Model Configuration

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Select Platform ⓘ

ai-verde ⌄

Select Model

llama-3.3-70b-fp8 ⌄

Advanced Model Settings ⌄

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107.3KB

Select Platform ⍰

ai-verde ⌄

Select Model

llama-3.3-70b-fp8 ⌄

Advanced Model Settings ⌃

API Key

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https://llm-api.cyverse.ai

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Statistical Methods

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- Longitudinal analysis of healing trajectories
- Risk factor significance assessment
- Comparative analysis across wound types

Wound Care Management & Interpreter Dashboard

Select Patient

All Patients ⌄

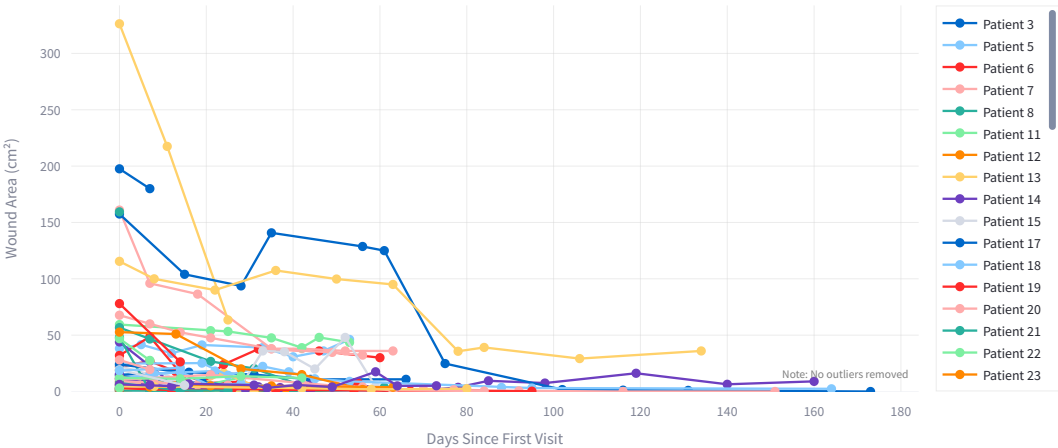Overview | Impedance Analysis | Temperature | Oxygenation | Exudate | Risk Factors | LLM Analysis

Overview

Population Statistics 🔗

Temperature Outlier Threshold ⍰

0.00 — +

Wound Area Progression - All Patients

Average Days in Study	Est. Treatment Duration
39.4 days	57.2 days

Average Healing Rate	Improvement Rate
11.39 cm²/day	71.2%

Note: This dashboard loads data from a user-uploaded CSV file.

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Overview | **Impedance Analysis** | Temperature | Oxygenation | Exudate | Risk Factors | LLM Analysis
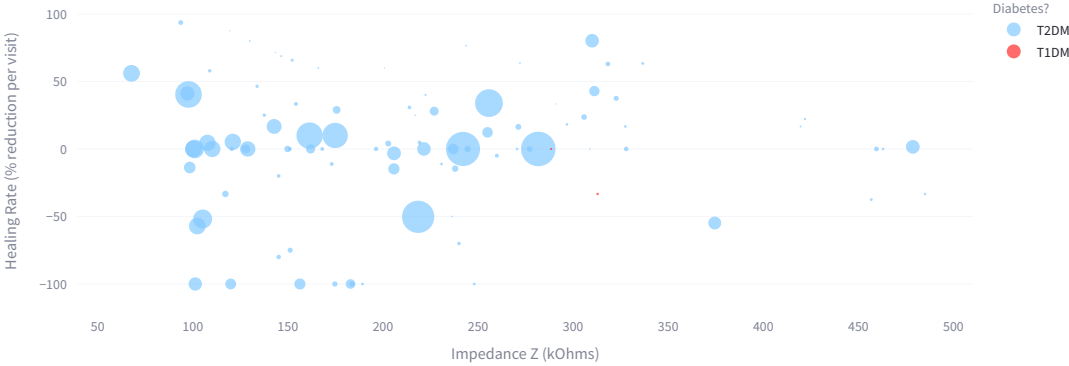
Impedance Analysis

