Pelvic Binders for Patients with Suspected Fracture in the Pre-Hospital Setting: Clinical Effectiveness and Guidelines
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Questions or requests for information about this report can be directed to requests@cadth.ca
Research Questions

1. What is the clinical effectiveness of pelvic binders for patients with suspected pelvic fractures in pre-hospital settings?
2. What are the evidence based guidelines regarding care of patients with suspected pelvic fractures in pre-hospital settings?

Key Findings

Four evidence-based guidelines were identified regarding the care of patients with suspected pelvic fracture in pre-hospital settings. No relevant clinical evidence was identified regarding the use of pelvic binders for patients with suspected pelvic fractures in pre-hospital settings.

Methods

This report makes use of a literature search strategy developed for a previous CADTH report. For the current report, a limited literature search was conducted by an information specialist on key resources including Medline via OVID, the Cochrane Library, the University of York Centre for Reviews and Dissemination (CRD) databases, the websites of Canadian and major international health technology agencies, as well as a focused Internet search. The search strategy was comprised of both controlled vocabulary, such as the National Library of Medicine’s MeSH (Medical Subject Headings), and keywords. The main search concepts were pelvic binders and suspected pelvic fractures. No filters were applied to limit the retrieval by study type. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2014 and July 2, 2019. Internet links were provided, where available.

Selection Criteria

One reviewer screened citations and selected studies based on the inclusion criteria presented in Table 1.

<table>
<thead>
<tr>
<th>Table 1: Selection Criteria</th>
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<tr>
<td><strong>Population</strong></td>
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<tr>
<td>Patients with suspected pelvic fractures (injury and pain related to pelvic fracture i.e. motor cycle injuries, falls etc.) in a pre-hospital setting</td>
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<td>Sub group:</td>
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<td>• Multi-system trauma</td>
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<td><strong>Intervention</strong></td>
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<td>Q1-Q2: Pelvic binders (also known as a pelvic sling, pelvic immobilization, pelvic circumferential compression devices)</td>
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### Comparator

<table>
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<th>Q1: Pelvic sheets</th>
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<tr>
<td>First aid (regular, advanced or wilderness):</td>
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<tr>
<td>Other non-manufactured devices for immobilization:</td>
</tr>
<tr>
<td>No comparator</td>
</tr>
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| Q2: Not applicable |

### Outcomes

| Q1: Clinical effectiveness (e.g., pain, vital signs, patient comfort, patient satisfaction) |
| Q2: Evidence-based guidelines |

### Study Designs

Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, and evidence-based guidelines

### Results

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by randomized controlled trials, non-randomized studies, and evidence-based guidelines.

Four evidence-based guidelines were identified regarding the care of patients with suspected pelvic fracture in pre-hospital settings. No relevant health technology assessments, systematic reviews, meta-analyses, randomized controlled trials or non-randomized studies were identified regarding the use of pelvic binders for patients with suspected pelvic fractures in pre-hospital settings.

Additional references of potential interest are provided in the appendix.

### Overall Summary of Findings

Guidelines from the French Society of Anaesthesia and Intensive Care Medicine recommend that all patients with suspected severe pelvic trauma in the pre-hospital setting receive external pelvic compression, namely pelvic binders, as soon as possible. The guideline also recommends placement of pelvic binders around the greater trochanters for optimal efficiency.

Guidelines from the World Society of Emergency Surgery (WSES) also recommend early application of non-invasive external pelvic compression for unstable pelvic fracture and specifies pelvic binders as a superior method of hemorrhage control compared to sheet wrapping. Moreover, the guideline states that commercial pelvic binders are more effective in controlling pelvic bleeding than “home-made” or makeshift ones. However, in low resources setting or when commercial devices are not available, “home-made” pelvic binders can be used safely and effectively.

Guidelines from the National Institute of Health Care Excellence (NICE) recommend that if active bleeding is suspected from a pelvic fracture after high-energy blunt trauma in pre-hospital settings to apply a commercially-made pelvic binder or consider an improvised pelvic binder, but only if commercial devices do not fit.

The London Faculty of Pre-Hospital Care (FPHC) also recommends early and liberal application of pelvic binders for high energy blunt trauma.
References Summarized

Health Technology Assessments
No literature identified.

Systematic Reviews and Meta-analyses
No literature identified.

Randomized Controlled Trials
No literature identified.

Non-Randomized Studies
No literature identified.

Guidelines and Recommendations

   See: 3.3. When and how should pelvic stabilisation be performed in the prehospital setting, R3b

   PubMed: PM28115984  
   See: Role of pelvic binder in hemodynamically unstable pelvic fractures

   See: 1.5.3 Pelvic binders in pre-hospital settings

   PubMed: PM28285493  
   See: Who should receive a pelvic binder, page 136-137
Appendix — Further Information

Previous CADTH Reports


Systematic Reviews – Setting Unspecified


Non-Randomized Studies

Hospital Setting


Guidelines and Recommendations – Methods Unspecified


Review Articles