

# Impact of Digital Wound Technology on Time to Heal Pressure Injuries in Home Health

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## Introduction

- Pressure Injuries (PI) are significant health problems defined as injuries to the skin and underlying tissue mainly caused by prolonged pressure on the skin.<sup>1</sup>
- PIs range from closed to open wounds and are classified into a series of four stages based on the depth of the wound.
- PI, in many cases, is a preventable condition and acts as an indicator of the quality of nursing care in health facilities.<sup>2</sup>
- In nursing homes & long-term care facilities, PI prevalence ranges from 9.6% and 25%, and incidence ranges from 0% to 5.4%.<sup>1,2</sup>
- Currently, PI healing time is underreported, with no standardized expectations for healing or treatment time.<sup>1</sup>
- Digital wound tools provide a model for practice improvement where artificial intelligence enables standardized wound assessment that accurately measures wounds, collects objective clinical data and identifies at-risk patients. It also allows ongoing tracking of healing factors necessary to optimize management plans and the cost of care.

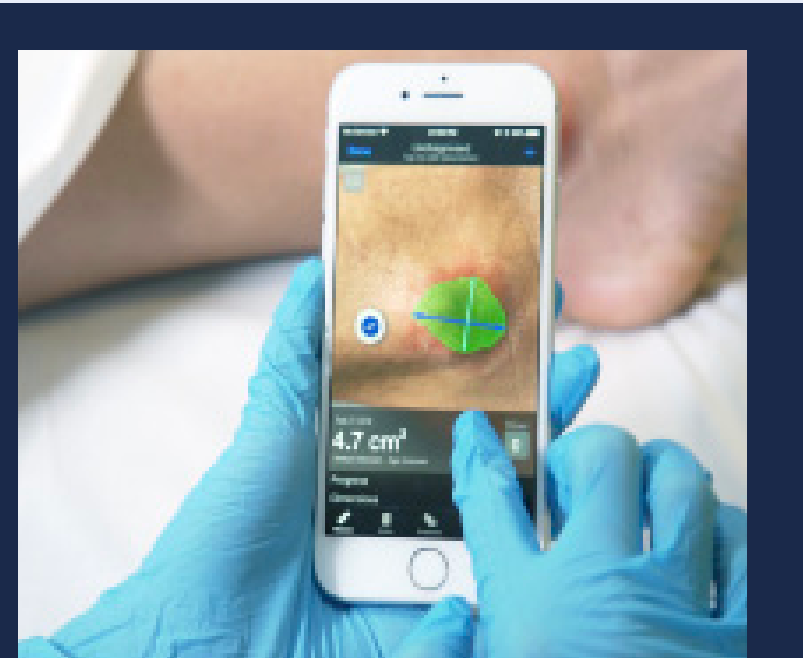
## Objective

Leveraging a large, clinically-calibrated wound database, this study aimed to understand the PI time to heal by stage in home health agencies (HHAs) and evaluate the relationship between the initial size of PI area and average days to heal.

