A qualitative study on the effectiveness of a gliding mattress on aged patients with pressure ulcers

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Purpose

To assist healing process of pressure ulcer (PrUs) among the elderly residents in Long-Term Care Facilities, ultimately achieving greater Quality of Life and reduction of financial impact on the facilities and payer sources.
Main Objective

To evaluate the effectiveness of a non-powered new gliding mattress among Long-Term Care Facility residents with pressure ulcers.
# Background

## LTCF in Georgia (USA)

- **Capacity**: 122 beds
- **Average census**: 94%
- **Pressure ulcer (PrUs)**: 12% *(n=14)*
- **Nosocomial PrUs**: 6.6% *(n=8)*
## Subjects (*=2-year old chronic PrUs*)

<table>
<thead>
<tr>
<th>Group</th>
<th># of Patients</th>
<th>Age (Sex)</th>
<th>Initial Braden Scale</th>
<th>Stage (Site)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Study Group</strong></td>
<td>4</td>
<td>70 (f) 75(f) 77(f) 81(m)*</td>
<td>19 15 15 12</td>
<td>II (R. heel) I (buttocks) II (coccyx) IV (L. hip)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Average age 76</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Control Group</strong></td>
<td>4</td>
<td>48(f) 69(f) 82(f) 89(f)</td>
<td>11 20 15 22</td>
<td>IV (L. leg) II (R. heel) II (R. buttock) II (L. heel)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Average age 72</td>
<td></td>
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</tbody>
</table>
Invacare® Resolution gliding mattress
(variable positioning)

Flat Position

Visual Indicators: *Aligned*

Upright Position

Visual Indicators: *Shifted*
Invacare® Resolution gliding mattress
Treatment plus Advanced Shear Protection

Features
- Newly designed profiling slip layer mattress minimizes shear and friction
- Top layer stays with resident; bottom layer moves with bed
- Bottom layer has multiple articulation grooves to prevent “pop-up”
Method

- Study group (n=4) used non-powered gliding system mattress
- Control group (n=4) used non-powered pressure reducing foam mattress (3 layers)
- Testing period: Feb 1, 2007~March 30, 2007 (8 weeks)
Study Design

- Eight (8) elderly residents at LTCF were participants in the study.

- Formed two groups, study and control groups, and each group contained 4 patients with pressure ulcers.

- Wound care nurse performed an initial wound assessment, and she measured/observed all subjects every week and recorded.
Results (study group) “0” means healed
Results (Control group) "0" means healed
Results

- 3 of 4 subjects in study group were healed (stage I~II) within 6 weeks.
- 1 of 4 subjects in study group improved by 60% (stage IV) within 8 weeks (2-year chronic wound).
- 2 of 4 subjects in control group healed (stage II)
- 2 of 4 subjects in control group worsen (stage II)
- 2 of 4 subjects in control group acquired new wound
Outcome Summary

- 75% of residents on gliding mattress healed.
- 25% of residents on gliding mattress improved by 60%.
- 50% of residents on gliding mattress healed within 4 weeks.

- 50% of residents on regular foam mattress got worse.
  (170~200% worse than original wound)
- 50% of residents on regular foam mattress acquired new PrUs.
Financial Impacts

Gliding mattress could reduce the cost significantly while improving PrUs.

Gliding mattress purchase cost: $500

Renting cost (powered mattress): $26/day

Purchase cost (powered mattress and bed): US$ 2850~3250
Conclusions

- There was a positive outcome among gliding mattress users.
  - 75% of PrUs healed among study subjects and no one acquired new pressure ulcers in the group.

- Only 50% of PrUs healed among control subjects.
  - Two of control subjects acquired new pressure ulcer on regular foam mattress during the study.
Disclosures & Permission

- ICC/Invacare Corporation provided the facility with four Invacare Resolution gliding mattresses for this study.

- No one in this study group including the facility staff were financially compensated by ICC/Invacare Corporation.

- Braden Scale is used for the assessment and a written permission was granted by Dr. Barbara Braden.


INVACARE. Softform Premier Glide specifications. 2006, OH, USA.
