TITLE: Patient Lifts and Transfer Equipment for Preventing Pressure Ulcers: A Review of Clinical and Cost-Effectiveness and Guidelines

DATE: 19 March 2013

CONTEXT AND POLICY ISSUES

A pressure ulcer is an area of localized persistent injury to the skin that may include blisters, open wounds, or even necrosis, and which may extend to the underlying muscles and bones. Tissue damage typically occurs as a result of sustained loading on a particular body area, sometimes accompanied with shear and friction. If pressure is not relieved, the resulting oxygen deprivation negatively affects wound healing and is likely to cause further tissue destruction. Therefore, any condition preventing patients from repositioning themselves comes as a major risk factor contributing to the development of pressure ulcers.

Pressure ulcer prevention is a common health concern, whether in the context of acute intensive care units or long-term care setting. In Canada, it is estimated that the prevalence of pressure ulcers reaches 25% in acute care settings, and is close to 30% in non-acute care settings. In addition to negatively impacting patients’ quality of life, pressure ulcers may prolong hospital stay and are associated with an increased financial burden. Although various interventions have been suggested in the literature to prevent pressure ulcers, the most widely agreed upon appears to be reducing pressure via repositioning patients regularly; however, optimal frequency and methods for repositioning remain a source of debate.

This Rapid Response report aims to provide further information regarding the use of devices including various patient lifts and transfer equipment to reposition patients and therefore prevent pressure ulcers. This will inform decision-making regarding the optimization of ulcer prevention procedures in the intensive care unit.

RESEARCH QUESTIONS

1. What is the clinical effectiveness of patient lifts and transfer equipment for the prevention of pressure ulcers?
2. What is the cost-effectiveness of patient lifts and transfer equipment for the prevention of pressure ulcers?

3. What are the guidelines for the use of patient lifts and transfer equipment to prevent pressure ulcers?

**KEY FINDINGS**

There was no evidence in the literature searched pertaining to the clinical or cost-effectiveness of patient lifts and transfer equipment for the prevention of pressure ulcers. In addition, the various guidelines identified did not address in their recommendations the use of these turning devices to prevent pressure ulcers. Appendix 2 provides additional references pertaining to out-of-scope interventions, such as various turning regimens and multidisciplinary teams.

**METHODS**

**Literature Search Strategy**

A limited literature search was conducted on key resources including PubMed, CINAHL, The Cochrane Library (2013, Issue 1), University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. No filters were applied to limit the retrieval by study type. The search was limited to English language documents published between Jan 1, 2008 and Feb 19, 2013.

**Selection Criteria and Methods**

One reviewer screened the titles and abstracts of the retrieved publications and examined the full-text publications for the final article selection. Selection criteria are outlined in Table 1.

**Table 1: Selection Criteria**

<table>
<thead>
<tr>
<th>Population</th>
<th>Adult patients in the ICU at risk for pressure ulcers</th>
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<tbody>
<tr>
<td>Intervention</td>
<td>Turning devices (including sheets, lifts and mattresses)</td>
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<tr>
<td>Comparator</td>
<td>All lifting devices</td>
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<tr>
<td>Outcomes</td>
<td>Any outcomes related to the clinical effectiveness and clinical benefits of using turning devices to prevent pressure ulcers.</td>
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<td></td>
<td>Cost-effectiveness of using turning devices to prevent pressure ulcers.</td>
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<td></td>
<td>Guideline recommendations related to the use of turning devices in ulcer prevention.</td>
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<tr>
<td>Study Designs</td>
<td>Health technology assessments, Systematic reviews/Meta-analyses Randomized controlled trials Non-randomized studies Economic evaluations Guidelines</td>
</tr>
</tbody>
</table>
Exclusion Criteria

Articles were excluded if they did not meet the selection criteria in Table 1, if they were published prior to January 2008, if they were duplicate publications of the same study, or if they were referenced in a selected systematic review.

Critical Appraisal of Individual Studies

We elected to assess the quality of included systematic reviews using the Assessment of Multiple Systematic Reviews (AMSTAR) tool. For included randomized controlled studies, the assessment tool selected was the SIGN 50 checklist. We elected to assess the quality of the included non-randomized studies, and guidelines using Downs and Black, and AGREE checklists, respectively. We chose not to calculate a numeric score for each study, but to instead summarize and describe strengths and weaknesses of each study.

SUMMARY OF EVIDENCE

Quantity of Research Available

A total of 180 citations were identified in the literature search. Following screening titles and abstracts, 176 citations were excluded and 4 potentially relevant reports from the electronic search were retrieved for full-text review. Of the 4 potentially relevant reports, no publication met the inclusion criteria. As a result, no publication could be included in this review. Appendix 1 describes the PRISMA flowchart of the study selection for this review.

The interventions evaluated in this rapid response report were patient lifts and transfer equipment for preventing pressure ulcers, also referred to as turning devices. However, several references were found in the literature search pertaining to out-of-scope interventions that might still provide additional and relevant information, such as implementation of various turning regimens and multidisciplinary skin expert teams or turning teams. These additional references of potential interest are provided in Appendix 2.

CONCLUSIONS AND IMPLICATIONS FOR DECISION OR POLICY MAKING

There was no evidence in the literature searched pertaining to the clinical or cost-effectiveness of patient lifts and transfer equipment for the prevention of pressure ulcers. In addition, the various guidelines identified did not address in their recommendations the use of these turning devices to prevent pressure ulcers. Therefore, these findings are insufficient to inform decision-making with regard to the optimization of ulcer prevention procedures in various healthcare settings such as the intensive care unit. However, additional references pertaining to out-of-scope interventions such as implementation of various turning regimens and multidisciplinary teams are provided in the appendix. Despite the fact that these were not relevant to this particular review report, they may still prove useful in addressing the common healthcare concern of pressure ulcer prevention.

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REFERENCES


APPENDIX 1: Selection of Included Studies

180 citations identified from electronic literature search and screened

176 citations excluded

4 potentially relevant articles retrieved for scrutiny (full text, if available)

0 potentially relevant reports retrieved from other sources (grey literature, hand search)

4 potentially relevant reports

4 reports excluded:
- irrelevant intervention (4)

No reports included in review
APPENDIX 2: Other References Pertaining to Excluded Method of Interventions – Non Device-Related Interventions

The interventions evaluated in this rapid response report were patient lifts and transfer equipment for preventing pressure ulcers, also referred to as turning devices. However, several references were found in the literature search pertaining to out-of-scope interventions that might still provide additional and relevant information, such as implementation of various turning regimens and multidisciplinary skin expert teams or turning teams. These references, although not included in the report as per the pre-specified protocol, are listed here in appendix.

Health technology assessments, Systematic reviews / Meta-analyses


Randomized controlled trials


Non-systematic reviews


**Non-randomized studies**


**Guidelines**