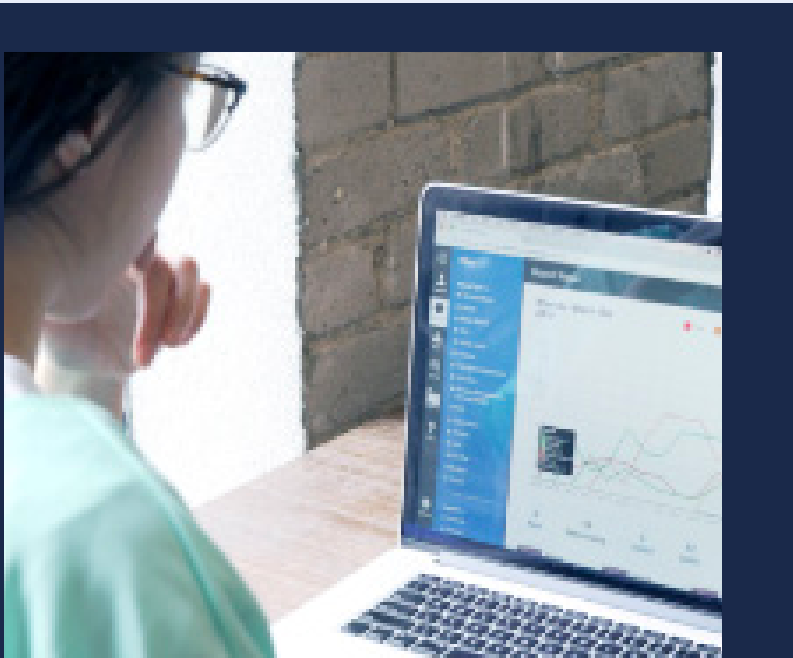
## Methodology



HEALX



CLINICIAN APP



DASHBOARDS

- A retrospective study used a subset of anonymous clinical data from a digital wound care technology provider's database, using PI assessed between Jan-July 31, 2022.
- Data was collected from 48 large, small, urban and rural HHAs across the US.
- Evaluations were for PI patients 18 years and older at any body location.
- Evaluations were performed in the residential facility, or at home, according to the clinical pathway of the patient, by experienced clinicians using the digital technology.
- Only PI less than 365 days from initiating the first wound evaluation were included in the analysis.
