developed or are at risk of developing a venous or mixed venous/arterial leg ulcer to treat an existing ulcer or prevent initial or recurrent ulceration, 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 or mixed venous/arterial leg ulcer, to treat and heal an existing ulcer or prevent initial or recurrent ulceration.

Quality Indicators

Process Indicator

Percentage of people who have developed or are at risk of developing a venous or mixed venous/arterial leg ulcer who receive compression therapy that is applied by a trained individual 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 or mixed venous/arterial 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 based on the results of the assessment and patient-centred goals of care
- Data source: local data collection

Structural Indicator

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

- Data source: Regional and/or provincial data collection would need to be developed

Sources

- Australian Wound Management Association, New Zealand Wound Care Society, 2011
- Registered Nurses’ Association of Ontario, 2007
- Wound Ostomy and Continence Nurses Society, 2011
Quality Statement 7: Wound Debridement

People with a venous or mixed venous/arterial leg ulcer have their wound debrided if it is determined as necessary in their assessment. 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. The presence of nonviable tissue can prolong the healing process by increasing inflammation and levels of bacteria and toxins. There are many methods of debridement, but the most common are sharp/surgical, autolytic, and mechanical. Selection of the method and frequency of debridement should be based on individual tolerance and preference; the time to complete debridement; the size of the ulcer and presence of infection; the type of exudate; and the amount and nature of foreign matter present. Sharp debridement requires a level of specialized wound management with specific knowledge, training, and education.

Definitions Used Within This Quality Statement

Appropriate method of debridement
Sharp/surgical debridement should be considered first, unless it is contraindicated (for example, limited vascular supply or the patient is receiving palliative care). The method 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.

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

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).

For Clinicians
Debride wounds for people with a venous or mixed venous/arterial leg ulcer using an appropriate method of debridement. Sharp/surgical debridement should be considered first, unless it is contraindicated.

For Health Services
Ensure that health care professionals across settings who are caring for people with venous or mixed venous/arterial 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 or mixed venous/arterial leg ulcer who have their wound debrided by a trained health care professional if it is determined as necessary in their assessment

- Denominator: number of people with a venous or mixed venous/arterial leg ulcer with wound debridement determined as necessary in their assessment
- Numerator: number of people in the denominator who have their wound appropriately debrided by a trained health care professional
- Data source: local data collection
- Potential stratification: patient type

Sources

- Australian Wound Management Association, New Zealand Wound Care Society, 2011
- Registered Nurses’ Association of Ontario, 2007
- Wound Ostomy and Continence Nurses Society, 2011
Quality Statement 8: Local Infection Management

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

Background

All wounds contain bacterial flora, and wounds that are not healing may be infected, but prophylactic antibiotic treatment of leg ulcers or antimicrobial treatment without clinical evidence of infection is not warranted. Overuse and inappropriate use of antibiotics may contribute to the development of antibiotic-resistant bacteria. 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.

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 (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. Initial treatment includes oral narrow-spectrum antibiotic therapy aimed at gram-positive organisms for up to 2 weeks.

What This Quality Statement Means

For Patients
If your wound is infected, you should have treatment with antibiotics.

For Clinicians
Provide the appropriate treatment and/or dressing for people with an infected venous or mixed venous/arterial leg ulcer. Initial treatment includes both antimicrobial and non-antimicrobial interventions. Initial antimicrobial treatment includes oral narrow-spectrum antibiotic therapy aimed at gram-positive organisms for up to 2 weeks.

For Health Services
Ensure that systems, processes, and resources are in place to support clinicians in treating people with a venous or mixed venous/arterial leg ulcer and local infection.