Impedance Outlier Threshold ⑦

0.20   − +

Statistical correlation: r = -0.05 (p = 0.501)
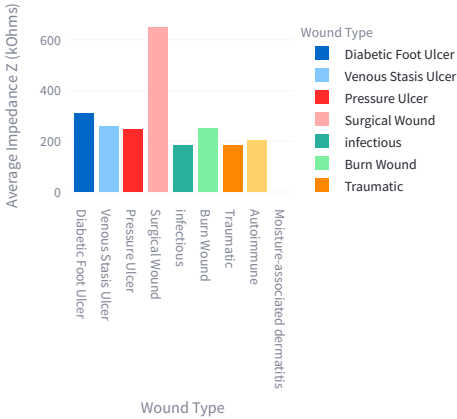
Impedance vs Healing Rate Correlation

Impedance Components Over Time

Average Impedance Components by Visit

Impedance by Wound Type

Average Impedance by Wound Type

Wound Care Management & Interpreter Dashboard

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All Patients	⌄

Overview   Impedance Analysis   **Temperature**   Oxygenation   Exudate   Risk Factors   LLM Analysis

Temperature Gradient Analysis

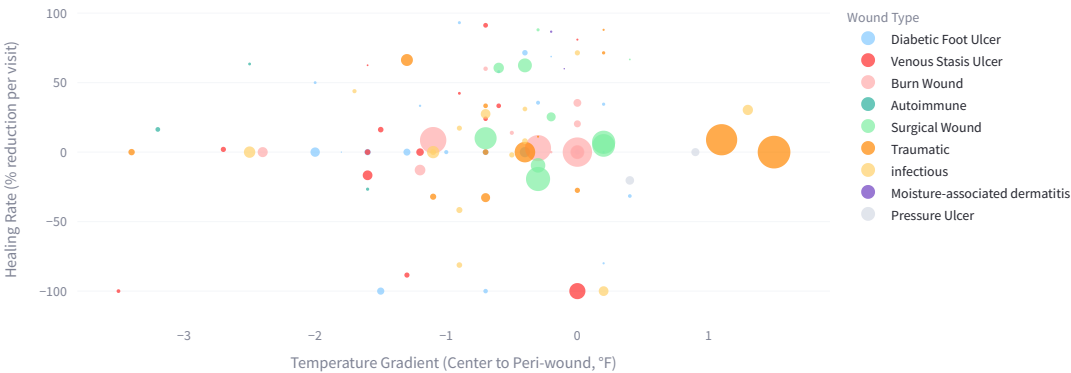Temperature Outlier Threshold ⑦

0.20	—	+

Statistical correlation: r = 0.13 (p = 0.189)

Temperature Gradients by Wound Type

Temperature Gradient vs. Healing Rate

Note: This dashboard loads data from a user-uploaded CSV file.

Model Configuration

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All Patients　　　　　⌄

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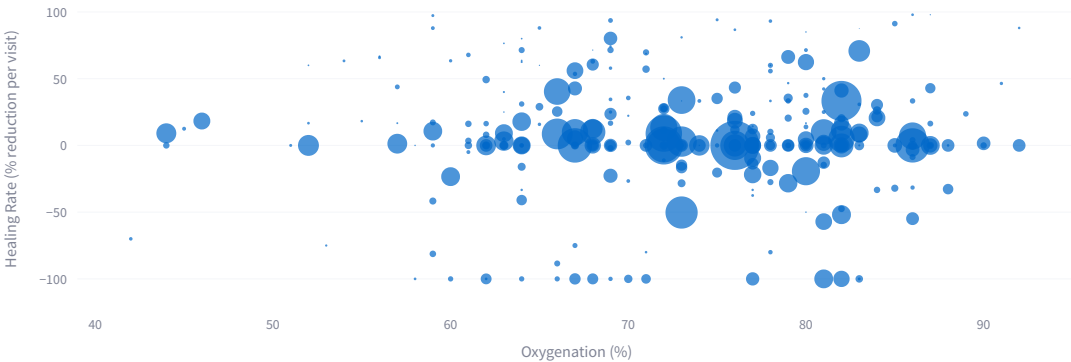
Oxygenation Analysis

