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Wound Care Management & Interpreter Dashboard

Select Patient

Patient 41

Overview Impedance Analysis Temperature Oxygenation Exudate Risk Factors LLM Analysis

Overview

Patient Demographics

Age: 42.0 years
Sex: Male
BMI: 40.6
Race: White/ Caucasian
Ethnicity: Not Hispanic or Latino

Medical History

other: Hyperlipidemia, Hypertension, Other {pmhx_oth}
Smoking Status: No
Hypertension: No
Peripheral Vascular Disease: No

Diabetes Status

Status: T2DM
HbA1c: ---%
A1c available: No

Wound Details (present at 1st visit)

Basic Information

Location: Left plantar forefoot
Type: Burn Wound
Current Care: MediHoney
Clinical Events: ---

Wound Characteristics

Granulation

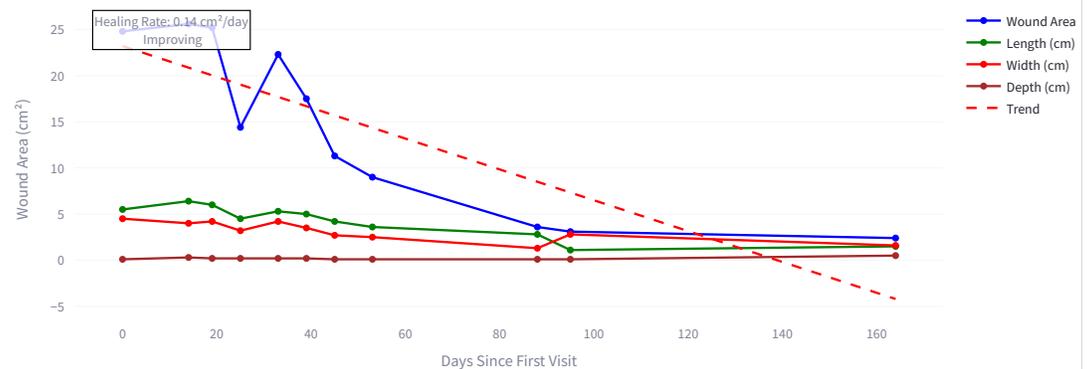
Coverage: All of the wound area
Quality: Pale

Undermining Details

Present: False Location: --- Tunneling: ---

Wound Area Over Time

Wound Area Progression - Patient 41



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- Impedance measurements (Z, Z', Z'')
- Temperature gradients
- Oxygenation levels
- Patient risk factors

Statistical Methods

The visualization is supported by these statistical approaches:

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

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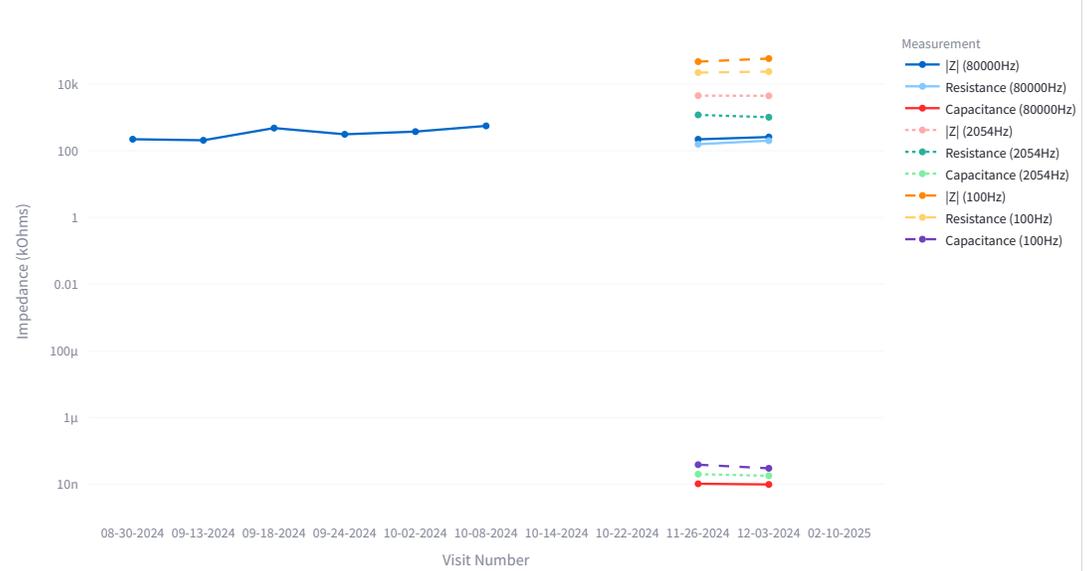
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Patient 41

