NPUAP Mission

The National Pressure Ulcer Advisory Panel (NPUAP) is the nation’s leading scientific expert on pressure injury prevention and treatment. Our goal is to insure improved patient health, and to advance public policy, education and research.

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Reduced Price for the International Guideline!

NPUAP in collaboration with the European Pressure Ulcer Advisory Panel (EPUAP) and the Pan Pacific Pressure Injury Alliance (PPPIA) has worked to develop a pressure injury prevention and treatment the Clinical Practice Guideline and Quick Reference Guide. The price of these books have recently been reduced.

Purchase your copy today at www.npuap.org

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NEW E-Versions of the International Guideline!

The Clinical Practice Guideline and various chapters within the Guideline are now available as downloadable publications! Some of the chapters include bariatric individuals, critically ill patients and more!

Prices for these e-version publications range from $10 to $50.

Purchase your copy today at www.npuap.org

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NPUAP Monograph

Released in November 2012, the 254-page, 24 chapter monograph, Pressure Ulcers: Prevalence, Incidence and Implications for the Future was authored by 27 experts from NPUAP and invited authorities and edited by NPUAP Alumna Dr. Barbara Pieper.

The monograph focuses on pressure ulcer rates from all clinical settings and populations; rates in special populations; a review of pressure ulcer prevention programs; and a discussion of the state of pressure ulcers in America over the last decade.

Purchase the monograph today at www.npuap.org
- E-version $49
- Individual Chapters $19

NEW Educational Slide Sets

- Pressure Injury Definition and Stages
- Prevention of Pressure Injury
- Treatment of Pressure Injury

Each downloadable slide set includes presentations, speaker notes and handouts

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The planning committee members have listed no financial interest/arrangements that would be considered a conflict of interest.

Objectives

• Explain the rationale of applying standards methodology to support surfaces;
• Discuss the clinical significance of support surface standards in the decision making process of support surfaces at the micro and macro level;
• Describe the implication of language as it relates to the framing of the standards work associated with support surfaces;
• Identity four currently approved testing methods and review the clinical relevance of each test
**Agenda**

- Introductions
- Historical Legacy of S3I
- Process of Validation, Dissemination
- Clinical Significance
- Approved Standards
- Proposed Test Methods
- Challenges & Opportunities
- Implications for the Future
- Time to Dialogue

**S3I Membership: Interprofessional & Diverse**

- **Industry**
  - Clinical Affairs
  - Marketing
  - Research & Development
  - Distributors
- **Researchers**
  - Clinical Laboratories
  - Testing Laboratories
- **Providers**
- **Collaborating Organizations**
- **Academia**
  - Professors
  - Researchers
- **Clinicians**
  - Bedside clinicians
  - Administrators
  - Managers
S3I Industry Experts

Working Groups

- Terms and Definitions
- Tissue Integrity
- Life Span/Safety
- Specific Test Development
- Clinical Relevance
- Publications
Terms & Definitions

- Broad scope
- Multidisciplinary forum
- Literature search
- Iterative Process
  - Critique
  - Analysis
- Collaboration

Consensus Process Leading to Standardized Language

- Agreement on terms for inclusion
- Literature Search
- Sharing & Critiquing of definitions
- Drafts
- Validation
- Voting
- Dissemination
Terms & Definitions

Making Sense of Groups of Terms

Sampling of Clinically Relevant Terms

- Overlays
- Mattresses
- Active
- Reactive
- Lateral Rotation
- Alternating Pressure
- Low Air Loss
- Immersion
- Envelopment
- Shear
- Microclimate
- Support Surfaces
- Cell
- Air
- Gel
- Foam
- Physical Concepts
- Components
- Features
- Categories
- Reactive
- Active
Watershed Terms

• **Support Surface**
  A specialized device for pressure redistribution designed for management of tissue loads, micro-climate and/or other therapeutic function i.e., mattress, mattress overlay, integrated bed system, seat cushion or seat cushion overlay

• **Pressure Redistribution**
  The ability of a support surface to distribute load over the contact areas of the human body. A therapeutic benefit may be achieved by a support surface that redistributes body weight away from tissues at risk of developing pressure ulcers.

... more Watershed Terms

• **Microclimate**
  Temperature and humidity in a specified location, at the support surface/body interface

• **Immersion**
  Depth of penetration (sinking) into a support surface

• **Envelopment**
  The ability of a support surface to conform, so to fit or mold around irregularities in the body
Dissemination: Advances in Skin & Wound Care (2006)

Evolving Interdisciplinary Dynamics of the Standardization

- It is a structured process
- It is all about relationships
- It is responsive, ongoing, & dynamic

*Blending of Multiple Perspectives*
Two Phases of Standard Development

- **Before Approval – Development of Test Methods**
  - Providers
  - Test Laboratories ↔ Industry

- **After Standards Approval of Test Methods**
  - Providers, Professional Associations
  - Test Laboratories ↔ Industry

Dissemination:
Survey Questions

- What is the overall benefit of having standard testing for support surfaces?
- Please explain in lay persons’ language a description of each performance test that has been approved.
- How do you think these Standards should impact how clinicians choose a support surface for an individual patient?
- How should these standards NOT be used?
What is the value of standardization?