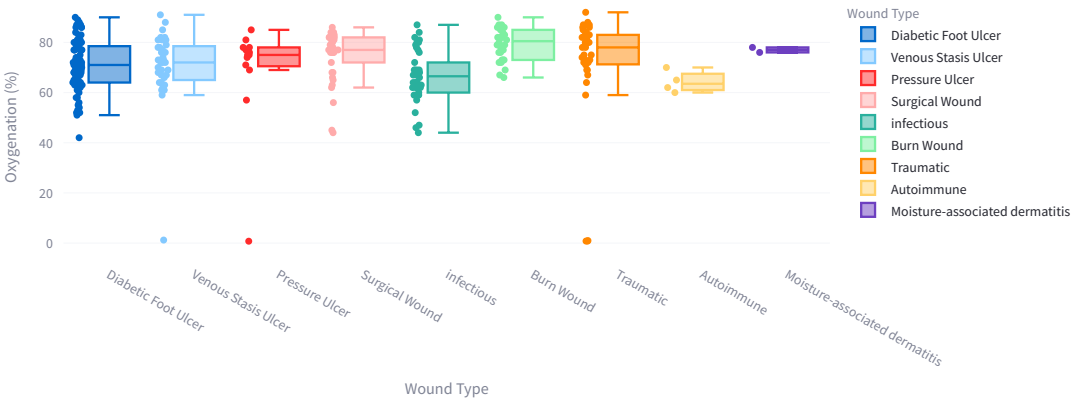Oxygenation Outlier Threshold　⑦

0.20　　　　　−　+

Statistical correlation: r = 0.04 (p = 0.462)

Relationship Between Oxygenation and Healing Rate (size=Hemoglobin Level)

Oxygenation Levels by Wound Type

Wound Type
- ■ Diabetic Foot Ulcer
- ■ Venous Stasis Ulcer
- ■ Pressure Ulcer
- ■ Surgical Wound
- ■ infectious
- ■ Burn Wound
- ■ Traumatic
- ■ Autoimmune
- ■ Moisture-associated dermatitis

Note: This dashboard loads data from a user-uploaded CSV file.

Wound Care Management & Interpreter Dashboard

Select Patient

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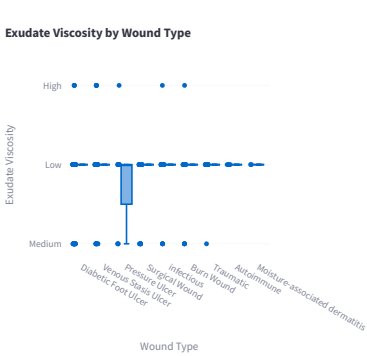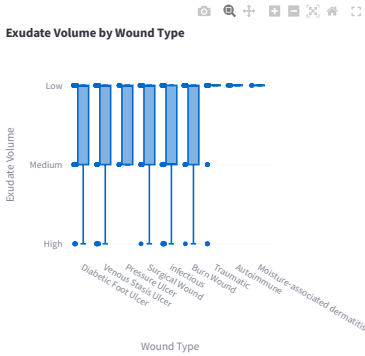Overview   Impedance Analysis   Temperature   Oxygenation   Exudate   Risk Factors   LLM Analysis

Exudate Analysis

Volume Analysis

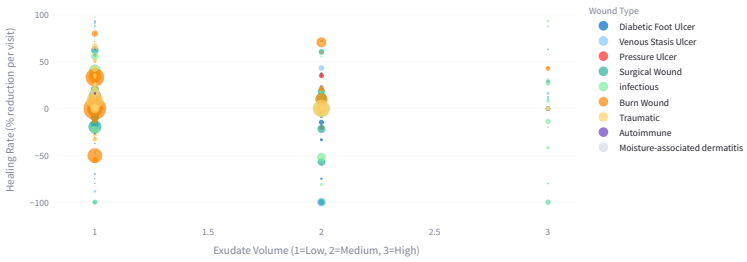Volume correlation vs Healing Rate: r = -0.08 (p = 0.179)

Exudate Volume by Wound Type

Viscosity Analysis

Viscosity correlation vs Healing Rate: r = -0.03 (p = 0.576)

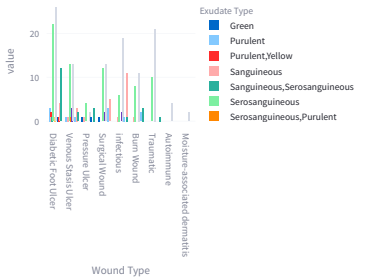**Exudate Viscosity by Wound Type**

Relationship Analysis

Exudate Characteristics vs. Healing Rate
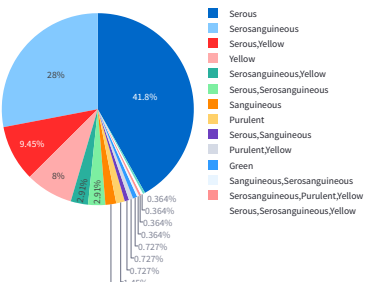

Exudate Type Distribution

Exudate Types by Wound Category

Overall Distribution of Exudate Types

Note: This dashboard loads data from a user-uploaded CSV file.