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

Impedance Analysis

Impedance Measurements Over Time



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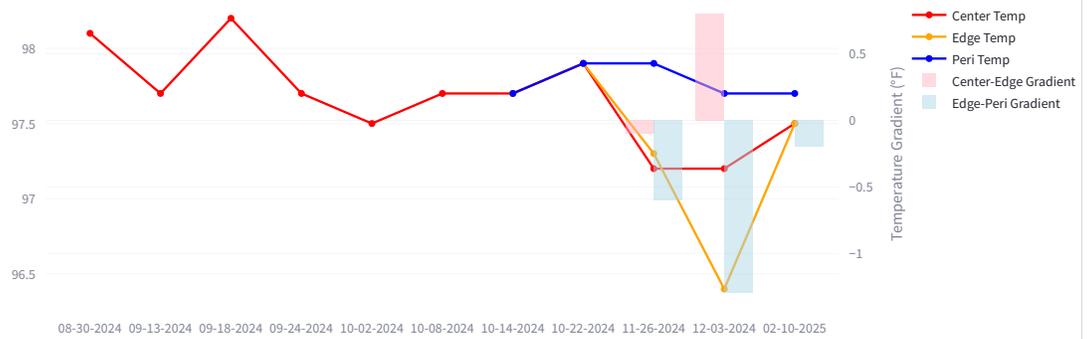
Patient 41

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

Temperature Gradient Analysis for Patient 41

Temperature Trends Visit-by-Visit Analysis Overview & Clinical Guidelines

Temperature Trends Over Time



Statistical Summary

Average Center Temp

97.7°F

Average Edge Temp

97.4°F

Average Peri Temp

97.8°F

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Temperature Trends **Visit-by-Visit Analysis** Overview & Clinical Guidelines

Visit-by-Visit Temperature Analysis

08-30-2024 09-13-2024 09-18-2024 09-24-2024 10-02-2024 10-08-2024 10-14-2024 10-22-2024 11-26-2024 12-03-2024 02-10-2025

Temperature Readings

center

98.1°F

edge

None°F

peri

None°F

Clinical Assessment

✔ Center temperature is in the optimal range for wound healing.

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Temperature Readings

center	edge	peri
97.7°F	97.7°F	97.7°F

Temperature Gradients

center-edge	edge-peri	Total Gradient
0.0°F	0.0°F	0.0°F

Clinical Assessment

i Center temperature is below optimal range. Mild warming might be beneficial.

Gradient Analysis

✓ Temperature gradients are within normal range.

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Temperature Gradient Analysis for Patient 41

Temperature Trends Visit-by-Visit Analysis **Overview & Clinical Guidelines**

Clinical Guidelines for Temperature Assessment

Temperature plays a crucial role in wound healing. Here's what the measurements indicate:

- Optimal healing occurs at normal body temperature (98.6°F)
- Temperatures below 93°F significantly slow healing
- Temperatures between 98.6-102°F can promote healing
- Temperatures above 102°F may damage tissues

Key Temperature Zones



- | | | | |
|--|---|---|--|
| <ul style="list-style-type: none"> • Severely impaired healing • Reduced blood flow • Low cellular activity | <ul style="list-style-type: none"> • Suboptimal healing • May need warming • Monitor closely | <ul style="list-style-type: none"> • Optimal healing range • Good blood flow • Active metabolism | <ul style="list-style-type: none"> • Tissue damage risk • Possible infection • Requires attention |
|--|---|---|--|

