

Medication Safety Alerts

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This column draws on US and Canadian experience and may include, with permission, material from the *ISMP Medication Safety Alert!*, a biweekly bulletin published by the Institute for Safe Medication Practices (ISMP), Huntingdon Valley, Pennsylvania.

NARCOTIC (OPIOID) SAFETY: AN ISMP CANADA MEDICATION SAFETY SUPPORT SERVICE PROJECT

At an Institute for Safe Medication Practices Canada (ISMP Canada) conference held in July 2003, narcotic (opioid) safety was identified as a top concern by attending hospitals. Safeguards such as unit-dose drug distribution, order verification by pharmacy before administration, and preparation of patient-specific doses, which are implemented for the dispensing of other categories of drugs, are often not in place for narcotic medications. It is well recognized that “narcotic doses are usually identified, prepared, and administered by a single nurse, with no redundant safety checks performed.”¹ In addition, the increased focus in hospitals on best practices for pain management (e.g., pain assessment scales, referred to as the fifth vital sign) emphasizes the need for medication safety enhancements of narcotic systems to optimize the quality of care delivered.

The designation of narcotics as a priority focus for ISMP Canada gained further impetus from various other sources:

- Several serious, high-profile events were associated with narcotics.^{2,4}
- In a review of 32 medication error-related deaths investigated between 1999 and 2003, the Office of the Chief Coroner of Ontario found that 44% involved narcotic medications.*

- An in-depth event analysis of a fatal narcotic error in 2004 identified system weaknesses common to many hospitals.⁴
- In 2002 and 2003, 416 medication incidents involving narcotics were reported to ISMP Canada by hospitals that participated in a research project (Marshman JA, U DK, Lam RWK, Hyland S. Medication error events in acute care hospitals in Ontario. Manuscript in preparation).
- Over a 1-year period (July 2002 to June 2003), US Pharmacopeia MedMarx data showed that 5 narcotic medications were among the top 50 drugs associated with medication errors.⁵
- A review of the US newsletter *ISMP Medication Safety Alert!* for 1996 to 2004 revealed that narcotic-related incidents were frequently highlighted.
- Additional literature review substantiated narcotics as a priority focus.⁶⁻¹²

The initial phase of the narcotics project began in early 2004, after 75% of Ontario hospitals completed a survey designed to examine the extent to which medication safety-related best practices and system safeguards for narcotic distribution and administration were in place. The results indicated that many opportunities exist for the implementation of strategies to enhance narcotic safety.

During the development phase, recommendations for improving narcotic medication system safety were developed in collaboration with Ontario hospitals and through consultations with patient safety, pain management, and anesthesia experts. Assistance from a human factors engineer provided additional perspective on identifying the complexity and variability of existing medication-use systems and the extent to which current

*J. Greenall, ISMP Canada. Personal communication, September 15, 2004.



narcotic administration systems can cognitively overload front-line practitioners. Strategies and information from the medication safety literature and other high-risk industries were applied to recommendations for narcotic system safeguards. The focus was on the development of short-term, reachable goals that did not require hospitals to incur capital expenditures, yet that could enhance system safety and readiness for future computerization and automation.

The recommendations were built on the following principles (in rank order):

- Reducing errors
- Making errors visible
- Mitigating harm from errors when they occur

In addition, recommendations were developed with the objective of using multiple high-leverage strategies¹³ and bedrock human factors principles such as the following:

- Constraints and forcing functions
- Simplification (reduce steps and interfaces)
- Standardization of processes and procedures
- Checklists and other strategies to reduce cognitive load on practitioners

The project that ISMP Canada is now leading in Ontario includes a list of priority recommendations (Table 1). These recommendations are supported by a detailed resource binder, workshops, telemedicine presentations, meetings with the professional colleges (for nurses, pharmacists, and physicians), communications with hospital CEOs, and dissemination of resources (many of which were developed within and shared by Ontario hospitals) in an effort to assist hospitals in implementing the recommendations.

Narcotics is the second Medication Safety Support Service (MSSS) initiative developed by ISMP Canada (see box). It follows the successful potassium chloride project, in which workshops and supporting materials developed collaboratively and provided by ISMP Canada assisted Ontario hospitals to reduce the number of patient care areas storing KCl concentrate from 62% to 26% in 2003. An independent national survey¹⁴ has since identified Ontario as having the highest Canadian success rate in restricting the storage of concentrated KCl in hospitals. This first MSSS project continues to generate interest from hospitals across Canada.

Similar opportunities to implement system changes to prevent error-induced injury with narcotics or KCl are available to other provinces through workshops, resources, and implementation tools. For further information on the Medication Safety Support Service Project, please visit www.ismp-canada.org/msss.htm or contact ISMP Canada by email (info@ismp-canada.org).

Table 1. Priority Recommendations of the Institute for Safe Medication Practices Canada Narcotics (Opioids) Project*

<p>Culture and communication Educate staff about the system-based causes of medication error. Educate staff about the hierarchy of effectiveness of error reduction strategies. Include the patient/family in the narcotic medication-use process.</p>
<p>Storage and standardization Remove the following stock items from patient care areas: • Hydromorphone ampoules or vials with concentration greater than 2 mg/mL (exceptions may include palliative care). • Morphine ampoules or vials with concentration greater than 15 mg/mL. • Morphine ampoules or vials greater than 2 mg/mL in pediatric patient care areas. • Sufentanil (exceptions may include operating room and labour and delivery). Assess risk associated with holding narcotic stock in patient care areas. Restrict as much as possible the admixing of narcotic solutions outside the pharmacy. Standardize infusion concentrations of parenteral narcotic medications and selection of medications for pain management.</p>
<p>Independent double-check Implement a policy of independent double-checks for patient-controlled analgesia infusions. The policy should include a clear process for an independent double-check and documentation when the following occur: • Initial pump programming • Changes in pump programming • Solution changes • Patient transfers Consider a policy of independent double-checks for: • All opioid infusions (continuous or intermittent) • Epidural infusions</p>
<p>Patient-controlled and epidural analgesia For patient-controlled analgesia, develop and follow patient selection criteria (inclusion and exclusion). For epidural infusions, identify and implement multiple error prevention strategies to enhance differentiation of epidural infusions from other infusions.</p>

*These recommendations are also available on the ISMP Canada Web site: http://www.ismp-canada.org/download/Priority_Recommendations_Ontario_Narcotic_Collaborative_Feb_2005.pdf

What is the Medication Safety Support Service?

The Medication Safety Support Service (MSSS) is Canada's first province-wide medication safety support service for health care organizations. It is a joint initiative of the Institute for Safe Medication Practices Canada, the Ontario Ministry of Health and Long-Term Care, and the Ontario Hospital Association. The MSSS is supported by the Ontario Ministry of Health and Long-Term Care through its commitment to assist Ontario hospitals in safely managing the use of high-alert medications.¹

[References on page 164]



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