Wound Care Management & Interpreter Dashboard

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Select Patient

| All Patients ▾ |

Overview Impedance Analysis Temperature Oxygenation Exudate **Risk Factors** LLM Analysis

Risk Factors Analysis

Diabetes Smoking BMI

Impact of Diabetes on Wound Healing

Healing Rate Distribution by Diabetes Status

Statistical Summary:

- No: Average Healing Rate = 13.73% (n=154, SD=39.38, Improvement Rate=15.6%)

- T1DM: Average Healing Rate = 38.54% (n=4, SD=65.38, Improvement Rate=25.0%)

- T2DM: Average Healing Rate = 4.79% (n=150, SD=47.1, Improvement Rate=25.3%)

Wound Type Distribution by Diabetes Status

Wound Care Management & Interpreter Dashboard

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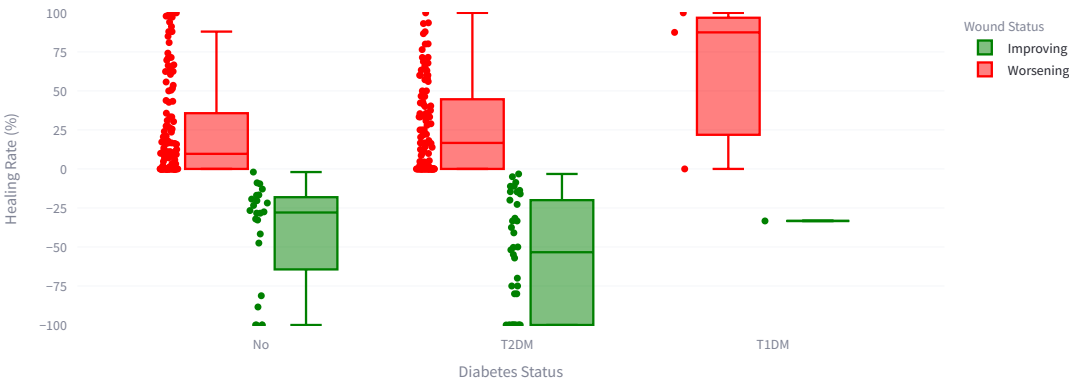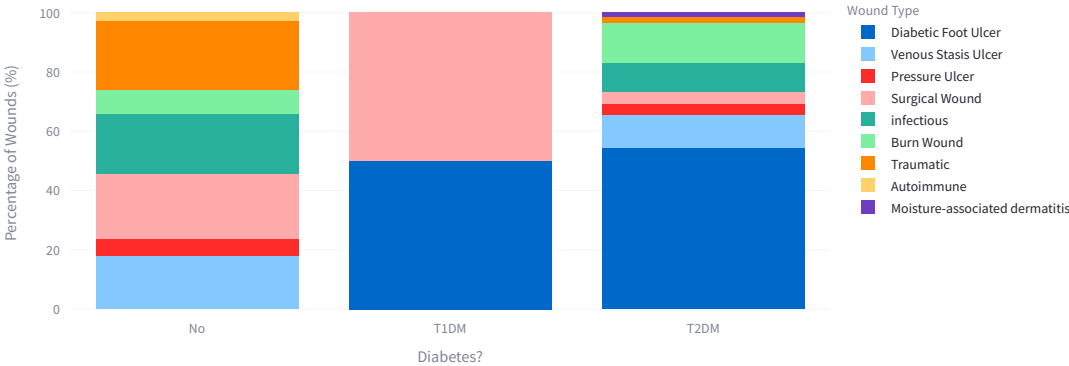
Select Patient

All Patients ⌄

Overview　Impedance Analysis　Temperature　Oxygenation　Exudate　**Risk Factors**　LLM Analysis

Risk Factors Analysis

Diabetes　**Smoking**　BMI

Impact of Smoking on Wound Healing

Healing Rate Distribution by Smoking Status

Statistical Summary:

