

CADTH RAPID RESPONSE REPORT: REFERENCE LIST

Standardized Insulin Order Sets for Insulin-Dependent Diabetic Adults in the Community Setting: Clinical Evidence and 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.

Research Questions

1. What is the clinical evidence for standardized insulin order sets for diabetic adults who are dependent on insulin in the community setting?
2. What are the evidence-based guidelines for standardized insulin order sets for diabetic adults who are dependent on insulin in the community setting?

Key Findings

No relevant clinical evidence or evidence-based guidelines were identified regarding standardized insulin order sets for insulin-dependent diabetic adults in the community setting.

Methods

A limited literature search was conducted by an information specialist on key resources including Medline via OVID, CINAHL via EBSCO, 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. 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 insulin and standardized order sets. 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 May 8, 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 1: Selection Criteria

Population	Insulin-dependent diabetic adults in a community setting
Intervention	Standardized insulin order sets using any insulin type
Comparator	Q1: Standard of care, other insulin order Q2: No comparator
Outcomes	Q1: Clinical benefit or harm Q2: Guidelines
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.

No relevant health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, or evidence-based guidelines were identified regarding standardized insulin order sets for insulin-dependent diabetic adults in the community setting.

References of potential interest are provided in the appendix.

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

No literature identified.

Appendix — Further Information

Non-Randomized Studies

Hospital Setting

1. Rushakoff RJ, Rushakoff JA, Kornberg Z, MacMaster HW, Shah AD. Remote monitoring and consultation of inpatient populations with diabetes. *Curr Diab Rep.* 2017;17(9):70.
[PubMed: PM28726156](#)
2. Wong B, Mamdani MM, Yu CH. Computerized insulin order sets and glycemic control in hospitalized patients. *Am J Med.* 2017;130(3):366.e361-366.e366.
[PubMed: PM27818228](#)
3. Sinha Gregory N, Seley JJ, Gerber LM, Tang C, Brillon D. Decreased rates of hypoglycemia following implementation of a comprehensive computerized insulin order set and titration algorithm in the inpatient setting. *Hosp Pract (Minneap).* 2016;44(5):260-265.
[PubMed: PM27805455](#)
4. Bedra M, Hill Golder S, Cha E, Jeong IC, Finkelstein J. Computerized insulin order sets can lead to unanticipated consequences. *Stud Health Technol Inform.* 2015;213:53-56.
[PubMed: PM26152951](#)
5. Mulla CM, Lieb DC, McFarland R, Aloji JA. Tides of change: improving glucometrics in a large multihospital health care system. *J Diabetes Sci Technol.* 2015;9(3):602-608.
[PubMed: PM25519292](#)
6. Valgardson JD, Merino M, Redgrave J, Hudson JI, Hudson MS. Effectiveness of inpatient insulin order sets using human insulins in noncritically ill patients in a rural hospital. *Endocr Pract.* 2015;21(7):794-806.
[PubMed: PM26121450](#)

Setting Unspecified

7. Citty SW, Zumberg L, Chappell J. Improving insulin administration through redesigning processes of care: a multidisciplinary team approach. *J Patient Saf.* 2017;13(3):122-128.
[PubMed: PM25119787](#)
8. Donsa K, Beck P, Plank J, et al. A toolbox to improve algorithms for insulin-dosing decision support. *Appl Clin Inform.* 2014;5(2):548-556.
[PubMed: PM25024768](#)

Review Articles

9. Kulasa K, Juang P. How low can you go? Reducing rates of hypoglycemia in the non-critical care hospital setting. *Curr Diab Rep.* 2017;17(9):74.
[PubMed: PM28755062](#)

10. O'Connor PJ, Sperl-Hillen JM, Fazio CJ, Averbeck BM, Rank BH, Margolis KL. Outpatient diabetes clinical decision support: current status and future directions. *Diabet Med*. 2016;33(6):734-741.
[PubMed: PM27194173](#)

Examples of Order Sets

11. Brant Community Healthcare System. Order set for adjustment of insulin. 2017; [https://www.hamiltonfht.ca/Modules/DocuShare/Services/DocuShare.ashx?method=GetFile&args\[file\]\[authToken\]=&args\[file\]\[path\]=File-85777&args\[file\]\[filename\]=DM-BCHS-Order%20Set%20for%20Adjustment%20of%20Insulin.pdf](https://www.hamiltonfht.ca/Modules/DocuShare/Services/DocuShare.ashx?method=GetFile&args[file][authToken]=&args[file][path]=File-85777&args[file][filename]=DM-BCHS-Order%20Set%20for%20Adjustment%20of%20Insulin.pdf). Accessed 2019 May 10.
12. Vancouver Coastal Health. Insulin subcutaneous: basal, nutritional & correction orders. 2016; <https://www.patientsafetyinstitute.ca/en/toolsResources/Presentations/2016-Calls/Documents/2016-06-03%20-%20SSI%20-%20BCPSQC/Insulin%20SC%20Basal%20Nutritional%20and%20Correction%20for%20patients%20who%20are%20eating.pdf>. Accessed 2019 May 10.
13. Grey Bruce Health Network. Subcutaneous insulin order set. 2012; https://www.ismp-canada.org/download/insulin/GreyBruce_Insulin_OrderSet.pdf. Accessed 2019 May 10.