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*Non-Invasive Arterial Assessment of patients with lower extremity wounds or ulcers  
for determination of healing potential at the initial visit*

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## **USWR 30**

### **MEASURE DESCRIPTION:**

Percentage of patients aged 18 years or older with a non-healing lower extremity wound or ulcer that undergo a non-invasive arterial assessment at the initial visit for the wound or ulcer, once in a 12-month period.

### **DENOMINATOR:**

All patients with lower extremity ulcerations (e.g., DFU, VLU and pressure ulcers of the lower extremity), and all chronic wounds of the lower extremity (e.g., traumatic wounds and non-healing surgical wounds) that have been non-healing for >30 days.

### **NUMERATOR:**

All patients with lower extremity ulcerations in the denominator that underwent a non-invasive baseline vascular assessment by the practitioner, at the initial visit for the wound or ulcer, at least once in a 12-month period.

### **DENOMINATOR EXCLUSIONS:**

Palliative care patients, patients with only 1 visit during the reporting period

### **DENOMINATOR EXCEPTIONS:**

Arterial assessment not performed for Medical, Patient or System Reasons

### **NUMERATOR EXCLUSIONS:**

None

### **HIGH PRIORITY MEASURE:**

No

### **MEASURE TYPE:**

Intermediate Outcome

### **NQS DOMAIN:**

Effective Clinical Care

### **CARE SETTING:**

Ambulatory, Ambulatory Care: Clinician Office/Clinic, Ambulatory Care: Hospital, Ambulatory Surgical Center, Hospital Outpatient, Nursing Home, Office Based Surgery Center, Outpatient Services, Rehabilitation Facility

### **SPECIALTIES:**

Podiatry, Other, Cardiology, Emergency Medicine, Family Medicine, Internal Medicine, Interventional Cardiology, Interventional Radiology, Physical Medicine & Rehabilitation, Physical Therapy/Occupational Therapy, Plastic & Reconstructive Surgery, Primary Care, Vascular Surgery, Wound Care

### **PREFERRED MEASURE PUBLISHED CLINICAL CATEGORY:**

Wound Care, Vascular

**INCLUDES TELEHEALTH:**

No

**MEANINGFUL MEASURE AREA:**

Management of Chronic Conditions

**MEANINGFUL MEASURE AREA RATIONALE:**

The chronic conditions that contribute to lower extremity ulceration also increase the likelihood of peripheral arterial disease (e.g., diabetes, heart disease, advanced age, etc.). Arterial assessment has tended to focus on the heart but peripheral arterial disease is a major cause of limb loss, particularly among diabetics, and is a common contributory factor in the etiology and healing potential of any leg ulcer. Arterial assessment is an integral part of chronic disease management for many chronic conditions.

**MEASURE CALCULATION TYPE:**

Proportional Measure

**NUMBER OF PERFORMANCE RATES:**

1

**INDICATE OVERALL PERFORMANCE RATE:**

1st Performance Rate

**RISK ADJUSTED STATUS:**

No

**CLINICIAN TESTED QCDR MEASURE:**

Yes

**CLINICAL RECOMMENDATION STATEMENT:**

Guideline Statement: Joint guidelines of the Society for Vascular Surgery, European Society for Vascular Surgery, and World Federation of Vascular Societies recommend non-invasive screening in patients with lower extremity ulcerations. The SVS and APMA guidelines recommend that patients with a DFU have perfusion assessed (by ABI, ankle and pedal Doppler arterial waveforms, toe systolic pressure or transcutaneous oxygen pressure (TcPo2)) annually (Grade 1B evidence). The Wound Healing Society (WHS) recommends that all patients with lower extremity ulcers be assessed for adequate perfusion. The American Diabetes Association recommends that all people with diabetes and a foot wound should have pedal perfusion assessed by ABI and either toe pressure or transcutaneous oximetry (TcPO2). The Global vascular guidelines on the management of chronic limb-threatening ischemia (jvascsurg.org) of 2019 emphasize that in patients with lower extremity ulcerations, objective hemodynamic testing must be performed.

**MEASURE PERFORMANCE DATA:**

In 2020, clinician performance ranged from 0% to 100% with an average of 57.6% for practitioners that submitted data to CMS 44.6% among clinicians who did not submit quality data, suggesting that QCDR participation improves the performance of arterial screening.

