

## Hospitals report on medication safety in Canada

By Julie Greenall, BScPhm, MHSc (Bioethics), Patricia Lefebvre, BPharm, MSc, FCSHP, Sylvia Hyland, BScPhm, MHSc (Bioethics), and Bonnie Salsman

### Abstract

*Measurement of safety can be difficult. Given that incident reporting systems rely primarily on voluntary reporting and some types of medication incidents may occur rarely, lack of reports about a particular type of incident cannot be interpreted as evidence that the underlying causes are resolved. Proxy measurements, such as the level of implementation of evidence-based practices known to reduce the risk of a particular incident, may provide an indication of progress toward safer systems. This article includes an overview of some proxy measurements influencing medication use systems in patient care areas, including critical care, as reported in the biennial **Hospital Pharmacy in Canada** survey.*

Over the past decade, patient safety has become a strategic priority for all health care sectors. One important component of patient safety is medication safety. Practitioners, working in concert with national safety agencies, including ISMP Canada and the Canadian Patient Safety Institute, and with support from various provincial initiatives and Accreditation Canada, have undertaken collaborative efforts to enhance the safety of medication management. To assess the progressive uptake of these initiatives over time, it is important to develop qualitative and quantitative measurement processes. One valuable source of information collected from across the country is the biennial Hospital Pharmacy in Canada Report (Babich et al., 2008). The 17th report in this series, released in 2009, is available at [http://www.lillyhospitalsurvey.ca/hpc2/content/rep\\_2008\\_toc.asp](http://www.lillyhospitalsurvey.ca/hpc2/content/rep_2008_toc.asp). Each of the four most recent reports, beginning with the 2001/02 report, has dedicated one section to the topic of medication safety, and these sections provide a useful perspective on changes in medication management processes across Canada. Many of these changes have influenced how medications are provided to and managed by critical care practitioners. This article highlights some achievements in medication system safety, as captured by the most recent Hospital Pharmacy in Canada Annual Report.

The Hospital Pharmacy in Canada 2007/2008 Report (Johnson, 2008) summarized responses from the 166 hospitals (out of 223 hospitals invited to participate) that responded to the survey, a 74% response rate. The responding hospitals consisted of 40 teaching hospitals and 126 nonteaching hospitals. To be eligible to participate, hospitals had to have a minimum of 50 acute care beds. The participating organizations represented 69,212 inpatient beds, of which

49,014 were acute care beds (Johnson, 2008). Of the 166 responding hospitals, 161 completed the medication safety section of the 2007/08 survey, and the data presented in the following sections relate to these 161 respondents (Lefebvre, 2008).

### Learning from medication incidents

A key component of a safe medication use system is a system for reporting and analyzing medication-related incidents. All of the 161 respondents indicated that such a reporting system was in place, with 90% reporting that a designated committee was responsible for reviewing the incidents.

Since the 2001/02 report, there has been a steady increase in the proportion of respondents indicating that their hospitals reported medication incidents externally, to regional health authorities, to provincial reporting systems, or to ISMP Canada (see Figure 1) (Harding & Lefebvre, 2002; Lefebvre, 2008). The 2007/08 report notes, "The presence of reporting systems, in all of the hospitals that participated in the 2007/08 survey will hopefully facilitate future participation in the Canadian Medication Incident Reporting and Prevention System (CMIRPS)... CMIRPS is part of the pan-Canadian reporting and learning system being developed to support the capture, analysis and dissemination of information about adverse events, with the goal of insuring that known risks are acted upon in a coordinated and timely manner." (Lefebvre, 2008, p. 53).

Nearly 60% of all respondents indicated that information from published incident reports was broadly disseminated to staff and physicians. Such dissemination supports the CMIRPS goal of shared learning from incident analysis.