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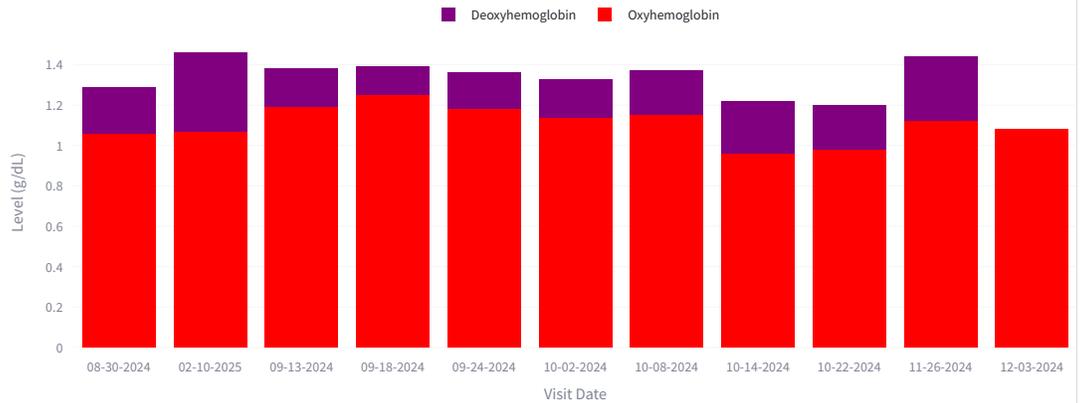
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Overview Impedance Analysis Temperature **Oxygenation** Exudate Risk Factors LLM Analysis

Oxygenation Analysis

Hemoglobin Components



Oxygenation and Hemoglobin Measurements Over Time



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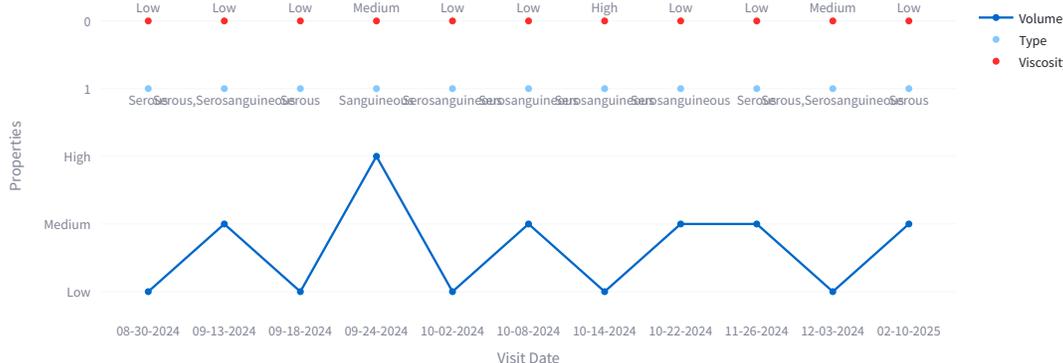
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Select Patient

Patient 41

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

Exudate Analysis



Clinical Interpretation of Exudate Characteristics

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Volume Analysis

Current Level: Low

Low volume exudate is typical in:

- Necrotic wounds
- Ischaemic/arterial wounds
- Neuropathic diabetic foot ulcers

Monitor for signs of insufficient moisture.

Viscosity Analysis

Current Level: Low

Low viscosity (thin) exudate may suggest:

- Low protein content
- Possible venous condition
- Potential malnutrition
- Presence of fistulas

Monitor fluid balance and nutrition.

Type Analysis

Current Types: Serous

Type: Serous Description: Straw-colored, clear, thin Clinical Indication: Normal healing process

Treatment Implications

Recommended Actions:

- Use moisture-retentive dressings
- Protect wound bed from desiccation
- Consider hydrating dressings

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Exudate Analysis



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Volume Analysis

Current Level: Low

Low volume exudate is typical in:

- Necrotic wounds
- Ischaemic/arterial wounds
- Neuropathic diabetic foot ulcers

Monitor for signs of insufficient moisture.

Viscosity Analysis

Current Level: High

High viscosity (thick) exudate may indicate:

- High protein content
- Possible infection
- Inflammatory processes
- Presence of necrotic material

Consider reassessing treatment approach.

