Ontario
CRITICAL Incident Learning
Improving quality in patient safety

Issue 5
August 2013

Distributed to:

- Chief executive officers
- Chiefs of staff
- Board chairs
- Quality/patient safety leads
- Directors of pharmacy

Suggested action items:

- Circulate bulletin to front-line staff and physicians
- Refer bulletin to clinical leaders and committees to encourage utilization of ISMP Canada insulin resources and development of safe insulin-use protocols
- Review your facility's existing procedures for insulin management in relation to the practices outlined in ISMP Canada insulin resources

Promoting the Safe Use of Insulin in Hospitals

Insulin is a high-alert medication[1] that continues to be one of the top drugs involved in incidents associated with harm or death that are voluntarily reported to ISMP Canada.[2] Efforts to reduce the potential for harm with this drug have resulted in numerous recommendations on best practices for improving the safety of insulin use in hospitals.[3-5] These strategies touch on all aspects of insulin use throughout the medication-use process. Although many of these interventions have been adopted by hospitals, harmful incidents involving insulin continue to occur.

ISMP Canada undertook a knowledge translation[6] project to identify effective, evidenced-based interventions and to develop tools to support Ontario hospitals in ensuring safe insulin use, with the overall goal of decreasing potential patient harm. As part of this project, ISMP Canada convened an expert panel to select 2 key insulin-use interventions and then asked expert working groups to develop specific guidelines and templates to support the selected key interventions.

Call to Action for Hospitals

1. Develop and implement a diabetes management record:
- Create a record where all relevant aspects of a patient's glycemic management can be documented to facilitate decision-making with regard to insulin therapy.
- Information to be documented in this record includes results of blood glucose testing, details of every insulin dose administered, nutritional status, occurrence of hypoglycemic episodes, and other factors that may affect blood glucose.

2. Use standard order sets for subcutaneous insulin therapy:
- Develop organization-wide, evidence-based standards and standardized terminology for ordering subcutaneous insulin.
- Develop recommendations for prescribing and monitoring subcutaneous insulin.
- Discourage the use of sliding-scale insulin alone.
- Promote the use of scheduled basal and bolus insulin doses, as well as appropriate correction doses.

The tools developed for this project, available from www.ismp-canada.org/insulin, include a report on the knowledge translation of insulin-use interventions, a template for a diabetes management record, and guidelines for developing order sets for subcutaneous insulin, as well as templates for such order sets. The guidelines and templates that were developed can be customized for use in community or academic hospitals and can be used with both paper-based and electronic systems and processes. These tools and other resources are available for hospitals to use and adapt to meet their own requirements.

ISMP Canada
www.ismp-canada.org
1-866-544-7672
info@ismp-canada.org

Project Overview

The knowledge translation project was accomplished through multiple steps:

- A literature search was performed to identify published recommendations for the safe use of insulin.
- A survey was developed and disseminated to capture current insulin-use safety strategies and potential deficiencies in Ontario hospitals.
- The safeguards and strategies identified through both the literature search and the survey were reviewed, and interventions were retained for further consideration only if they were deemed to be highly effective and measurable.
- These interventions were then categorized by the stage of the medication-use process where they would be applicable and presented to an expert panel.
- The expert panel assessed each intervention according to the hierarchy of effectiveness,[7] feasibility of implementation, and measurability of impact and selected 2 interventions.
- Working groups of nurses, physicians, and pharmacists were established to assist in development of guidelines and templates for the 2 selected interventions.
- The working groups reviewed existing diabetes management records and order sets for subcutaneous insulin already in use in selected hospitals in Ontario, along with resources from Australia[8] and the United States.[3,4,9]
- The guidelines and templates were subjected to a series of revisions before consensus was reached on their key components, their perceived ability to facilitate appropriate treatment decisions, and a user-friendly layout.

Good glycemic control through the use of insulin has important health benefits for individuals with diabetes, but strategies are needed to reduce the potential for preventable harm associated with this drug. Individual practitioners and administrators in Ontario healthcare facilities are encouraged to review insulin management processes within their own organizations and to use the resources provided by ISMP Canada to support safe and effective care.

Content reviewed by:

William Cornish, RPh, BScPhm, ACPR, Supervisor, Drug Information, Department of Pharmacy, Sunnybrook Health Sciences Centre

Robyn Houlden, MD, FRCPC, Professor, Division of Endocrinology, Queen's University and Kingston General Hospital

[1] ISMP's list of high-alert medications. Horsham (PA): Institute for Safe Medication Practices (ISMP); 2012 [cited 2013 Jul 17]. Available from: https://www.ismp.org/tools/institutionalhighAlert.asp

[2] Top 10 drugs reported as causing harm through medication error. ISMP Can Saf Bull. 2006 [cited 2013 Jul 17];6(1):1-2. Available from: http://www.ismp-canada.org/download/safetyBulletins/ISMPCSB2006-01Top10.pdf

[3] American Society of Health-System Pharmacists; Hospital and Health-System Association of Pennsylvania. Professional practice recommendations for safe use of insulin in hospitals. Bethesda (MD): American Society of Health-System Pharmacists, Section of Inpatient Care Practitioners; [cited 2013 Jul 17]. Available from: http://www.ashp.org/s_ashp/docs/files/Safe_Use_of_Insulin.pdf

[4] Sentinel event alert, issue 11. High-alert medications and patient safety. Oakbrook Terrace (IL): Joint Commission on Accreditation of Healthcare Organizations; 1999 [cited 2013 Aug 12]. Available from: http://www.jointcommission.org/sentinel_event_alert_issue_11_high-alert_medications_and_patient_safety/

[5] Insulin errors. ISMP Can Saf Bull. 2003 [cited 2013 Jul 17];3(4):1-2. Available from: https://www.ismp-canada.org/download/safetyBulletins/ISMPCSB2003-04Insulin.pdf

[6] Importance of knowledge translation in enabling medication safety. ISMP Can Saf Bull. 2010 [cited 2013 Jul 29];10(3):1-3. Available from: https://www.ismp-canada.org/download/safetyBulletins/ISMPCSB2010-03-KnowledgeTranslation.pdf

[7] Medication error prevention "toolbox". ISMP Med Saf Alert. 1999 Jun;4(11):1-2.

[8] National inpatient medication chart (subcutaneous insulin). Darlinghurst (Australia): Australian Commission on Safety and Quality in Health Care; [cited 2013 Jul 17]. Available from: http://www.safetyandquality.gov.au/our-work/medication-safety/medication-chart/national-subcutaneous-insulin-chart/

[9] Glycemic control resource room. Philadelphia (PA): Society of Hospital Medicine [cited 2013 Jul 17]. Available from: http://www.hospitalmedicine.org/ResourceRoomRedesign/GlycemicControl.cfm

Collaborating parties of the Ontario Critical Incident Reporting program

Canadian Institute for Health Information / Institut canadien d'information sur la santé (CIHI ICIS) · Ontario · Ontario Hospital Association (OHA) · ISMP Canada