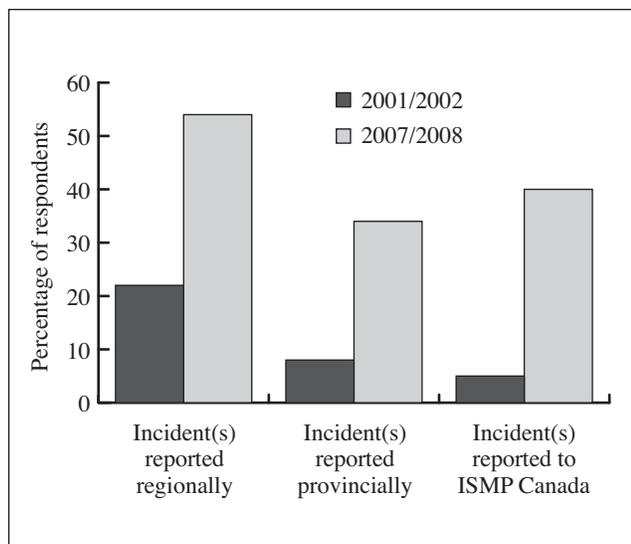
### Actions to reduce risk

Understanding the underlying system-based weaknesses that contribute to medication-related incidents requires both retrospective analysis of incidents that have occurred and prospective analysis of the potential for error. The 2007/08 report notes that 63% of respondents (90 of 142) reported conducting a retrospective analysis (root cause analysis) of one or more medication incidents in the previous year, and 46% (72 of 157) reported conducting a prospective analysis (e.g., failure mode and effects analysis) related to medication safety in the same time period. Of the respondents who reported conducting a retrospective or prospective medication safety-related analysis, nearly all (94% for each) reported that they had implemented improvements, as a result (Lefebvre, 2008).

Accreditation Canada's Standards for Managing Medications, as well as various required organizational practices (ROPs), address strategies for safe medication management. The medication-related ROPs highlight the importance of safely managing high-alert medications, including concentrated electrolytes, heparin, and opioids (Accreditation Canada, 2010). Several questions in the Hospital Pharmacy in Canada survey collect information relevant to such Accreditation Canada requirements, and Figure 2 highlights some of the

responses related to this from each biennial survey since 2001/02 (Harding & Lefebvre, 2002; Lefebvre, 2004; Lefebvre, 2006; Lefebvre, 2008).

Medication reconciliation, a structured process for preventing medication errors at transitional points in care, is an ROP of Accreditation Canada (Accreditation Canada, 2010) and is among the interventions promoted through the Canadian Patient Safety Institute's Safer Healthcare Now! (SHN)



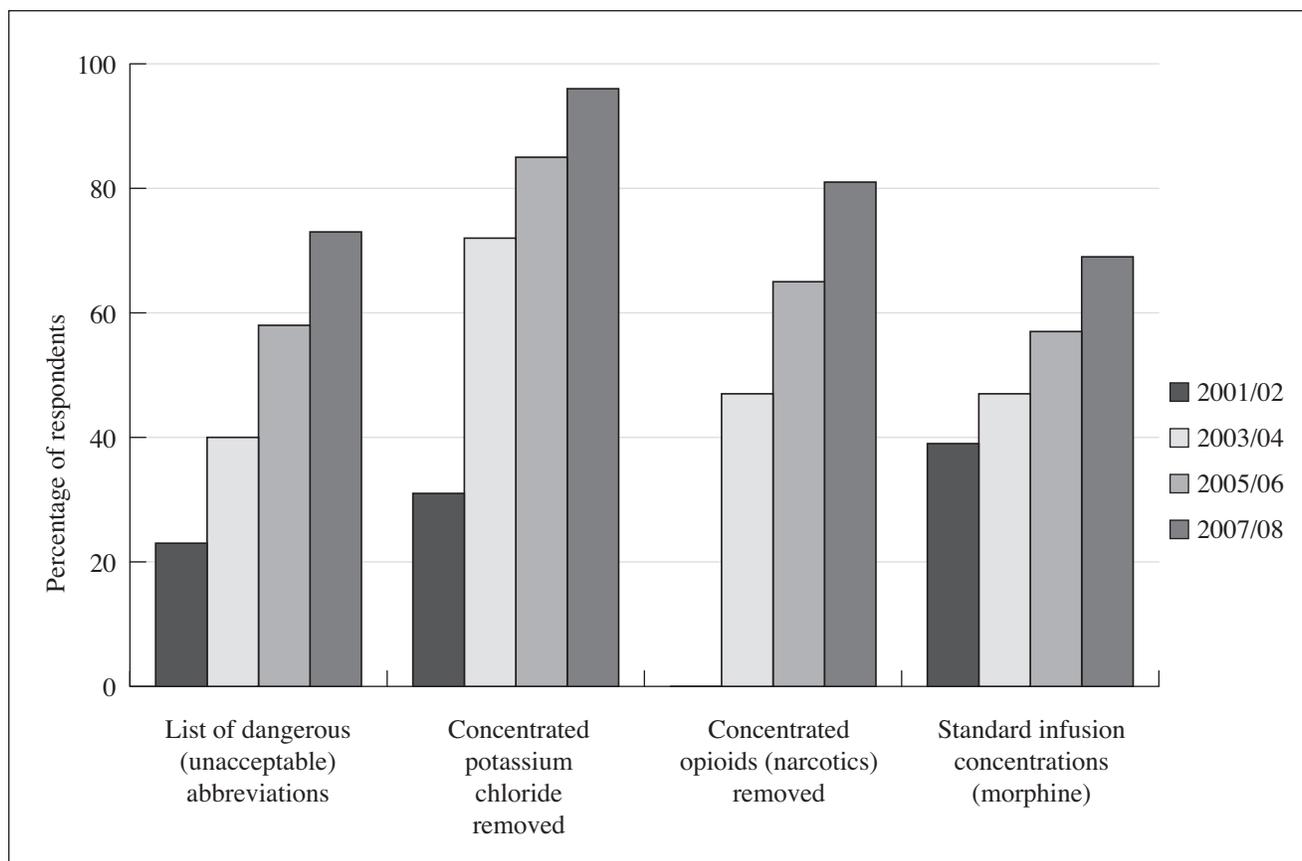
**Figure 1: Reporting of medication incidents to external bodies** (Harding & Lefebvre, 2002; Lefebvre, 2008)

