Objective Measurement of Wound Surface Area With AI-Based Imaging

MEASURE ID: USWR37

MEASURE DESCRIPTION:
Percentage of chronic wound/ulcer treatment visits in which wound surface area is measured objectively with an AI-based imaging tool, allowing for an objective evaluation of surface area reduction over time.

DENOMINATOR:
All wound care encounters during the measurement period regardless of wound etiology during the measurement period

NUMERATOR:
All chronic wounds/ulcer treatment visits in which measurements are recorded using an AI-based imaging tool which can provide objective measurements.

DENOMINATOR EXCLUSIONS:
Digital imaging not feasible due to lack of access to the wound bed (e.g., the wound bed is not accessible due to anatomical location, the wound bed is obscured by a non-removable device or treatment), there is an infection control issue so that the camera cannot be used, the camera is malfunctioning and cannot acquire an image, or imaging is refused by the patient.

DENOMINATOR EXCEPTIONS:
None

NUMERATOR EXCLUSIONS:
None

HIGH PRIORITY MEASURE:
No

MEASURE TYPE:
Process

SUBMISSION PATHWAY (MIPS REPORTING OPTION):
Traditional MIPS

INCLUDES TELEHEALTH:
No

CARE SETTING:
All Settings

APPLICABLE SPECIALTIES:
All specialties

PUBLISHED CLINICAL CATEGORY:

Chronic Skin Conditions; Foot/Ankle Care; Hyperbaric Medicine; Orthopedics; Physical Medicine; Physical Therapy/Occupational Therapy; Podiatry; Pressure Ulcers; Vascular; Wound Care

MEASURE CALCULATION TYPE/INDICATOR:
Proportional Measure

NUMBER OF PERFORMANCE RATES:
1

INDICATE OVERALL PERFORMANCE RATE:
1st Performance Rate

RISK ADJUSTED STATUS:
No

TRADITIONAL OR INVERSE MEASURE:
Traditional

CLINICIAN TESTED QCDR MEASURE:
Yes

CLINICAL RECOMMENDATION STATEMENT:
Accurate and reproducible wound measurement is essential for tracking healing progress and guiding evidence-based treatment decisions. AI-enabled planimetry tools provide standardized surface area assessments that improve documentation consistency, reduce measurement error, and support timely, appropriate changes in care.

QCDR MEASURE RATIONALE:
The AI-enabled measure of wound surface area promotes reliable and reproducible tracking of wound progress, regardless of wound type. Many AI-enabled tools are currently available (Korzendorfer 2025) and adoption by clinicians is increasing, with good patient acceptance (Wang, et al. 2017). Wound surface area reduction over time is predictive of wound outcome and is often used as a clinical decision threshold (Smart et al., 2024). However, manual length-by-width estimations using paper rulers is prone to substantial size overestimation and variability (Alonso et al., 2023; Rogers, 2010), limiting the clinician's ability to assess wound progress and the impact of therapeutic interventions and perhaps contributing to the current problem of inaccurate reporting of wound outcome (Fife 2018). AI-enabled planimetry is well established to be accurate, reproducible, and reliable for measuring surface area (Korzendorfer et al., 2025; Casanova-Lozano et al., 2024; Carter et al., 2020; Wang et al., 2017). Rapid, ongoing advances in this field will soon enable accurate wound volume measurement as well as objective tissue type analysis (Reifs et al, 2023). The availability of this quality measure may accelerate adoption of much needed objective wound measurements.

STUDY CITATION:

- Korzendorfer, H., Dotson, P., James, F., Cole, W., & Oropallo, A. R. (2025). An Overview and Survey of US Food and Drug Administration–Registered Wound Imaging Devices Capable of Determining Percentage Area Reduction and/or Percentage Volume Reduction. Wounds, 37(5), 210–219.
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- Fife, C. E., Eckert, K. A., & Carter, M. J. (2018). Publicly Reported Wound Healing Rates: The Fantasy and the Reality. Advances in Wound Care, 7(3), 77–94. https://doi.org/10.1089/wound.2017.0743
- Casanova-Lozano, L., Reifs-Jiménez, D., Martí-Ejarque, M., Reig-Bolaño, R., & Grau-Carrión, S. (2024). Evaluation of Two Digital Wound Area Measurement Methods Using a Non-Randomized, Single-Center, Controlled Clinical Trial. Electronics, 13(12), 2390. https://doi.org/10.3390/electronics13122390
- Carter MJ, et al. “Automated wound measurement improves objectivity and reproducibility.” Int Wound J, 2020.
- Rogers, L. C., Bevilacqua, N. J., Armstrong, D. G., & Andros, G. (2010). Digital Planimetry Results in More Accurate Wound Measurements: A Comparison to Standard Ruler Measurements. Journal of Diabetes Science and Technology, 4(4), 799–802. https://doi.org/10.1177/193229681000400405
- Smart, H., Sibbald, R. G., Goodman, L., Ayello, E. A., Jaimangal, R., Gregory, J. H., Akita, S., Alavi, A., Armstrong, D. G., Arputhanathan, H., Bruwer, F., Caul, J., Chan, B., Cronje, F., Dofitas, B., Hamed, J., Harley, C., Heil, J., Hill, M., … Zacharias, R. (2024). Wound Bed Preparation 2024: Delphi Consensus on Foot Ulcer Management in Resource-Limited Settings. Advances in Skin & Wound Care, 37(4), 180–196. https://doi.org/10.1097/ASW.0000000000000120
- Reifs, D., Casanova-Lozano, L., Reig-Bolaño, R., & Grau-Carrion, S. (2023). Clinical validation of computer vision and artificial intelligence algorithms for wound measurement and tissue classification in wound care. Informatics in Medicine Unlocked, 101185. https://doi.org/10.1016/j.imu.2023.101185