TITLE: Infusion Pumps in the Home Care Setting: Clinical Effectiveness and Guidelines

DATE: 19 July 2016

RESEARCH QUESTIONS

1. What is the clinical effectiveness of syringe infusion pumps for intravenous delivery of medication in the home care setting?

2. What are the evidence-based guidelines for the use of infusion pumps in the home care setting?

KEY FINDINGS

One evidence-based guideline was identified regarding the use of intrathecal baclofen administered via continuous pump for children and adolescents with spasticity.

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 methodological filters were applied to limit 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, 2011 and July 12, 2016. Internet links were provided, where available.

The summary of findings was prepared from the abstracts of the relevant information. Please note that data contained in abstracts may not always be an accurate reflection of the data contained within the full article.

SELECTION CRITERIA

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

<table>
<thead>
<tr>
<th>Population</th>
<th>Patients (any age) requiring self-administration of intravenous medication in the home care setting</th>
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| Intervention | Q1: Syringe infusion pumps  
Q2: Any type of infusion pump |
| Comparator | Q1: Other types of infusion pumps, including smart pumps and infusion pumps that can accommodate bags or syringes (e.g., Sapphire pump)  
Q2: No comparator necessary |
| Outcomes | Q1: Benefits and harms (e.g., ease of use for patients, medication administration errors, compliance, adverse events)  
Q2: Evidence-based guidelines for use by patients in the home |
| Study Designs | Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, 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.

One evidence-based guideline was identified regarding the use of intrathecal baclofen administered via continuous pump for children and adolescents with spasticity. No relevant health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, or non-randomized studies were identified.

Additional references of potential interest are provided in the appendix.

OVERALL SUMMARY OF FINDINGS

The relevant guideline from the National Institute for Health and Care Excellence\(^1\) is about the treatment of spasticity in persons younger than 19 years of age. In this patient population, continuous pump administered intrathecal baclofen may be used. The guideline recommends that patients and their caregivers be given instruction about proper pump maintenance, associated risks with the pump, the requirement for regular hospital visits and consultation with a care team, and associated risks with stopping treatment.\(^1\)
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: 1.6.7, page 30
   Continuous pump-administered intrathecal baclofen, pages 32 to 33

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APPENDIX – FURTHER INFORMATION:

Non-Randomized Studies

Alternate Setting

PubMed: PM21378693

Qualitative Studies

PubMed: PM25256259

PubMed: PM24526788

Clinical Practice Guidelines – Uncertain Methodology

PubMed: PM24481158

Review Articles

PubMed: PM25715160

PubMed: PM26734288

PubMed: PM24675536

PubMed: PM24577209
Additional References

Manufacturer Guidance