campaign. The SHN medication reconciliation interventions are led by ISMP Canada (Institute for Safe Medication Practices Canada [ISMP Canada], 2010a). Overall, 72% (114 of 159) of respondents to the medication safety section of the 2007/08 Hospital Pharmacy in Canada survey reported that a formal process was in place to obtain a complete list of the patient's current home medications. Of these, 94% reported having a formal process for using this medication list when admission orders were written. These data suggest that there has been considerable uptake of medication reconciliation processes for this transition point.

Nearly two-thirds (99 of 156) of the 2007/08 respondents indicated that they had completed a medication safety self-assessment within the previous two years, and 93% of these reported using the ISMP Canada program (ISMP Canada, 2010b). The report notes that "with the implementation of the new Managing Medications Standards, surveyors from Accreditation Canada now frequently ask if you have conducted a Medication Safety Self-Assessment tool and if you wish to share the results at the time of the survey." (Lefebvre, 2008, p. 55).

## Conclusions

Safety can be described as *what doesn't happen*. As such, the measurement of safety can be difficult. However, measurement strategies are necessary to ensure that the various safety initiatives and interventions being implemented across the country are actually having a positive effect on the risk of



**Figure 2: Implementation of selected Accreditation Canada standards and required organizational practices (ROPs)** (Harding & Lefebvre, 2002; Lefebvre, 2004; Lefebvre, 2006; Lefebvre, 2008)

preventable harm. Given that medication incidents of a specific type may occur only rarely and that incident reporting systems rely primarily on voluntary reports, lack of reports about a particular type of incident cannot be interpreted as evidence that the underlying causes have been resolved. Thus, a variety of proxy measurements, such as the level of implementation of evidence-based practices that are known to reduce the risk of a particular incident, are needed. For example, a constraint function, such as the removal of concentrated potassium chloride from patient care areas, is known to decrease the potential for its inadvertent administration. Therefore, widespread removal is likely to decrease the risk of incidents across the country.

In addition to specific content on the topic of medication safety, the Hospital Pharmacy in Canada Reports also provide valuable information about progress in other areas of pharmacy practice, such as clinical services, drug distribution, and use of technology, all of which affect patient care processes and safety within the critical care environment. These reports have been a useful resource and benchmarking tool for individual pharmacy departments and hospital leadership for many years. The authors suggest that they can also provide an important longitudinal perspective on the evolution of safe medication management practices in Canadian hospitals and the accomplishments achieved to date.

*This article was written using materials from ISMP Canada, with permission (ISMP Canada Safety Bulletin, April 30, 2010; 10(2):1-3. Retrieved from <http://www.ismp-canada.org/download/safetyBulletins/ISMPCSB2010-02-HospitalReportMedSafety.pdf>)*

**ISMP Canada gratefully acknowledges the valuable lessons learned and information reported by professionals in the Canadian healthcare community that can then be shared to enhance medication system safety.** All ISMP Canada Safety bulletins are available from <http://www.ismp-canada.org/ISMPCSafetyBulletins.htm>

ISMP Canada is an independent national not-for-profit organization committed to the advancement of medication safety in all health care settings. ISMP Canada maintains a national voluntary medication incident and ‘near miss’ reporting program founded for the purpose of sharing the learning experiences from medication errors. Our collaborative goal is implementation of preventive strategies and system safeguards to decrease the risk for error-induced injury.

**ISMP Canada is a key partner in the Canadian Medication Incident Reporting and Prevention System (CMIRPS).**

**Medication Incidents (including near misses) can be reported to ISMP Canada:**

- (i) through the website [http://www.ismp-canada.org/err\\_report.htm](http://www.ismp-canada.org/err_report.htm) or
- (ii) by phone: 416-733-3131 or toll free: 1-866-544-7672.

ISMP Canada guarantees confidentiality and security of information received, and respects the wishes of the reporter as to the level of detail to be included in publications.

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