- Current: Average Healing Rate = 16.94% (n=45, SD=43.6, Improvement Rate=15.6%)

- Former: Average Healing Rate = 3.62% (n=46, SD=51.2, Improvement Rate=21.7%)

- Never: Average Healing Rate = 9.49% (n=217, SD=42.19, Improvement Rate=21.2%)

Wound Type Distribution by Smoking Status

Model Configuration

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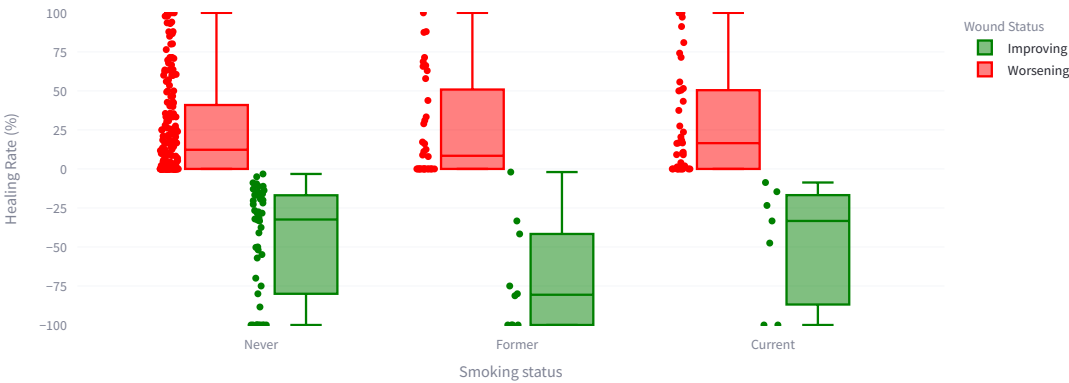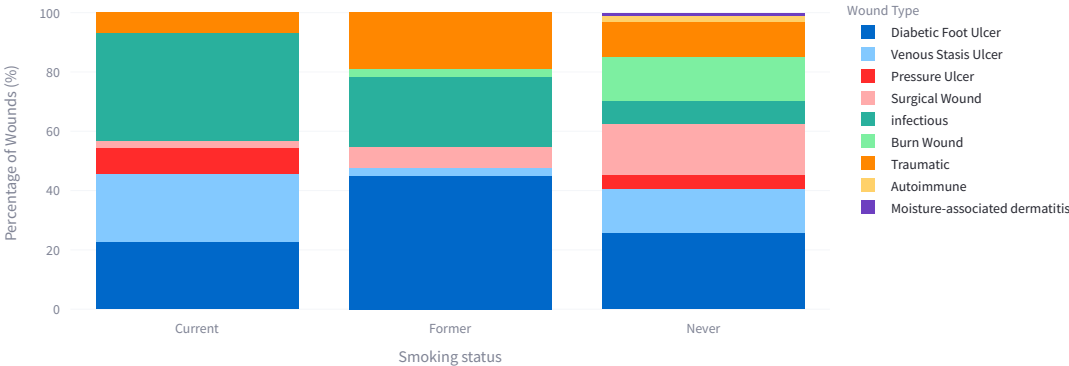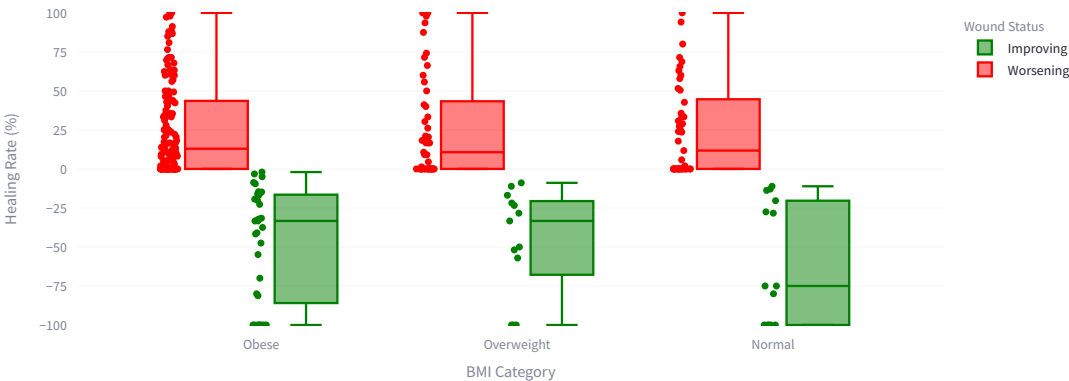# Wound Care Management & Interpreter Dashboard