- PI was considered healed when area measurements recorded 0 and tissue was completely re-epithelialized.

## Results

### Median Time to Heal Pressure Injury by Stage

Average days to heal PI Mean ± SD				
STAGE 1	STAGE 2	STAGE 3	STAGE 4	UNSTAGEABLE
13 ± 24.5	26 ± 33.2	46 ± 46.7	56 ± 90.5	27 ± 37.9

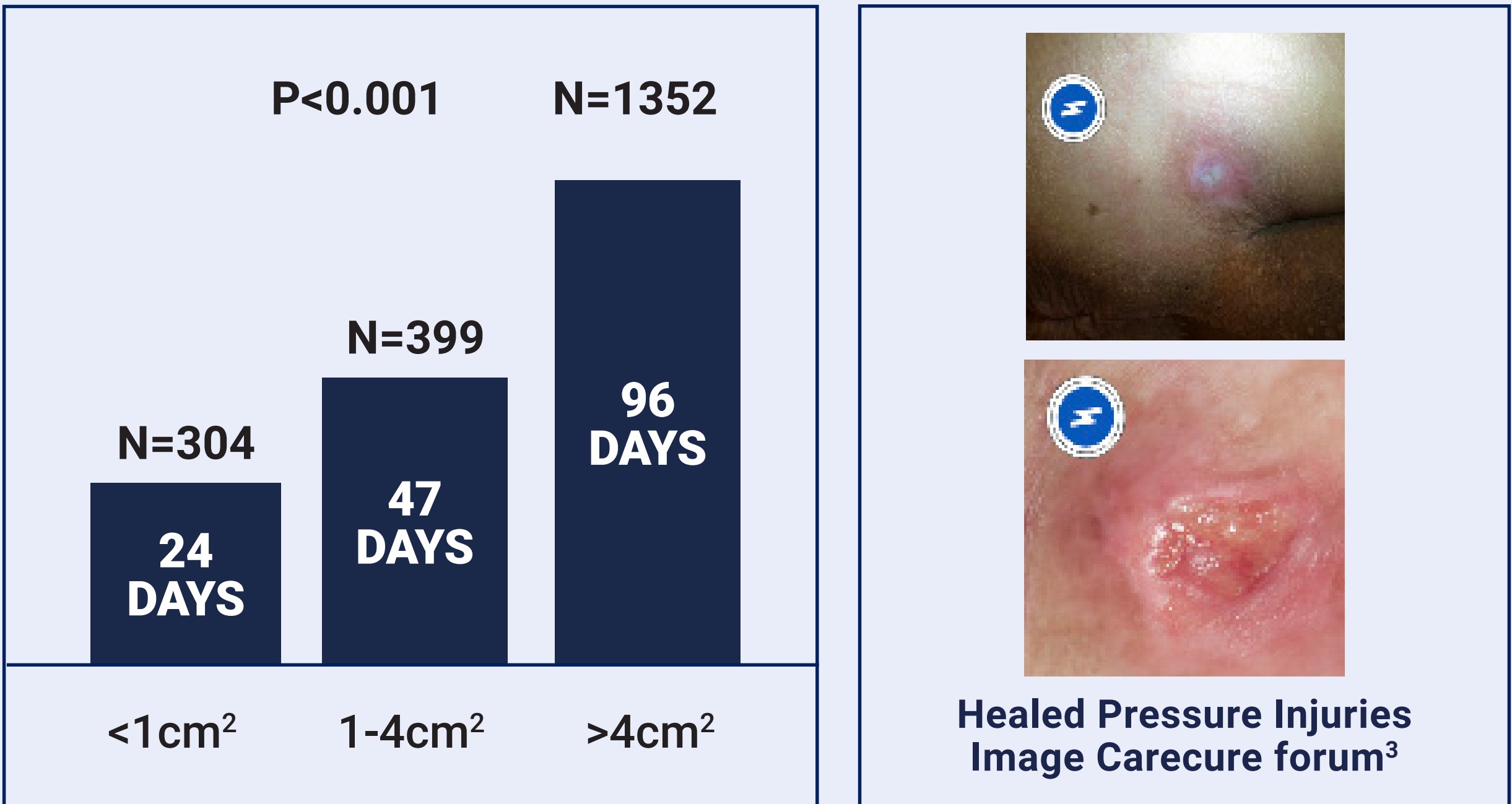
- Overall, 27.5%(N=2055) of PI healed during the study with a median time of 28 days.
- About 55% of (stage 2) healed and the average time to heal was 26 days.
- 19% of patients with PI (stage 3) were healed in the year, with an average healing time of one month and a half.

