

Evaluating the Integration, Impact, and Scalability of MIMOSA: A Mixed-Methods Assessment of Non-Invasive Wound Imaging in Nova Scotia

INTRODUCTION

Pressure Injuries (PIs)

- Are caused by prolonged pressure on bony areas and leads to skin and tissue damage. This can progress into deep wound, infections and if untreated can lead to sepsis.

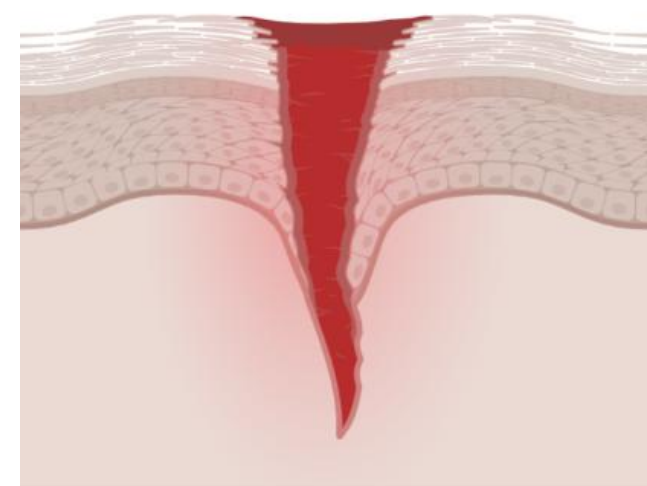


Figure 1. Pressure injury wound

Current Risk Assessment

- In hospitals across North America, the Braden Scale and visual skin assessments are the most commonly used methods for evaluating the risk of PIs. However, these may miss early, below surface tissue damage.

Innovation: MIMOSA

- A compact, non-invasive wound imaging technology device that uses multispectral near-infrared spectroscopy and thermal imaging to capture skin temperature (°C), tissue oxygenation (StO₂), and digital images.

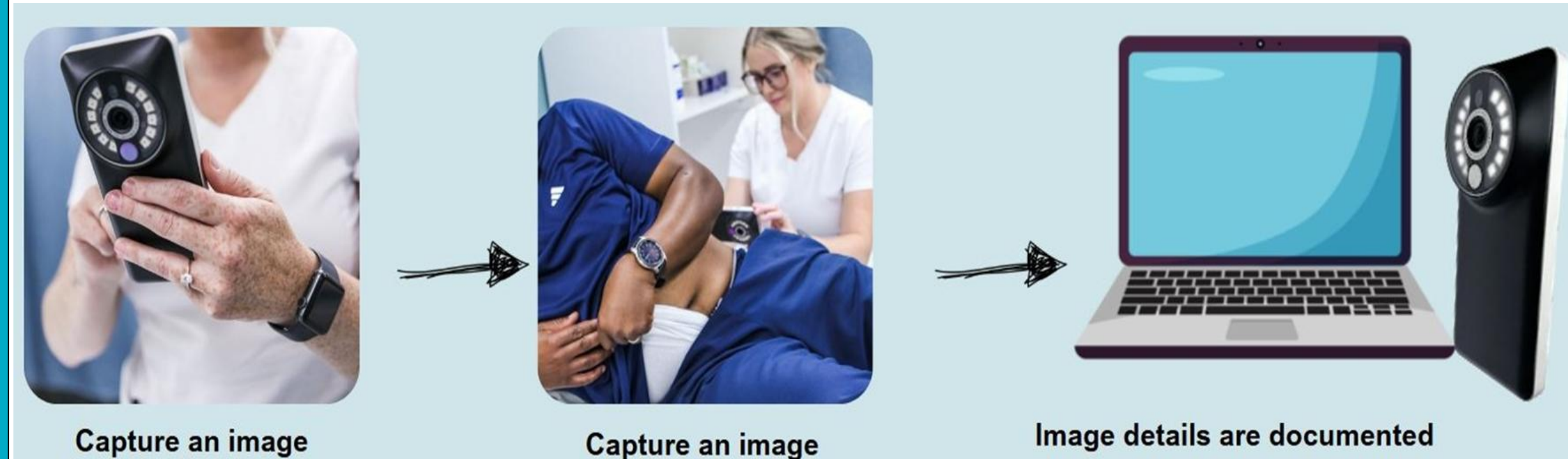


Figure 2. MIMOSA device use

Desired Benefits

- MIMOSA aims to facilitate earlier detection of wound deterioration, reduce hospitalizations, enhance documentation and prevention, and enhance patient outcomes.
- An evaluation was completed to assess MIMOSA's integration into Nova Scotia Health clinical workflows from January 2025 to August 2025.

OBJECTIVES

This evaluation aimed to:

- Assess MIMOSA's integration into workflows and identify barriers and facilitators;
- Understand initial perceptions, contextual influences, and alignment with stakeholder needs; and
- Evaluate the device's overall impact on patient care, and health system efficiency.

METHODS

Design: A convergent parallel mixed-methods design was utilized.

Data Collection and Analysis:

- Quantitative data encompassed device utilization rates, and patient demographics. Descriptive statistics summarized collected data.
- Qualitative data, collected via semi-structured interviews, explored the care teams' perceptions and contextual factors influencing adoption. Inductive thematic analysis of interview data was completed to determine key takeaways.

Integration: Findings were combined through triangulation for comprehensive insights.

RESULTS

Device Use

- 11 providers used the device on 40 patients from January 2025 to August 2025. Use ranges from one to nine uses per provider on a unique patient across four locations.
- The mean age of patients was 61.3 years old (SD:18.4).

