# Enhancing Home Health Performance: Clinical and Operational Impacts of Digital Wound Care Technology at Home Health

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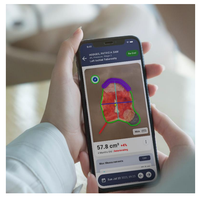
## Introduction

- As the healthcare system continues to shift more towards community-based care, home health (HH) plays a growing role in wound management.[1]
- HH provides skilled nursing (SN) visits, enabling at-home care and reducing the costly hospital visits.[2]
- HH organizations face considerable financial and operational challenges, especially with the Medicare's 30-day reimbursement limits.[3]
- The emerging AI-driven wound care technologies (AI-WCT) within practice can bridge the gaps of workforce capacity and care coordination by enhancing wound management and operational efficiency. [4]



## Objective

- To examine the impact of integrating AI-WCT into a comprehensive wound care program within an enterprise home health organization, assessing clinical outcomes, operational efficiency, and cost savings.

## Methodology

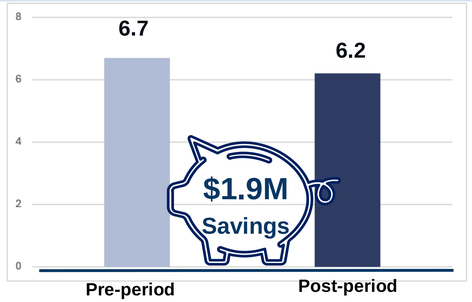
- **Study Design:** A one-group pretest-posttest quasi-experimental design assessed the impact of integrating Swift Skin and Wound into clinical practice at a large US HH organization.
- **Data Collection**: Data was gathered from Homecare Homebase database from March–October 2022 (pre-adoption) and March–October 2023 (post-adoption) across 11 HH branches.
- **Inclusion Criteria:** patients (≥18 years) with wound-related diagnoses recorded in the EMR during the study period. Post-adoption wounds had to be assessed using AI-WCT at participating branches.
- **Sample:** In 2022, pre-adoption, participating branches provided care for 19,252 patients (25,570 wound care episodes) and 16,276 patients (22,193 wound care episodes) in 2023, post-adoption.
- **Outcomes:** The study assessed clinical and operational efficiencies

| SN VPE | Staff Optimization | Healing Time | Hospitalization Rate |
|---|---|---|---|
| Average SN visits per 60-day episode | RN and LPN role shifts over time. | Average days to heal a wound | Hospitalized due to wound complications |

The study also evaluated financial impact by quantifying savings from reduced SN visits, improved staff efficiency, and lower hospitalization rates post adoption.

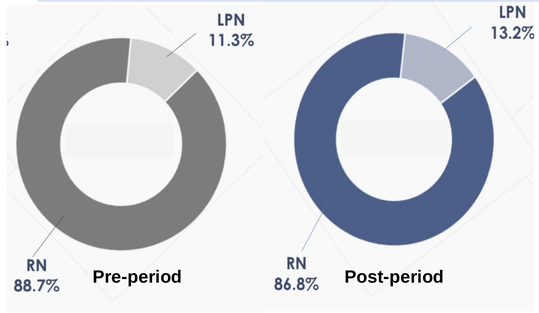
## Results

### Average Number of Skilled Nursing Visits per 60-day episode




AI-WCT adoption reduced SN VPE by 7.5% (6.7 to 6.2; (P <0.001), marking a significant shift in care delivery.

### Optimizing Staff Roles: Shifts in Provider Allocation

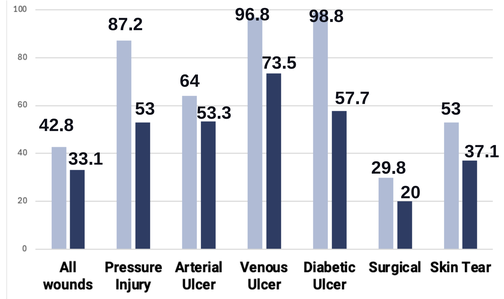



**1.9%** Shift in roles

**3,905** Additional Visits

Would have been handled by RNs without this shift.

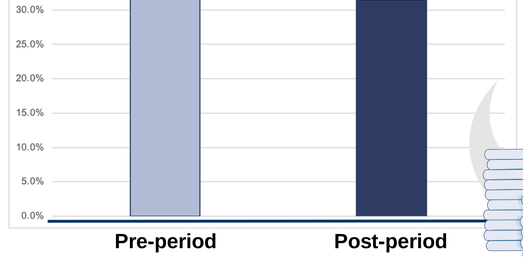
### Reduction in Average Days to Heal a Wound




**23%** Faster Healing

A 23% improvement in wound healing was observed post-adoption for all wound types, reducing time to heal by 9.7 days (1.4 weeks).

### Reduction in 60-days Wound Related Hospitalization





Total overall hospitalizations (including other non-wound related causes) rose 8.4%, but 60-day wound-related hospitalizations dropped 2.8%

## Discussion

- The 7.5% reduction in SN visits per 60-day episode highlights AI's ability to streamline workflow efficiency, reducing visit frequency while optimizing wound care resource allocation. Without the VPE reduction, the 11 branches would have required 11,540 more SN visits. At $139.76 per visit,[5] this decline translates to $1.95M in annual savings after tech costs.
- AI-WCT-driven role in redistribution of clinicians' roles could reduce costs. Without this shift, 3,905 additional visits by RNs ($78 per visit) [6] would have cost $304,619 annually. Instead, LPNs handled these visits at $48 each,[7] saving $112,748—demonstrating the cost-effectiveness of optimizing nursing roles in care delivery.
- A 2.8% decline in 60-day wound-related hospitalizations prevented 200 cases, translating to $3.93M in annual savings based on an average hospital stay cost of $13,131.[8]
- Findings highlight AI's role in helping HH organizations manage chronic wounds and transition to sustainable, value-based care.

## References

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