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CADTH RAPID RESPONSE REPORT: SUMMARY OF ABSTRACTS

Multi-Channel Infusion Pumps in a Hospital Setting: Guidelines

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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.

Funding: CADTH receives funding from Canada's federal, provincial, and territorial governments, with the exception of Quebec.

Questions or requests for information about this report can be directed to **requests@cadth.ca**

Research Questions

1. What are the evidence-based guidelines regarding the use of large multi-channel infusion pumps in a hospital setting?
2. What are the evidence-based guidelines regarding requirements for large volume infusion pumps in a hospital setting?

Key Findings

No relevant health technology assessments, systematic reviews, or evidence-based guidelines were found regarding the use of or requirements for large multi-channel infusion pumps in a hospital setting.

Methods

A limited literature search was conducted by an information specialist on key resources including PubMed, 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 infusion pumps and intravenous infusions, and multi-channel or multi-line or large volume sets. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2010 and February 3, 2020. 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 1: Selection Criteria

Population	Patients in the following hospital settings/departments: - Emergency departments - Child Health/Pediatrics department - Women's health department - Intensive Care Unit - Surgical Care or Operating Room

Intervention	Large multi-channel infusion pump (i.e., > 50ml of medication administered intravenously through a higher rate)
Comparator	Single channel infusion pump (i.e., only has one channel in the pump to administer medication intravenously to the patient); not applicable
Outcomes	Q1: Recommendations regarding the use of large multi-channel infusions pumps (i.e., which patient populations and care areas are these pumps recommendation) Q2: Recommendations regarding the selection or process for large volume multi-infusion pumps versus single channel infusion pump
Study Designs	Health technology assessments, systematic reviews, and evidence-based guidelines

Results

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

No relevant health technology assessments, systematic reviews, or evidence-based guidelines were found regarding the use of or requirements for large multi-channel infusion pumps in a hospital setting.

References of potential interest are provided in the appendix.

Overall Summary of Findings

No relevant health technology assessments, systematic reviews, or evidence-based guidelines were found regarding the use of or requirements for large multi-channel infusion pumps in a hospital setting; therefore no summary can be provided.

References Summarized

Health Technology Assessments

No literature identified.

Systematic Reviews and Meta-analyses

No literature identified.

Guidelines and Recommendations

No literature identified.

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Appendix — Further Information

Review Article

1. Kim UR, Peterfreund RA, Lovich MA. Drug infusion systems: technologies, performance, and pitfalls. *Anesth Aanalg*. 2017 May;124(5):1493-1505. PubMed: PM28212219