### Median Time to Heal Pressure Injury (Stage 2) by Area Size

PIs, stage 2 with a surface area of <1cm<sup>2</sup> was significantly associated with the likelihood of faster healing with a median of 11 days (95% CI, 8.5-11.7 days) compared to those with 1-4 cm<sup>2</sup> and >4 cm<sup>2</sup>, which recorded 21 (95%CI, 18.7- 25.3) and 25 (95% CI, 22.6- 27.4) median days to heal, respectively ( P<0.001).



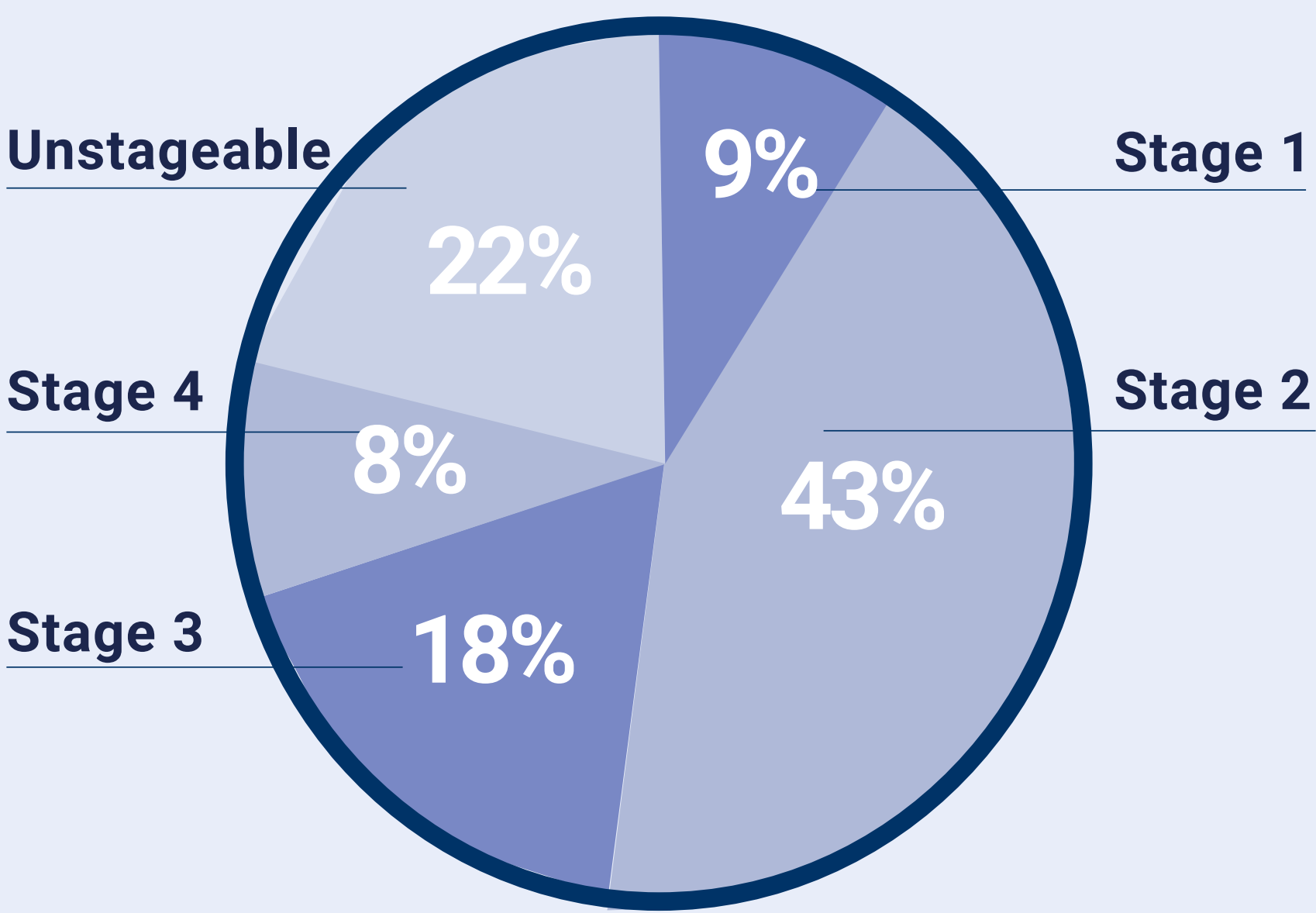
### Median Time to Heal Pressure Injury (All Stages) by Area Size



Survival functions for time to heal were compared for PI by the initial area size. Kaplan-Meier survival results showed that PIs with an initial surface area size >4cm<sup>2</sup> had a median time to heal of 95.5 days (95% CI, 81.4-96.5 days). This was significantly longer than the PIs with an initial area size of <1 cm<sup>2</sup> and 1-4 cm<sup>2</sup>, which had lower median time to heal of 35 days (95% CI, 31.2-45.7) and 47 days (95% CI, 40.8-53.1), respectively (P<0.001).

A total of 7,460 PI wounds were included, of which 21% were developed after admission. 53.0% of patients were females. The mean age was 72 years.

### Descriptive Statistics of Stages of Pressure Injury



Most (stage 2) PI lesions were located either in the buttocks (24%), coccyx ( 21%), and sacrum (16%).

Of the Acquired inhouse PI, 10% were (stage 1), 56% were (stage 2), 19% were (stage 3), 2% were (stage 4) and 13% were unstageable.

## Discussion

- Overall, PIs with initial smaller size lesions were associated with shorter healing time.
- PI patients managed with the digital wound care solution experience faster wound healing than expected based on the available medical literature.
- Bergstrom et al., 2008,<sup>4</sup> reported that the median healing time was 33 days for small lesions <1cm<sup>2</sup>, 53 days for medium-sized lesions 1-4 cm<sup>2</sup>, and 73 days for large injuries > 4 cm<sup>2</sup>.
- Therefore, with the digital tool, the median days to heal PI stage 2 lesions with a surface area less than 1cm<sup>2</sup> was 67% faster, for 1-4 cm<sup>2</sup> was 60% faster and 66% faster for larger lesions.
- Faster healing of PI can reduce patients' pain and suffering and save healthcare facilities millions of dollars.<sup>5</sup>

**Adopting digital wound care technology that supports the accurate assessment, proper staging, and documentation of wounds improves the quality of care and optimizes wound healing.**

## References

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