

*National Pressure Ulcer Advisory Panel's*  
**Support Surface Standards Initiative**

2002 Annual Report



**SUMMARY AND NEED**

The National Pressure Ulcer Advisory Panel (NPUAP) is coordinating the development of uniform terminology, test methods and reporting standards for support surfaces. The guidelines will provide an objective means for evaluating and comparing support surface characteristics. Test methods and reporting standards will improve the process of selection and procurement. Consumers, clinicians, manufacturers, and third-party payers are expected to benefit in the following ways:

- **Consumers:** Consumer protection & empowerment; improved access to products; increased quality of life
- **Clinicians:** Improved selection process; more efficient utilization; improved patient outcomes and satisfaction
- **Manufacturers:** Improved product evaluation; enhanced quality improvement; identification of market gaps; protection from market erosion by inferior products; greater rationale for reimbursement
- **Third-party payers:** Objective criteria for reimbursement and utilization decisions; cost effectiveness: increased appropriate utilization of selected products

**PHASE 1 GOALS AND ACCOMPLISHMENTS**

1) **Raise resources for Phase I**

Support sought from private foundations and industry; \$52,720 was raised from ten industry sponsors; see below for additional budget information

2) **Establish organizational infrastructure including communication and working groups**

The organizational structure consists of working groups charged with specific topic areas. Working group membership is open to anyone interested in working on the S3I. An open format ensures that all stakeholders have an equal chance at participation

S3I Coordinator: Stephen Sprigle, PhD, PT, Georgia Institute of Technology and NPUAP Board Member

S3I Fundraising Chair: Mary Jo Geyer, PhD, PT, University of Pittsburgh, NPUAP Board Member

S3I administrator: Laura Markusson, NPUAP National Office ([s3i@npuap.org](mailto:s3i@npuap.org))

## Working Group Structure and Leadership

### *Terms and Definitions*

Chair: Abbey Daniels, Sentech Medical; Vice-Chair: Margaret Goldberg, WOCN

### *Tissue Integrity*

Chair, David Brienza, PhD, University of Pittsburgh & NPUAP Board Member; Vice-chair: David McCausland, The Roho Group

### *Lifespan Evaluation*

Chair: Kathleen Baldwin, PhD, RN, Texas Christian University; Vice-chair: Lydia Biggie, Sentech Medical

Communication was recognized as an integral component of the S3I. Meetings were designed to be an important but not exclusive means of communication and participation. Additional communication options include:

- Electronic mailing list: [npuap-sss@majordomo.pitt.edu](mailto:npuap-sss@majordomo.pitt.edu)
- E-mail: [s3i@npuap.org](mailto:s3i@npuap.org)
- Website: [www.npuap.org](http://www.npuap.org)

Participants: Over 250 registered participants and 130 subscribers to the S3I list

### **3) Hold organizational meeting and working meetings**

Three meetings were organized and held:

New Orleans, January (prior to NPUAP Meeting)

Las Vegas, June (prior to Wound Ostomy Care Nursing Conference)

Atlanta, October (prior to Medtrade)

Meeting attendance: approximately 50 attendees per meeting

### **4) Establish scope of work**

All working groups have established scopes of work as detailed in their separate reports that are appended below.

## **PHASE II GOALS**

- 1) Raise resources for Phase II: industry solicitation; foundation and federal grant applications**
- 2) Hold two working meetings: Spring & Fall 2003**
- 3) Complete draft of terms and definitions document; disseminate world-wide and collect comments**
- 4) Establish draft test methods for Tissue Integrity and Lifespan variables; begin to test the test methods**

## **BUDGET INFORMATION**

Revenue	\$52,720	10 industry sponsors
Expenses	\$31,600	Travel/meeting: \$13,000 (NPUAP board members, \$500 stipend for non-industry clinicians/researchers); Administrative support: \$18,000 (0.4 FTE administrative assistant; Other: \$600 (conference calls, printing, etc.)

## ***TERMS AND DEFINITIONS***

### **2002 ANNUAL REPORT**

#### **Scope of Mission**

Develop standardized nomenclature, terms and definitions, in order ensure global consistency in the terminology surrounding support surface devices.

#### **Objectives**

- 1) Compile a listing of various terms to consider.
- 2) Group the terms into product categories.
- 3) Research the definitions that are currently used in the industry.
- 4) Propose definitions.
- 5) Solicit feedback from other S3I groups on the proposed definitions.
- 6) Complete definition.

