

# Take a proactive approach with the Medication Safety Self-Assessment

MEDICATION SAFETY HAS COME TO THE FOREFRONT OF health care agendas, a shift that has been driven in part by adverse events studies reporting the incidence of preventable medication errors in hospitals,<sup>1</sup> long-term care facilities,<sup>2</sup> and the community.<sup>3,4,5</sup> Recent initiatives to improve patient safety in acute care settings,<sup>6</sup> particularly medication reconciliation,<sup>7,8</sup> are beginning to have an impact on community pharmacists. It is therefore important for all community pharmacists to be aware of patient safety initiatives and consider what medication safeguards may be appropriate in their own pharmacies. Formal pharmacy education programs do not typically include information on safe medication systems and how we as pharmacists can help to ensure safety in our own practices. We have been taught to rely on careful checking — for example, checking labels 3 times during the dispensing process — but we have not been exposed to the concepts of medication system safety and how our environment, processes, equipment, and other factors can affect dispensing accuracy.

Pharmacists have also not learned how human factors engineering principles can influence our actions and how such principles can be used in implementing safeguards to minimize the risk of error at our practice sites. Human factors such as lighting,<sup>9</sup> interruptions,<sup>10</sup> and distractions<sup>11</sup> are known to affect dispensing accuracy. Incorporating this knowledge into the design of our pharmacies and our workflow patterns can help to enhance our accuracy. Look-alike and sound-alike product names and packaging have been implicated as root causes in medication errors in the dispensing and administration stages of the medication use process. For example, an earlier column in this series described a dispensing error that originated when a look-alike product was picked at the warehouse.<sup>12</sup> A tool is now available for community/ambulatory pharmacists — the Medication Safety Self-Assessment for Community/Ambulatory

## How to access the Canadian MSSA for community/ambulatory pharmacy

The self-assessment program will be made available to community pharmacies through provincially funded initiatives as well as by individual single-use subscription. In Ontario, the Ministry of Health and Long-Term Care has funded the development and use of this program. Through this partnership, the Canadian version of the MSSA for Community/Ambulatory Pharmacy is available to Ontario community pharmacies at no charge. Interest in setting up similar programs has been expressed by a few other provinces. A password will be required to access the program through the ISMP Canada website ([www.ismp-canada.org](http://www.ismp-canada.org)). This can be requested by sending an e-mail to [mssa@ismp-canada.org](mailto:mssa@ismp-canada.org) or calling ISMP Canada at 416-480-5899 or 1-800-544-7672.

Pharmacy — which offers insight into medication safeguards in community practice and provides an opportunity to assess the level of concurrence with the safety practices described.

In the United States, medication error reports have been collected for over 20 years through the United States Pharmacopeia national database for medication errors (MEDMARX). The Institute for Safe Medication Practices (ISMP [US]) used knowledge gained from analysis of these reports and information gathered during on-site consultations to develop the Medication Safety Self Assessment (MSSA), a risk assessment tool.

The MSSA is designed to heighten awareness of the characteristics that distinguish a safe medication system. The individual assessment characteristics represent system improvements that are recommended on the basis of analysis of medication errors and hazardous situations. The original MSSA focused on hospital practice, and a subsequent version was developed for use in community pharmacy. ISMP Canada, with the assistance of a working group of pharmacists, has modified this tool, selecting the higher-impact items to create a shorter version for use in Canada.

## Program components

The Canadian version of the MSSA for Community/Ambulatory Pharmacy consists of 3 main components:

- The *assessment tool*, consisting of 10 key elements (Table 1) and 20 core distinguishing characteristics that identify significant medication safety principles. For each of the core distinguishing

**TABLE 1 Key elements of a safe medication system**

|   |
|---|
| Patient information                                     |
| Drug information  |
| Communication of drug orders and other drug information |
| Drug labelling, packaging, and nomenclature             |
| Drug standardization, storage, and distribution         |
| Use of devices  |
| Environmental factors                                   |
| Staff competency and education                          |
| Patient education                                       |
| Quality processes and risk management                   |

characteristics, several self-assessment items assist in determining the level of compliance with the corresponding key element. The self-assessment items for a sample core characteristic are provided in Table 2, to illustrate the relationships among the criteria in the tool. Possible responses to each characteristic item are listed in Table 3.

Although all items in the US tool are of value, the Canadian version has been shortened significantly to include the items with the greatest impact on safety. The rationale was that a shorter survey might increase participation, thus creating greater overall awareness of the concepts of system safety and encouraging improvement in system safety measures.

- A *password-secure area on the Web* where individual results can be posted and compared with the potential maximum scores, and where individual results can be tracked to monitor improvement over time. To assure confidentiality, no data are maintained on the Internet survey form after it has been submitted.
- *Access to aggregate scores* of results from other community pharmacies across Canada, once a sufficient number of pharmacies have posted their results. This will allow individual pharmacies to compare their results to the average aggregate response for key elements, core characteristics, and individual characteristic items.