Select Patient

All Patients	⌄

Overview   Impedance Analysis   Temperature   Oxygenation   Exudate   **Risk Factors**   LLM Analysis

Risk Factors Analysis

Diabetes   Smoking   **BMI**

Impact of BMI on Wound Healing

Healing Rate Distribution by BMI Category

Statistical Summary:

- Underweight: Average Healing Rate = nan% (n=0, SD=nan, Improvement Rate=nan%)

- Normal: Average Healing Rate = 4.44% (n=59, SD=48.18, Improvement Rate=23.7%)

- Overweight: Average Healing Rate = 11.1% (n=62, SD=44.93, Improvement Rate=21.0%)

- Obese: Average Healing Rate = 10.69% (n=161, SD=42.89, Improvement Rate=20.5%)

Wound Type Distribution by BMI Category

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Overview   Impedance Analysis   Temperature   Oxygenation   Exudate   Risk Factors   LLM Analysis

LLM-Powered Wound Analysis

Run Analysis

Analysis   Prompt

Clinical Report: Wound Care Analysis

Introduction: This report analyzes a wound care dataset from a smart bandage clinical trial to identify key patterns and correlations that can inform evidence-based recommendations for improving wound care outcomes.

Key Findings:

1. **Demographics vs Healing Outcomes:**

   - Age: No significant correlation between age and healing outcomes was found, with a mean age of 52.8 years.
   - Gender: Male patients (58.5% of the population) showed no significant difference in healing outcomes compared to female patients.
   - BMI: Obese patients (45.5% of the population) tended to have slower healing rates, but this correlation was not statistically significant.

2. **Risk Factors' Impact on Healing:**

   - Diabetes: 26 patients (39.4% of the population) had Type 2 Diabetes Mellitus (T2DM), which had a negligible impact on healing rates.
   - Smoking: Current smokers (16.7% of the population) showed no significant difference in healing outcomes compared to never smokers.

3. **Wound Characteristics vs Healing Time:**

   - Wound Type: Diabetic foot ulcers (80 patients) had a mean healing rate of 22.2%, while venous stasis ulcers (41 patients) had a mean healing rate of 11.1%.
   - Initial Wound Size: Small wounds (<10 cm^2) had a higher healing rate (18.0%) compared to medium (25.6% deterioration) and large wounds (16.7% deterioration).

4. **Sensor Data Trends:**

   - Temperature: The mean temperature at the center of the wound was 96.2°F, with a -0.5°F gradient from the center to the edge.
   - Impedance: The mean impedance magnitude was 306.8 kOhms.
   - Oxygenation: The mean oxygenation percentage was 71.6%, with no significant correlation with healing outcomes.

Clinical Implications:

1. **Risk Stratification:** Patients with large wounds or those who are obese may require more intensive monitoring and treatment.
2. **Treatment Optimization:** Targeted treatments for diabetic foot ulcers and venous stasis ulcers may improve healing outcomes.
3. **Monitoring Protocols:** Regular temperature and impedance measurements may help identify potential complications early, while oxygenation measurements may not be as relevant for healing outcomes.

Actionable Recommendations:

1. **Risk Stratification:**

   - Use a risk assessment tool to identify patients with high-risk wounds (e.g., large wounds, obesity).
   - Develop personalized treatment plans for high-risk patients.

2. **Treatment Optimization:**

   - Consider using advanced wound dressings or topical therapies for diabetic foot ulcers and venous stasis ulcers.
   - Optimize wound care protocols based on wound type and size.

3. **Monitoring Protocols:**

   - Implement regular temperature and impedance monitoring for all patients.
   - Consider reducing the frequency of oxygenation measurements or using alternative methods to assess wound oxygenation.

Future Directions:

1. **Data Collection:** Continue collecting data on wound characteristics, treatment outcomes, and sensor data to refine risk stratification and treatment optimization strategies.
2. **Machine Learning Analysis:** Apply machine learning algorithms to identify complex patterns and correlations in the data that may inform more effective wound care protocols.
3. **Clinical Trials:** Design clinical trials to evaluate the efficacy of targeted treatments and monitoring protocols for high-risk wounds.

Download Full Report (DOCX)

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