Quality Indicators

Process Indicators

Percentage of people with a venous or mixed venous/arterial leg ulcer and a local infection who receive appropriate non-antimicrobial (debridement) treatment

- Denominator: number of people with a venous or mixed venous/arterial leg ulcer and a local infection
Numerator: number of people in the denominator who receive appropriate non-antimicrobial (debridement) treatment
Data source: local data collection

Percentage of people with a venous or mixed venous/arterial leg ulcer and a local infection who receive oral narrow-spectrum systemic antibiotic therapy aimed at gram-positive organisms for up to 2 weeks

Denominator: number of people with a venous or mixed venous/arterial leg ulcer and a local infection identified within the past 2 weeks
Numerator: number of people in the denominator who receive oral narrow-spectrum systemic antibiotic therapy aimed at gram-positive organisms for up to 2 weeks
Data source: local data collection

Sources

- Australian Wound Management Association, New Zealand Wound Care Society, 2011
- Registered Nurses’ Association of Ontario, 2007
- Wound Ostomy and Continence Nurses Society, 2011
Quality Statement 9: Deep/Surrounding Tissue Infection or Systemic Infection Management

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

Background

All wounds contain bacterial flora, and wounds that are not healing may be infected, but prophylactic antibiotic treatment of leg ulcers or antimicrobial treatment without clinical evidence of infection is not warranted.\(^1\) Overuse and inappropriate use of antibiotics may contribute to the development of antibiotic-resistant bacteria.\(^2\) 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.\(^3\) Pain is also a sign of deep infection. Treatments for infection include antimicrobial and non-antimicrobial (debridement) interventions.

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.

What This Quality Statement Means

For Patients
If your wound is infected, you should have treatment with antibiotics.

For Clinicians
Carry out an urgent assessment and provide systemic antimicrobial treatment for people with a venous or mixed venous/arterial leg ulcer and suspected deep/surrounding tissue infection or systemic infection. Choice of antimicrobial treatment should be based on clinical assessment and may be guided by properly conducted bacterial culture techniques.

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

Quality Indicators

Process Indicators

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

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

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

**Sources**

- Registered Nurses’ Association of Ontario, 2007
- Wound Ostomy and Continence Nurses Society, 2011
Quality Statement 10: Wound Moisture Management

People with a venous or mixed venous/arterial 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 and selection of a dressing that promotes a moist wound healing environment. Cleansing the wound promotes healing by improved wound assessment, increased comfort when adherent dressings are removed, and possible rehydration of the wound.7 There are many options for wound cleansers and 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.5,7

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)
- Moisture reduction for maintenance ulcers (ulcers that have healing potential, but barriers are present that may compromise healing, such as lack of access to appropriate treatments and poor adherence to treatment) or nonhealing ulcers (ulcers that are not likely to heal because of irreversible causes or illnesses, such as critical ischemia or a nontreatable malignancy)7

What This Quality Statement Means

For Patients
To help your wound heal, you should have a dressing that keeps the wound moist.

For Clinicians
For people with a venous or mixed venous/arterial 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 nonhealing 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.
Quality Indicators

Process Indicators

Percentage of people with a healable venous or mixed venous/arterial leg ulcer who receive wound care that maintains the appropriate moisture balance in the wound bed

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

Percentage of people with a maintenance or nonhealing venous or mixed venous/arterial leg ulcer who receive wound care that maintains the appropriate moisture reduction in the wound bed

- Denominator: number of people with a maintenance or nonhealing venous or mixed venous/arterial 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

Sources

- Australian Wound Management Association, New Zealand Wound Care Society, 2011
- Registered Nurses’ Association of Ontario, 2007
- Wound Ostomy and Continence Nurses Society, 2011
Quality Statement 11: Treatment with Pentoxifylline

People with venous leg ulcers are offered pentoxifylline in combination with compression therapy, unless contraindicated.

Background

Pentoxifylline increases blood circulation and the amount of oxygen delivered by the blood to the muscles.\(^4\) 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.\(^4\)

Definitions Used Within This Quality Statement

Contraindicated

Pentoxifylline is not recommended for people with:

- 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 xanthises, such as caffeine, theophylline, and theobromine
- Peptic ulcers (or a recent history of peptic ulcers)

What This Quality Statement Means

For Patients

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 still have compression therapy while you take this medication.

For Clinicians

Offer pentoxifylline to people with a venous leg ulcer, in combination with compression therapy, unless it is contraindicated.

For Health Services

Ensure access to pentoxifylline for people with a venous leg ulcer.