**QCDR MEASURE RATIONALE:**

Failure to identify ischemia is believed to be the most common reason for limb loss among patients with chronic lower extremity ulcers (see clinical guideline statements) and failure to identify ischemia is a

common reason for failure to heal a wound but in 2010 USWR data indicate that fewer than 10% of patients with chronic non-healing leg ulcers underwent any type of vascular assessment, even at hospital based outpatient wound centers where some technology to perform this assessment is universally available.

#### STUDY CITATION:

In 2010 data from the USWR indicated that fewer than 10% of patients with chronic non-healing leg ulcers underwent any type of vascular assessment (ABI, transcutaneous oximetry, or skin perfusion pressure) even at hospital-based outpatient wound centers. Although arterial screening performance has improved since this measure was developed in 2015 (and in part thanks to this measure), there is still a significant gap on a measure that represents a standard of care endorsed by every relevant society and organization.

Fife CE, Carter MJ, Walker D. Why is It So Hard to Do the Right Thing in Wound Care?" Wound Rep Reg. 18: 154–158, 2010.

#### QCDR NOTES:

1. "Use objective hemodynamic tests to determine the presence and to quantify the severity of ischemia in all patients with suspected CLTI." Global vascular guidelines on the management of chronic limb-threatening ischemia Michael S. Conte, MD (Co-Editor),<sup>a</sup> Andrew W. Bradbury, MD (Co-Editor),<sup>b</sup> Philippe Kolh, MD (Co-Editor),<sup>c</sup> John V. White, MD (Steering Committee),<sup>d</sup> Florian Dick, MD (Steering Committee),<sup>e</sup> Robert Fitridge, MBBS (Steering Committee),<sup>f</sup> Joseph L. Mills, MD (Steering Committee),<sup>g</sup> Jean-Baptiste Ricco, MD (Steering Committee),<sup>h</sup> Kalkunte R. Suresh, MD (Steering Committee),<sup>i</sup> M. Hassan Murad, MD, MPH,<sup>j</sup> and the GVG Writing Group,\* San Francisco, Calif; Birmingham, United Kingdom; Wallonia, Belgium; Niles, Ill; St. Gallen, Switzerland; Adelaide, South Australia; Houston, Tex; Poitiers, France; Bangalore, India; and Rochester, Minn Joint guidelines of the Society for Vascular Surgery, European Society for Vascular Surgery, and World Federation of Vascular Societies.
2. "The resting ABI should be used to establish the lower extremity PAD diagnosis in patients with suspected lower extremity PAD, defined as individuals with exertional leg symptoms, with nonhealing wounds, who are 70 years and older or who are 50 years and older with a history of smoking or diabetes. Individuals with asymptomatic lower extremity PAD should be identified by examination and/or measurement of the ankle-brachial index (ABI) so that therapeutic interventions known to diminish their increased risk of myocardial infarction (MI), stroke, and death may be offered. (ACC/AHA Guidelines)" Verbatim from Peter Sheehan, MD Commentary in Clinical Diabetes-Volume 22, Number 4, 2004:" Peripheral Arterial Disease in People With Diabetes: Consensus Statement Recommends Screening"
3. "The consensus development panel for this statement was charged with addressing four issues around peripheral artery disease (PAD) and diabetes: 1) the epidemiology and impact, 2) the biology, 3) patient evaluation, and 4) best treatments. The consensus panel worked from an underlying assumption that PAD in people with diabetes is different from the vascular disease from other risk factors in its biology, in its clinical presentation, and in its management. As far as the prevalence and impact, diabetes is the most powerful risk factor for PAD. Among those with diabetes, age, duration of diabetes, and the presence of neuropathy are particularly important as risk factors for the development of PAD. With diabetes, there is usually a unique involvement of the tibial vessels below the knee. Because of the pattern of involvement distally, the majority of patients lack classic symptoms, such as claudication. In addition, there is an almost invariable association with neuropathy with blunted pain perception. Patients are therefore likely to experience more subtle symptoms than with classic claudication, for example, fatigue or poor