## Benefits of the program

The benefits of participating in this program include:

- Increased awareness of medication safeguards that could be used in a community pharmacy

**TABLE 2 Sample core characteristic from the MSSA for Community/Ambulatory Pharmacy — Canadian version**

| Key element                        | Patient information   |
|------------------------------------|---|
| Core distinguishing characteristic | Essential patient information is obtained, is readily available in useful form, and is considered when dispensing medications.  |
| Self-assessment items              | <p>A drug history, including prescription medications, vitamins, herbal products, and over-the-counter medications, is obtained for patients at initial encounter (by a questionnaire or other means) and entered into the computer system.</p> <p>Basic information about comorbid or chronic conditions (e.g., diabetes, hypertension, renal or liver impairment, pregnancy, lactation), allergies, height, and weight is obtained at the initial patient encounter (by a questionnaire or other means) and entered into the computer system.</p> <p>Prescription orders cannot be entered into the pharmacy computer system until the patient's allergies (or an entry of "no known allergies") have been properly entered and coded (patient allergies is a required field.)</p> <p>Recent patient-specific clinical data such as blood glucose levels, liver enzymes, renal function, blood pressure, and cholesterol levels are available to pharmacists to support clinical drug monitoring.</p> <p>Pharmacists routinely consider the need for dose adjustments for medications that may be toxic on the basis of specific recent clinical data (e.g., patient with renal impairment is identified on prescription of a potentially toxic drug that is excreted by the kidney).</p> |

**TABLE 3 Possible responses to a Medication Safety Self-Assessment**

|   |
|---|
| There has been no activity to implement this item.  |
| This item has been discussed for possible implementation in the pharmacy but has not been implemented at this time. |
| This item has been partially implemented for some or all patients, prescriptions, drugs, or staff.                  |
| This item is fully implemented for some patients, prescriptions, drugs, or staff.                                   |
| This item is fully implemented for all patients, prescriptions, drugs, and staff.                                   |

- Identification of areas that could benefit from improvement in one's pharmacy
- Facilitation of a shift from responding to medication errors as

individual performance issues to recognizing the system causes that contribute to errors

- Provision of opportunity and structure for group discussion to facilitate input from all staff, as well as an indirect opportunity for team-building
- Opportunity to view a "snapshot" of current practice status both provincially and nationally
- Identification of opportunities for provincial and national pharmacy regulatory bodies and associations to assist in improving practice.

The MSSA for Community/Ambulatory Pharmacy is an exciting new initiative through which community pharmacists can take a proactive approach to ensuring safe dispensing practices. Participation in this program will benefit individual pharmacies and will also help ISMP Canada to identify national priorities for patient safety in community pharmacy. ■



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**References**

1. Baker GR, Norton PG, Flintoft V, et al. The Canadian Adverse Events Study: the incidence of adverse events among hospital patients in Canada. *CMAJ* 2004;170(11):1678-86.
2. Gurwitz JH, Field TS, Judge J, et al. The incidence of adverse drug events in two large academic long-term care facilities. *Am J Med* 2005;118(3):251-8.
3. Flynn EA, Barker KN, Carnahan BJ. National observational study of prescription dispensing accuracy and safety in 50 pharmacies. *J Am Pharm Assoc* 2003;43(2):191-200.
4. Forster AJ, Asmis TR, Clark HD, et al. Ottawa Hospital Patient Safety Study: incidence and timing of adverse events in patients admitted to a Canadian teaching hospital. *CMAJ* 2004;170(8):1235-40.
5. Forster AJ, Murff HJ, Peterson JF, et al. The incidence and severity of adverse events affecting patients after discharge from the hospital. *Ann Intern Med* 2003;138(3):161-7.
6. Safer Healthcare Now! Targeting Safer Healthcare for Canadians. Available:

- www.saferhealthcarenow.ca (accessed July 8, 2006).
7. MedRec: Prevent adverse drug events (ADEs) by implementing medication reconciliation. Safer Healthcare Now! Available: www.saferhealthcarenow.ca/Default.aspx?folderId=82&contentId=124 (accessed July 8, 2006).
8. Cornish P, Knowles S, Marchesano R et al. Unintended medication discrepancies at the time of hospital admission. *Arch Intern Med* 2005;165:424-9.
9. Buchanan TL, Barker KN, Gibson JT, et al. Illumination and errors in dispensing. *AJHP* 1991;48:2137-45.
10. Flynn EA, Barker KN, Gibson JT, et al. Impact of interruptions and distractions on dispensing errors in an ambulatory care pharmacy. *Am J Health-Syst Pharm* 1999;56:1319-25.
11. Flynn EA, Barker KN, Gibson JT, et al. Relationships between ambient sounds and the accuracy of pharmacists' prescription-filling performance. *Hum Factors* 1996;38:614-22.
12. Greenall J, Wichman K. Look-alike packaging contributes to patient death. *CPJ* 2006;139:57-8.

**COMMENTARY — CONT'D FROM P. 24**

**References**

1. Institute of Medicine. *Report Brief July 2006: preventing medication errors*. Washington, DC: National Academy Press; 2006.
2. Baker GR, Norton PG, Flintoft V, et al. The Canadian Adverse Events Study: the incidence of adverse events among hospital patients in Canada. *CMAJ* 2004;170:1678-86.
3. Forster AJ, Clark HD, Menard A, et al. Adverse events among medical patients after discharge from hospital. *CMAJ* 2004;170(3):345-9.
4. Kidney T, MacKinnon NJ. Preventable drug-related morbidity and mortality in older adults: a Canadian cost-of-illness model. *Geriatrics Today* 2001;4:120.

5. DeVos L, Lopatka H, Ontkian S. Community pharmacy patient safety and quality improvement pilot project [abstract]. *Can Pharm J* 2006;139(5):36.
6. McCaffrey KJ, MacKinnon NJ. Health care report cards: why should community pharmacists care? *Can Pharm J* 2005;138(5):36-43.
7. Grainger-Rousseau TJ, Miralles MA, Hepler CD, et al. Therapeutic outcomes monitoring: application of pharmaceutical care guidelines to community pharmacy. *J Am Pharm Assoc* 1997;NS37(6):647-61.
8. MacKinnon NJ. Risk assessment of preventable drug-related morbidity in older persons [dissertation]. Gainesville, FL: University of Florida; 1999.