Mattress Replacement Project
Utilizing the S3I Principles

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Background

• Support Surface Standards Initiative (S3I)
  • Tasked with development of uniform terminology, test methods and reporting standards for support surfaces.
  • Official standards body for the United States
  • November 2014, published first testing protocols which repeatedly, reliably, & accurately report characteristics common to mattress & are associated with pressure injury formation
  • The protocols make it possible for hospitals to reliably compare certain characteristics of surfaces for the first time
Mattress Testing Protocols

   - Measures how deep a body can sink into a support surface

Call, 2017
   • Measures skin humidity and temperature at specific times

   • Measures resistances of surface to flows of heat and humidity from skin, evaporative capacity
Mattress Testing Protocols- Measuring Friction

4. Method A. Flat bed method
5. Method B. Inclined plane method
Why Not Pressure Mapping?

- Testing is not reliable - inconsistent in measuring what is intended to measure
- Results vary
  - Among each individual
  - Among different testing times
- The pressure mapping device changes the mattresses performance
Process

• Determine which mattresses to include
  • Enterprise use
    • General Care
    • ICU

• Send a request for information to the manufacturers asking them to provide the results to the testing protocols
  • Most major manufacturers participate in S3I
  • Provide a timeline for receiving the information
What is the Benefit of Having the Testing Results?

• Clinicians will have performance data presented in a consistent manner

• No evidence is yet available to associate a specific test value with any level of clinical outcomes, safety expectations, or indication of acceptability for any given purpose.

• S3I is aware of “clinician’s desire for tools to assess the appropriateness of a given surface in meeting a patient’s needs. The standards provide comparable performance data to aid in the selection process and should not be used in isolation.”

What to do with the Results?

• External surface consultant

• Shared patient population and nursing care information
  • Patient characteristics
  • Guidelines/protocols
  • Patient care products

• Results based on testing results, nursing care, and patient population characteristics

• Mattresses were ranked in comparison to one another

<table>
<thead>
<tr>
<th>Mattress</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
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<tbody>
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<td>General care</td>
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<tr>
<td>Temp Diff (°C)</td>
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<td>4</td>
<td>3</td>
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<tr>
<td>Max RH (%)</td>
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<tr>
<td>RH Diff (%)</td>
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<tr>
<td>EvapCap (gm^2/hr)</td>
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<tr>
<td>Q dry (W/m^2)</td>
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<tr>
<td>Immersion (mm)</td>
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<tr>
<td>Peak Temp (°C)</td>
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<tr>
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