Type Analysis

Current Types: Serosanguineous

Type: Serosanguineous Description: Pink or light red, thin Clinical Indication: Presence of blood cells in early healing

Treatment Implications

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

Risk Factors Analysis

Patient Risk Profile

Diabetes Status: T2DM

Smoking Status: Never

BMI: 40.6

BMI Category: Obese Class II-III

Risk Assessment

Risk Category: **Moderate** (4 points)

Risk Factors:

- Obesity
- High impedance

Estimated Healing Time: 20.2 weeks

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

LLM-Powered Wound Analysis

Patient 41

Run Analysis

Analysis Prompt

Wound Healing Trajectory:

The patient's wound healing trajectory can be described as unpredictable, with fluctuations in wound size, exudate, and tissue characteristics. Initially, the wound size increased from 5.5cm x 4.5cm to 6.4cm x 4.0cm between August 30, 2024, and September 13, 2024. However, from September 18, 2024, to October 14, 2024, the wound size decreased, with a notable reduction in area from 25.2cm² to 11.3cm². After October 14, 2024, the wound size continued to decrease, eventually reaching 2.4cm² on February 10, 2025.

Tissue characteristics have also fluctuated, with changes in color from pale to pink, red, and back to pink. Exudate volume and viscosity have varied, with periods of low, medium, and high volume, as well as changes in exudate type (serous, serosanguineous, and sanguineous).

Concerning Patterns:

Several worrying trends have been identified:

1. **Inconsistent wound size reduction:** Despite an overall decrease in wound size, there have been periods of increase, which may indicate a stalled or slow healing process.
2. **Exudate volume and viscosity fluctuations:** Repeated changes in exudate volume and viscosity may suggest underlying issues, such as infection or inadequate wound care.
3. **Tissue color variability:** The repeated changes in tissue color may indicate ongoing inflammation or inadequate oxygenation.
4. **Impedance measurement inconsistencies:** The absence of impedance measurements for certain dates and the varying frequencies used (e.g., 80000, 100000, 1843.42) make it challenging to interpret the data and identify trends.

Care Recommendations:

Based on the wound type, characteristics, and healing progress, the following care recommendations are suggested:

1. **Continue using Medihoney:** Medihoney has been used consistently throughout the treatment period, and its antimicrobial properties may be beneficial in promoting wound healing.
2. **Monitor and adjust exudate management:** Given the fluctuations in exudate volume and viscosity, it is crucial to regularly assess and adjust the wound dressing to ensure adequate exudate management and prevent maceration.
3. **Optimize wound offloading:** As the patient has a high BMI and the wound is located on the plantar forefoot, it is essential to ensure proper offloading to reduce pressure and promote healing.
4. **Consider debridement:** If the wound is not progressing as expected, consideration should be given to debridement to remove any non-viable tissue and promote healing.

Complication Risks:

Based on the patient's profile and wound characteristics, the following complication risks are assessed:

1. **Infection:** The patient's diabetes (T2DM) and high BMI increase the risk of infection, which may be exacerbated by the wound's location and fluctuations in exudate volume and viscosity.
2. **Delayed healing:** The patient's diabetes and high BMI may also contribute to delayed healing, which may be further compounded by the wound's location and inadequate offloading.
3. **Pressure ulcers:** The patient's high BMI and the wound's location on the plantar forefoot increase the risk of pressure ulcers, which may be prevented with proper offloading and wound care.

Significance of Sensor Measurements:

The sensor measurements provide valuable insights into the wound's oxygenation, temperature, and impedance trends:

1. **Oxygenation (O₂):** The O₂ levels have generally been within a normal range (73.0%-90.0%), indicating adequate oxygenation. However, the fluctuations in O₂ levels may suggest varying degrees of inflammation or edema.
2. **Temperature:** The temperature measurements have been relatively consistent, with most readings between 97.2°F and 98.2°F. This suggests a stable wound environment, but the occasional variations may indicate underlying issues.
3. **Impedance:** The impedance measurements have been inconsistent, making it challenging to interpret the data. However, the available measurements suggest a trend towards increased impedance over time, which may indicate improvements in wound healing.

In summary, while the wound has shown some progress in healing, there are concerns regarding the inconsistent wound size reduction, exudate volume and viscosity fluctuations, and tissue color variability. Continued monitoring and adjustments to the care plan are necessary to promote optimal wound healing and prevent complications.

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