#### **Accomplishments**

The group has completed objectives 1,2 and 3 and is in the process of completing objective 4. Objectives 4 and 5 will be completed in mid 2003.

#### **Considerations**

In reviewing various terms, it is clear that some terms are specific physical / engineering terms while others are terms that have been developed / evolved within the support surface industry. Those terms that have evolved within the support surface industry must be clearly defined and understood by all. It is possible that there are multiple terms with the same definition.

The group will propose whether to delete a term, combine multiple terms as the same meaning, or define it.

Terms or their definition do not imply clinical or therapeutic judgment. Terms and definitions are for the purpose of having a common language clearly understood by all.

The following terms are currently being discussed. To date, the group has a proposed definition for a majority of them. Those terms that the group is finding more challenging (such as low air loss, air floatation) will be finalized by the end of May, 2003.

## INITIAL TERMINOLOGY LIST

Full Frame Bed System  
Mattress  
Mattress Replacement  
Overlay  
Pad  
Pressure Reduction  
Pressure Relief  
Support Surface

Dry Pressure Mattress/Pad  
Elastic Foam  
Gel  
Viscous Fluid  
Viscoelastic Foam  
Water Pressure Mattress/Pad

Friction  
Immersion  
Percussion  
Pressure  
Pulsation  
Shear  
Vibration  
Bottoming Out

Fatigue  
Interface Pressure  
Isolibrium Factor  
Life Expectancy (Foam, General)  
Load Versus Deformation Curve

Mechanical Loading

Active  
Alternating Pressure  
Constant Force  
Constant Pressure  
Dynamic  
Kinetic  
Non-Powered  
Passive  
Powered  
Static  
Variable Load  
Variable Pressure

Air Fluidized  
Air Flootation  
Low Air Loss

# ***TISSUE INTEGRITY WORKING GROUP***

## **2002 Annual Report**

### **Scope of Mission**

To define test methods of support surface characteristics that affect tissue integrity. For the purposes of this effort, “test methods” are “standards, guidelines, or criteria for evaluating those support surface characteristics that affect tissue integrity.”

### **Objectives**

- 1) Define tissue integrity
- 2) Complete a literature review
- 3) Complete a draft of an Informative Annex
- 4) Identify variables of interest
- 5) Assign investigative task groups

### **Accomplishments**

- Definition of tissue integrity: Tissue integrity is the physiologic condition at which the skin and underlying tissues maintain function, structure and viability
- Definition of the strategy used for the literature review
- Compilation of the literature review in Endnote database
- Completed Informative Annex: “Relationship between the Patient and the Support Surface - Intrinsic and Extrinsic Factors”
- Identified variables of interest:
  - **Pressure** (interface, distribution, contact area, spatial gradient and weight support capacity)
  - Resistance to **envelopment** and bottoming (rate of increasing force with displacement; physical bottoming out, mechanical bottoming out)
  - **Friction** (coefficient of friction and localization)
  - **Shear** (externally applied, rate of change in pressure, sliding resistance)
  - **Environment/ Microclimate** (heat dissipation/transfer, moisture vapor transmission, temperature control)
- Task groups within TIG have been assigned to investigate and/or develop test methods related to each of the support surface characteristics listed above. The subgroups have met face-to-face at scheduled Working Group meetings and during several topic specific conference calls.
- A task group was formed to address the issue of mannequin and indenter design. Initial work has focused on existing designs and tissue simulation materials.

## ***LIFESPAN EVALUATION WORKING GROUP*** **2002 ANNUAL REPORT**

### **Scope of Mission**

The mission of the *Lifespan Evaluation* group is to specify test methods to assess whether support surface systems continue to perform as designed. It will apply to overlays, mattress replacement systems, and frame systems. This will address powered and non-powered technologies. It will also contain disclosure and labeling requirements.

### **Objective**

The objective of this working group is to identify key parameters and test methods to assess whether support surface systems continue to perform as designed.

### **Accomplishments to Date**

1. The group reviewed published literature related to its scope.
2. The group is in the process of identifying and collecting existing standards for the following areas and identifying gaps where testing should be conducted:
  - Life expectancy/fatigue/performance degradation/mode of failure
  - Measurement and construction
  - Fabric/covering performance and product protection
  - Information disclosure – product information sheet
  - Safety issues