functioning. A more devastating consequence of neuropathy is that PAD patients with diabetes present late, having already developed limb-threatening ischemia with tissue loss, gangrene, or rest pain. This unfortunate progression lends urgency to the task of uncovering PAD in asymptomatic individuals in order to prevent amputation. Beyond the threat to the limb, these patients face enormous cardiovascular and cerebrovascular risk. Over 5 years, 20% of PAD patients will sustain nonfatal myocardial infarction or stroke, and 30% will die, largely from cardiovascular disease.(1) For those with critical limb ischemia, the prognosis is worse: 30% will have amputations, and 20% will die within 6 months.(2) While the exact risk increment among diabetic patients with PAD is unknown, prospective cardiovascular clinical trial data assure us that patients with diabetes fare worse than their nondiabetic counterparts. The true prevalence of PAD in individuals with diabetes has been difficult to determine because of the lack of symptoms and insensitive means of diagnosis. The ankle brachial index (ABI) has a high sensitivity and specificity for angiographically proven disease. Diagnosing PAD through ABI, the prevalence in individuals with diabetes > 40 years of age was 20%.(3) That figure is higher than would be anticipated using only symptoms and absent pulses. In PAD patients > 50 years of age, the diabetes prevalence was 29%, again higher than anticipated.(4) The unexpected high prevalence of PAD in the population with diabetes in a sense makes PAD a new public health issue.” Elhadd TA, Robb R, Jung RT, Stonebridge PA, Belch JJF: Pilot study of prevalence of asymptomatic peripheral arterial occlusive disease in patients with diabetes attending a hospital clinic. *Pract Diabetes Int* 16:163–166, 1999

4. Peripheral arterial occlusive disease (PAOD) affects approximately 10 million people in the United States and is highly associated with significant morbidity and mortality. Because of its high prevalence and associated co-morbidities, there must be an effort to detect arterial disease in patients with wounds and to select appropriate therapy when arterial insufficiency is identified as a significant or primary etiology for an ulcer. Arterial insufficiency frequently contributes to poor healing in ulcers with another primary etiology such as diabetic neuropathy or venous insufficiency. All patients with lower extremity ulcers should be assessed for arterial disease. (Level 1A evidence) (Wound Healing Society 2007). Available at: <http://www3.interscience.wiley.com/cgi-bin/fulltext/118605281/HTMLSTART>
5. In diabetic foot ulcers, arterial perfusion is a vital component for healing and must be assessed in the ulcerated patient, since impaired circulation contributes significantly to nonhealing of ulcers and subsequent risk for amputation. Early evaluation and referral are important. The initial evaluation of the diabetic foot ulcer must be comprehensive and systematic to ascertain the parameters that might have led to its onset as well as determine the presence of factors that can impair wound healing. Critical in this regard are assessments for vascular perfusion (ischemia). Noninvasive arterial studies (NIAS) should be performed to determine lower extremity perfusion. Such studies may include Doppler segmental arterial pressures and waveform analysis, ankle-brachial indices (ABI), toe blood pressures, and TcPO<sub>2</sub>. American College of Foot and Ankle Surgeons - Medical Specialty Society. 2000 Sep (revised 2006 Sep). Available at “Guidelines.gov”: <http://www.guideline.gov/search/searchresults.aspx?Type=3&txtSearch=diabetic+foot+ulcers&num=20>
6. The management of diabetic foot: A clinical practice guideline by the Society for Vascular Surgery in collaboration with the American Podiatric Medical Association and the Society for Vascular Medicine. Hingorani, et al. February 2016, Volume 63, Issue 2, Supplement, Pages 3S–21S DOI: <http://dx.doi.org/10.1016/j.jvs.2015.10.003>
7. Hirsch AT, Criqui MH, Treat-Jacobson D, Regensteiner JG, Creager MA, Olin JW, Krook SH, Hunninghake DB, Comerota AJ, Walsh ME, McDermott MM, Hiatt WR: Peripheral arterial disease

detection, awareness, and treatment in primary care. JAMA 286:1317–1324, 2001 8. Weitz JI, Byrne J, Clagett GP, Farkouh ME, Porter JM, Sackett DL, Strandness DE Jr., Taylor LM: Diagnosis and treatment of chronic arterial insufficiency of the lower extremities: a critical review. Circulation 94:3026–3049, 1996 9. Dormandy JA, Rutherford RB: Management of peripheral arterial disease (PAD). TransAtlantic Inter-Society Consensus. J Vasc Surg 31(1 Pt. 2):S1–S296, 2000.