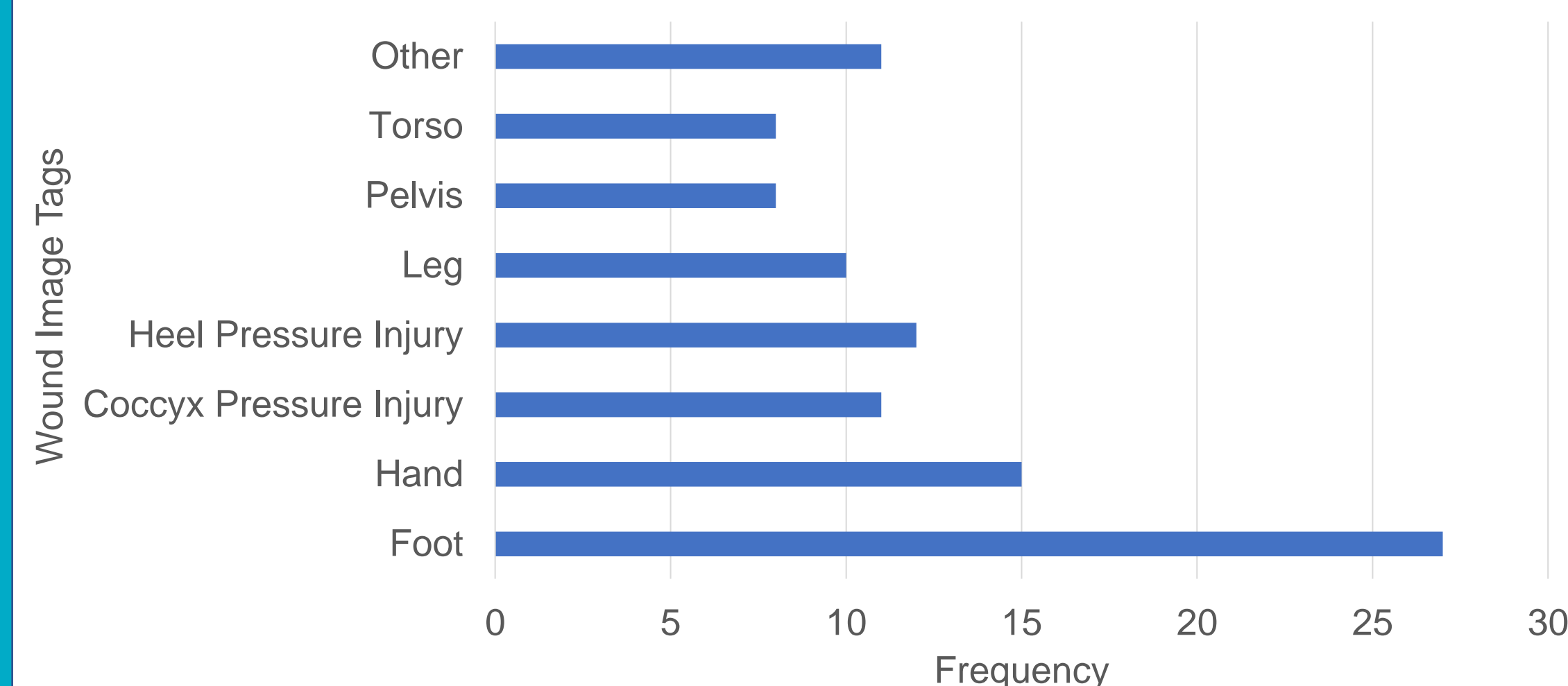


Figure 3. Frequency of wound image tags added to MIMOSA images from January 2025 -August 2025



Figure 4. MIMOSA device being demoed

"[Patients] they're generally pretty excited and wanna see the pictures. And really interested and eager."
– Focus Group Participant

Results

Clinical Team Interviews

- Three clinical device users participated in a focus group in August 2025. Two were wound care nurse specialists, and one was an ICU clinical lead. Interview participants used the device on three, six, and nine patients.

Initial perceptions and training were positive

- Onboarding and confidence grew with hands-on training.
- Perceived value for tracking wound healing.
- Positive but inconsistent use.

There were challenges to workflow integration

Challenges:

- The device is often left charging in a secure office; one device per site limits availability; users forget to bring it on rounds.
- Short stays, patient instability, and competing priorities reduce inpatient use.

Facilitators:

- More use when it is easily accessible and available.
- More consistent use in outpatient settings as patients have more structured and regular follow up.

"Much better in outpatients...we can track the progress whereas sometimes these inpatients get discharged." – Focus Group Participant

Device was effective for monitoring chronic pressure injuries

- Participants found the device use most valuable for chronic, slow-healing, complex wounds with clear wound borders.
 - Participants expressed that it helps with objective measurements, consistent tracking between staff and is a useful tool for patient education and motivation.
- "It has enabled us to track wounds more appropriately, specifically with their size and shape and how they're doing over a number of days, which is very cool to see."* – Focus Group Participant

Patient experience was positive

- Patients appeared more engaged and motivated when shown serial wound images, which improved understanding of progress and supported treatment adherence.

Discussion

- MIMOSA was viewed as a useful, easy-to-use tool for wound tracking and patient engagement.
- Limitation:** Low uptake; limited consistent use prevents firm conclusions about its overall impact.

Next Steps:

- Improve uptake. Clinical user suggestions included more devices, a carrying case, greater portability, and longer battery life.
- Conduct future evaluations once there is higher usage to better assess effectiveness and integration.
- Explore a cost-effectiveness analysis once sufficient uptake is achieved.

Conclusions

MIMOSA shows strong potential for wound tracking and patient engagement, but broader uptake and evaluation are needed to realize its full impact.