

TIG Workgroup Meeting 06/01/02

Brought to order 11:00 by Dave McCausland (DMc)

Attendance:

David Brienza, Susan Dieter, Angie Doan, Laura Edsberg, Erik Flam, Rick Fontiane, Mary Jo Geyer, Joel Jusiak, Matt Kuklis, Charlie Lachenbruch, Dianne Mackey, Donna Matthews, David McCausland, Doug Munsey, Dave Parsons, Jeanne Perla, Sonia Ried, Geoff Taylor, Karen Zulkowski.

Agenda:

Modified (Temperature Control and Heat Dissipation combined) and approved:

Previous minutes were reviewed and approved.

Preamble:

Presented by Karen Zulkowski (KZ) as TIG006

Donna Mathews (DM) suggested including “time” components in the pressure definition. Group discussion on how better to define tissue integrity. Incorporated into the draft. Each point in the definitions of test methods of characteristics were discussed, modified and agreed upon.

The Preamble was agreed upon. Subject to ongoing revision as necessary to support tasks.

Informative Annex:

Presented by KZ as TIG 007

The value and purpose of the informative annex was discussed. Some elements included in the draft were discussed and changes made.

Informative annex draft accepted for further development

Mediating and Intervening variables that could affect measurements

Progress report offered by KZ.

No discussion, work in progress

Interface pressure, Spatial pressure gradient, and Contact area

Discussion led by Geoff Taylor (GT):

Measurability using available pressure mapping systems. +/- 10%. Distributions representative but weighing accuracy generally poor. Represents problems in comparison between device types and labs. An issue of sensor rigidity and accuracy.

Types of pressure distribution evaluators / measures:

- Peak Pressure. Least repeatable
- Average Pressure, more repeatable but not accurate
- Contact area, most repeatable doesn't tell much about hot spots
- Standard deviation
- # sensors in area by quartiles
- Pressure gradient and outcomes
- Cross section, kurtosis.

Challenge to develop a quantitative scale. Reported the need to use (a) manikin(s). Human tests subject to posture and positioning. Manikins and loading jigs representative of real world and made proportional would overcome variables.

At what weight is surface ineffective? States not necessary valid question. Failure is probably inverse weight dependent.

Manikin have to have anatomic relevance. Area and total volume consideration necessary.

Difficult to describe fixed surface geometry. Does not translate to variable geometry use.

Pressure over time was discussed. Alternating pressure and rotational beds and how they impacted by pressure over time, especially as regards to creep. Discussion lead to pressure sensors imbedded in manikin.

Stated that pressure mapping devices are accurate within specific testing regime, how not repeatable doing tests at different times.

Next steps:

1. Developing indicators (performance indices) that are repeatable that may be indicative of good support surfaces. Indicators that may be different between known "bad" surfaces, and "good" surfaces that will be used to show what indicators that are relevant.
2. Consider time relationships
3. Look at variability based on the components (load, mapping systems, surface in orders of magnitude) and ways to separate them.
4. Investigate pressure gradient.

Resistance to immersion

Presented by Dave Brienza (DB) as TIG005, a report of work done by Stephen Sprigle to quantify envelopment.

Discussion about what is important as envelopment. Concern that envelopment does not apply to all types of successful support surfaces, eg, alternating pressure. Discussion that different surface types will require different tests of why they work.

Envelopment was discussed as being a level of efficiency in conformation.

Immersion was discussed as the depth to which the load sinks. It was also pointed out that immersion and envelopment are not the same. The load immerses, but the surface envelops.

Proposal to do more work on documenting methodologies, and if reasonable, conduct some tests to determine if valid.

Will have to develop various indenters various types of measurements, external, internal to determine usability. Eric Flam (EF) will look into this.

In discussing the issues of pressure, it was agreed that a need existed to add an alternating pressure surfaces group. Charlie Lachenbruch (CL) will investigate the indices static and dynamic and link them to alternating pressure.

Shear and Friction

Co-efficient of friction testing presentation by Rick Fontaine (RF)

Existing BSI and ANSI textile tests were presented. Discussion focused on whether the fabric or the whole surface should be evaluated. Though no agreement was reached, the differences between and value of identifying both co-efficient of friction in the cover and shear within the support surface were made.

Shear Report

Conference call about literature. Differences in shear stress and shear strain were discussed. GT talked about tangential shear forces and measuring them using the VistaMed instrument. CL and EF will address these areas.

Temperature

Discussion on how heat affects body core temperature secondary to temperature transfer co-efficient.

GT referenced Duncan Bain's work. Steve Reiger's work was also discussed.

Session broke up and returned to whole group at 4:00 pm.