Create a level playing field . . .
Comparable performance data of specific support surface characteristics

Clinical Relevance

• Technical standards inform decision making
• One mosaic in a complex patient care design
• They are one of many factors for consideration
Factors to consider in evaluation of support surface performance

<table>
<thead>
<tr>
<th>Support Surface Characteristics</th>
<th>Patient/Unit/Facility Identified Needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Pressure redistribution</td>
<td>• Goals of Care</td>
</tr>
<tr>
<td>• Immersion</td>
<td>• Patient Demographics</td>
</tr>
<tr>
<td>• Envelopment</td>
<td>• Patient Needs</td>
</tr>
<tr>
<td>• Microclimate</td>
<td>• Prevention</td>
</tr>
<tr>
<td>• Shear</td>
<td>• Treatment</td>
</tr>
</tbody>
</table>

Use of Standards Data

• Healthcare providers are now requesting test reports on support surface performance
• Manufacturers are designing devices to meet specifications according to test findings
• Interdisciplinary groups must come to the table with meaningful and transparent understanding of data
Address Consumer Needs

Test result findings are difficult for clinicians to understand . . .

• Translate report findings into clear, concise meaningful language
• Transparency of methods, results
• Transition technical reports into clinically relevant documents that inform choices
• Generate framework of an educational resource to assist in the process of consumer education

Caveat Emptor…

• What do the tests measure?
  – Understand the terminology
  – Understand the test protocols?
• Why are the test results important for your patient population?
  – In an environment of limited reimbursement, matching the most important bed characteristics to your particular patient population.
What are the Standards

- **Existing Standards** *(4 standards in place since 2014)*
  - Terms and Definitions
  - Sweating Guarded Hot plate Microclimate
  - Body Analog Microclimate
  - Immersion

- **New Standards** *(in editing stage, expected publication 2018)*
  - Envelopment Large Radius
  - Envelopment Dual semi hemisphere
  - Heated Bladder Method Microclimate
  - Sliding Resistance

Current Events
Benefits of 10” radius indenter

• High end Sensors
  – Approximates the size of the average male’s hip width
  – Laser trimmed, field interchangeable, and accurate to 0.1%
  – None of the issues associated with pressure mapping
  – Validation in three labs across the country

• Limitations
  – Cost
  – Availability, 3 in existence

Current Events
Benefits of Twin Bulbous Indenter

• High end sensors
  – Approximates the size of the average bone structure with some atrophy
  – Laser trimmed field interchangeable and accurate to 0.1%
  – None of the issues seen with pressure mats
  – Validated in 3 labs across the country
  – Provides gluteal cleft challenge

• Limitations
  – Not anatomical

Current Events
Benefits of the Heated Bladder Method

• Body like interface with the support surface
  – Larger Test area
  – Mechanical average of both pressure and microclimate over that large area
  – Validation in 4 labs across the country

• Limitations
  – Process involves refilling reservoir and averaging the results over time

Sliding Resistance
Benefits of Sliding Resistance

- Mimics movement of body when HOB is elevated
  - Weight of the body drives the pelvis through the surface not just ”on” the surface
  - Initial movement applies the greatest force
  - This force is the potentially damaging force that the tissue experiences

- Limitation
  - Friction plays an important role, can be dealt with using materials of interest

New Possibilities based on Standards

Improve Surface selection based on performance in area of interest
Using the Standards: Specialty Support Surface
Can be Defined by

**Categories**
- Reactive support surface
- Active support surface
- Integrated bed system
- Non-Powered
- Powered
- overlay

**Features**
- Air fluidized
- Alternating pressure
- Lateral rotation
- Low Air Loss
- Zone
- Multi-Zoned surface

Six Elements and Their Control

- **Pressure**- Immersion and Envelopment- spread over greater area
- **Friction**- Sheet, chuck, overlay, moisture - Balance positioning with release
- **Shear**- HOB, Type of Surface, Friction- Reduce sliding and release shear
- **Heat**- Type of surface, turn schedule- Skin off the surface to breath
- **Moisture**- Surface selection, power – moisture reduction, risk reduction
- **Nursing Practices**- Interacts with all features- Provides all of the interventions
Events of interest, Why we should be looking

- Feuchtinger 2006, Heat increased the number of OR related PU in Cardiac surgery
- Kokate. Dose response to heat in injury formation
- Purewick, Microclimage management
  - Female external catheter, no UTI, no HAPI since implementation in Jan.

Is the support surface working?

- Assess the bed on each shift
  - Powered --plugged in?
  - Low air loss -- Leaking air?
  - Alternating pressure – air cells moving?
- Assess overlay with linen change
  - Air cells deflated?
- Assess chair cushion daily
  - Foam leaving body imprints?
  - Gel separated?
  - Air cells inflated?
How Do YOU use this information

• Provider organizations are now beginning to specify the support surface performance by characteristic and feature
• Manufacturers then deliver the custom product that meets that specification
• Life of a support surface is always an issue
• Selection algorithm sensitive to care setting and individual needs

What is coming….

• Disinfection
  – Life of the Support Surface
  – Validation of methods other than "manufacturers instruction"
• Alternating Pressure
• Ingress / Egress
• ISO
  – Inclusion of General Requirements
  – Safety and performance limits
Where can you find the Standards

Drive change:
- Clinical practice
- Manufacturing
- New Product Design
- Reimbursement
- Regulatory
- Quality
Challenges & Opportunities

• Transfer knowledge
• Education
• New testing methods
• Drive innovation
• Applicable conceptual frameworks

• Keep pace with research findings on Pressure Injury
• Expand the Interdisciplinary Community

References


References (cont.)


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