Syringe and Mini Bag Smart Infusion Pumps for Intravenous Therapy in Acute Settings: Clinical Effectiveness, Cost-Effectiveness, and Guidelines
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Acknowledgments:

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About CADTH: CADTH is an independent, not-for-profit organization responsible for providing Canada’s health care decision-makers with objective evidence to help make informed decisions about the optimal use of drugs, medical devices, diagnostics, and procedures in our health care system.
Research Questions

1. What is the comparative clinical effectiveness between smart infusion syringe pumps and smart infusion mini bag pumps in patients requiring intravenous therapy in acute care settings?

2. What is the comparative cost-effectiveness between smart infusion syringe pumps and smart infusion mini bag pumps in patients requiring intravenous therapy in acute care settings?

3. What are the evidence-based guidelines associated with the use of smart infusion pumps in patients requiring intravenous therapy in acute care settings?

Key Findings

No relevant comparative literature was identified regarding syringe and mini bag smart infusion pumps for IV therapy in acute settings. In addition, no evidence-based guidelines were identified.

Methods

A limited literature search was conducted on key resources including PubMed, The Cochrane Library, 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, 2012 and Jun 14, 2017. Internet links were provided, where available.

Selection Criteria

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

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<th>Table 1: Selection Criteria</th>
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<td><strong>Population</strong></td>
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<td><strong>Intervention</strong></td>
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| **Comparator**              | Q1-2: Smart infusion pump- mini bag (also termed large volume infusion pumps)  
Q3: No comparator |
| **Outcomes**                | Q1: Comparative clinical effectiveness (e.g., but not limited, reducing medication errors, improved patient satisfaction, etc.), safety (e.g., but not limited to, medication errors, harms associated with the different types of infusion, etc.)  
Q2: Comparative cost-effectiveness  
Q3: Guidelines (e.g., which device is there more supporting for, infusion standards, infusion practices, etc.) |
| **Study Designs**           | Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, economic evaluations, evidence-based guidelines |
Results

No comparative health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, or economic evaluations were identified regarding syringe and mini bag smart infusion pumps for IV therapy in acute settings. In addition, no evidence-based guidelines were identified.

References of potential interest are provided in the appendix.

Overall Summary of Findings

No relevant comparative literature or evidence-based guidelines were identified regarding syringe and mini bag smart infusion pumps for IV therapy in acute settings, therefore, no summary can be provided.

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.

Economic Evaluations
No literature identified.

Guidelines and Recommendations
No literature identified
Appendix — Further Information

Clinical Practice Guidelines – Uncertain Methodology

   See: Delivery Methods, pages 18-19

   See: Information provided on a Drug Library, pages 6, 9, 45, 48, 52
   Information on “smart pumps” throughout

Review Articles

   PubMed: PM27803509