Quality Indicators

Process Indicator

Percentage of people with a venous leg ulcer who are offered pentoxifylline, unless contraindicated

- Denominator: number of people with a venous leg ulcer and no contraindications to pentoxifylline treatment
- Numerator: number of people in the denominator who are offered pentoxifylline
- Data source: local data collection
Sources

- Australian Wound Management Association, New Zealand Wound Care Society, 2011
- Wound Ostomy and Continence Nurses Society, 2011
Quality Statement 12: Referral to Specialist

People with a venous or mixed venous/arterial 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 should be initiated 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 >1.2; contact dermatitis; cellulitis; venous thromboembolism; variceal bleeds; ulcers that have not healed within 3 months; recurring ulceration; healed ulcers with a view to venous surgery; antibiotic-resistant infected ulcers; ulcers causing uncontrolled pain.1,4

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 adherent or loose slough, granulation tissue, and may have undermining or tunnelling
- 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
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.

What This Quality Statement Means

For Patients
If you have a leg ulcer that is unusual or not healing as quickly as it should, you should be referred to a specialist for further assessment and treatment.

For Clinicians
Refer people with a venous or mixed venous/arterial 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 or mixed venous/arterial 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 or mixed venous/arterial 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 or mixed venous/arterial 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

Sources

- Australian Wound Management Association, New Zealand Wound Care Society, 2011
- Wound Ostomy and Continence Nurses Society, 2011
Quality Statement 13: Health Care Provider Training and Education

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

Background

People who have developed or are at risk of developing venous or mixed venous/arterial leg ulcers benefit from individualized care by providers with specific, comprehensive training and education in the appropriate assessment and management of these types of wounds. Training and education materials or programs should be tailored to providers’ roles and responsibilities.

Definitions Used Within This Quality Statement

Risk factors

People are at a higher risk of developing a venous leg ulcer if they:

- Are over 60 years old
- Have venous hypertension caused by venous insufficiency
- Have superficial and deep vein incompetence
- Have varicose veins
- Have a history of venous thromboembolism
- Have congenital vein abnormalities
- Have had multiple pregnancies

Provider training and education

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

- Comprehensive assessment
- Ankle-brachial pressure index testing
- Compression therapy (proper application and monitoring)
- Local wound care
- Criteria for specialist referral
- Prevention of recurrence

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 developed or are at risk of developing a venous or mixed venous/arterial leg ulcer.

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 or mixed venous/arterial 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 or mixed venous/arterial leg ulcer have training and education in how to carry out comprehensive assessments and provide appropriate treatment, including compression therapy and local wound care.

**Quality Indicators**

**Structural Indicator**

**Local availability of providers with access to training and education in the assessment and management of venous or mixed venous/arterial leg ulcers**

- Data source: Regional and/or provincial data collection would need to be developed

**Sources**

- Australian Wound Management Association, New Zealand Wound Care Society, 2011
- Registered Nurses’ Association of Ontario, 2007

Draft—do not cite. Report is a work in progress and could change following public consultation.
Quality Statement 14: Transitions in Care

People with a venous or mixed venous/arterial leg ulcer who transition between care settings have a team or provider who is accountable for coordination and communication related to their care.

Background

Transitions in care involve changes in providers or locations (within and between care settings) and can increase the risk of errors and miscommunication related to a person’s care. To support safe and effective coordination and continuity of care, transition planning should be a collaborative process that involves the person with the venous or mixed venous/arterial leg ulcer, their family, and their caregiver(s), so that their unique needs and preferences are supported. 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.

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 or mixed venous/arterial 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.

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 or mixed venous/arterial leg ulcer.

Quality Indicators

Process Indicators

Percentage of people with a venous or mixed venous/arterial leg ulcer who transition between care settings and have a team or provider who is accountable for coordination and communication related to their care.
- Denominator: number of people with a venous or mixed venous/arterial 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 related to their care
- Data source: local data collection

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

- Denominator: number of people with a venous or mixed venous/arterial leg ulcer who transition between care settings and answer the question, “During your most recent visit, did this 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 or mixed venous/arterial leg ulcer who transition between care settings and report that there was good communication about their care between their care providers**

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

**Source**

- Advisory committee consensus
Acknowledgements

Advisory Committee

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References


