

Introduction.

- Accurate measurement and tracking of wound size over time is important to evaluate wound healing.¹
- Standard clinical practice uses a paper ruler to measure the length and width of a wound; however, this approach is known to greatly overestimate wound area and often results in inconsistent measurements between users.^{2,3}
- Digital wound measurement applications accurately measure and track wound size and reduce the variability in measurements across users.
- This application uses stereographic imaging to eliminate any need for calibration stickers and patient contact, which is an advantage over other technologies.

Objective: to validate the accuracy and reproducibility of a digital measurement application on the MolecuLightDX™ wound imaging device, which also facilities detection of regions with high bacterial loads.

Methods.

MolecuLightDX device with digital wound measurement software was used to measure wounds in a 2-part statistically powered experimental design:

Part 1: Benchtop wound models

- 17 wound models measured in triplicate by 5 users
- Auto and manual trace modes validated
- Paper wound models placed onto flat, slanted, and convex surfaces to simulate anatomical locations & positions of wounds typically imaged in a clinical setting

Part 2: Real clinical wounds

- 17 clinical wounds measured in triplicate by 5 users
- Auto and manual trace modes validated
- Measured real wound images previously captured at clinical sites

Calculations

- Number of users, models, replicates were prospectively powered to validate accuracy above 95% and variation less than 10%
- Calculated coefficient of variation (CV) for intra- and inter-user repeatability using a multivariate regression model
- Measurement accuracy (%) calculated for wound models only

