Deep Tissue Pressure Injury: Using Tissue Recovery Outcomes to Inform Best Practice at the Point of Care
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Introduction
Deep tissue pressure injuries (DTPIs) represent a significant public health risk due to their proclivity for deteoration to costly, life-altering full thickness wounds. Although intermittent reports of tissue recovery among deep tissue pressure injury (DTPI) have emerged in the literature, these outcomes remain marginalized in wound management paradigms and reimbursement procedures.

Methods
A scoping review was conducted of four bibliographic databases using the Arksey and O’Malley framework. A three-phase screening process was used to assess the relevance of identified citations to the research question. Twelve clinical (n=11) and scientific (n=1) citations reporting tissue recovery among adults with DTPIs were reviewed in detail and relevant data abstracted, analyzed, and reported.

Scoping Review Defined
A scoping review is defined as a type of research synthesis that aims to map the literature on a specific topic and identify key concepts and gaps in the research to inform practice and future research.

PRISMA Evidence Flow Diagram

<table>
<thead>
<tr>
<th>Records identified through database searching (n = 3808)</th>
<th>Additional records identified through other sources (n = 29)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Records after duplicates removed (n = 3735)</td>
<td>Records after reviewers (n = 3655)</td>
</tr>
<tr>
<td>Detailed records screened (n = 3655)</td>
<td>Records excluded (irrelevance) (n = 3537)</td>
</tr>
<tr>
<td>Full-text articles assessed for eligibility (n = 118)</td>
<td>Full-text articles excluded, w/reasons (n = 106)</td>
</tr>
<tr>
<td>CLINICAL studies included in quantitative synthesis (n = 11)</td>
<td>SCIENTIFIC studies included in qualitative synthesis (n = 1)</td>
</tr>
</tbody>
</table>

Purpose
The purpose of this study was to analyze published evidence, to elucidate the prevalence of tissue recovery among DTPIs and identify mitigating factors that may guide detection, prognosis, and management at the point of care.

Tissue Recovery Defined
Tissue recovery is defined as interruption of the normal trajectory of DTPI destruction, as evidenced by any confirmed DTPI that completely resolves or evolves to a presentation consistent with a lesser degree of injury.

Results

<table>
<thead>
<tr>
<th>Sample</th>
<th>DTPI Size (n=315)</th>
<th>TISSUE RECOVERY achieved in 65% of included DTPIs</th>
<th>SACRAL DTPI 2X more prevalent than other sites</th>
</tr>
</thead>
<tbody>
<tr>
<td>467 Patients</td>
<td>610 DTPIs</td>
<td>62.8%</td>
<td>62.8%</td>
</tr>
</tbody>
</table>


tissue recovery may be defined as the spontaneous resolution or regression of a DTPI, with a size that is less than what it was at the onset of therapy.

Hospital Day 5

Hospital Day 18

Conclusions
The absence of large studies aimed at addressing the intricacies of DTPI management presents a challenge to minimizing harm at the point of care. This scoping review fills that gap by mapping current DTPI literature to identify published outcomes that inform effective, evidence-based management, thereby helping clinicians at the point of care save time and money, while catalyzing the best clinical and financial outcomes.

References:

Deep Tissue Pressure Injury (DTPI) Risks & Markers

- Mean Braden: 12
- Nicotine Use (P=.0056)
- Female (P=.046)

Deep Tissue Pressure Injury (DTPI) Nutritional Markers

- Prealbumin 10.9mg/dL
- Albumin 2.5g/dL
- Tube Feeding (P=.02)

Deep Tissue Pressure Injury (DTPI) Surgical Procedure

- Surgical Procedure (P=.0033)

Deep Tissue Pressure Injury (DTPI) Outcomes

- Anemia (P=.005)
- Preiblood 10.0mg/dL
- Decreased severity

Deep Tissue Pressure Injury (DTPI) Treatment

- Air-Fluidized Therapy
  - 9 days (mean)
  - NO+
  - <$700.00
  - 80%
  - Reduced magnitude of tissue loss
  - Stage 3-4 prevented

- Balsam Peru-based Ointments
  - BID
  - NO+
  - $21 - $50/30g+
  - NR

- Non-contact Low Frequency Ultrasound
  - QD-BID
  - NO+
  - $100 - $186
  - 50%
  - Mean healing: 17.8 days
  - Resolution as early as day 4
  - Reduced severity

- Soft-silicone Foam Dressings
  - Up to 7 days
  - YES
  - $1.00 - $1.50
  - 66.4% - 89%

- Addition of other DTPI-effective therapies
- Daily cost depends on DTPI size

- NR-Not Reported

- Additional Outcomes

- No Change

- Increased

- Decreased

- DTPI Size

- 62.8%

- 22.2%

- 14.9%

- Hospital Day 5

- Hospital Day 18

- Reduced severity

- Resolution as early as day 4

- No Change

- Increased

- Decreased

- DTPI Size

- 62.8%