

# Medication Safety Alerts

David U

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

## NEWS

ISMP Canada is initiating a study, funded by the Ontario Ministry of Health, to determine the impact of interventions to improve medication-use systems in Ontario hospitals. Hospitals participating in this 2-year project will be guided through a self-assessment of their medication-use systems, by means of a Canadian version of the ISMP (US) medication self-assessment tool. This measurement tool has already been used by many American hospitals. Each hospital's self-assessment will provide a confidential baseline indicator of specific areas where the medication-use system could be improved. ISMP Canada will offer various targeted "system intervention strategies" to the study group hospitals, including Analyze-ERR software (a program for tracking medication errors and near misses and performing root-cause analysis), error prevention workshops, and Medication Safety Alert newsletters. Control hospitals will be eligible to receive similar interventions after the 1-year intervention period. Detailed information is posted on ISMP Canada's Web site ([www.ismp-canada.org](http://www.ismp-canada.org)).

ISMP Canada and ISMP (US) have jointly developed the Analyze-ERR software program, which has 2 components: a database for recording and tracking medication errors and a root-cause analysis component. The first component allows users to record medication error and near-miss incidents. The National Coordinating Council for Medication Error Reporting and Prevention authorized the the program developers to use its medication error taxonomy, a well-accepted, standardized terminology with which hospital staff will be familiar. Inherent in this component of the program are various searching and reporting functions. The second component prompts hospital staff to identify contributing factors and to consider performing a root-cause analysis on selected events. The expertise for the root-cause analysis component was provided by ISMP (US), which has many years' experience in analyzing medication errors. Founded on the principles

of a nonpunitive approach, the program maintains 2 distinct databases, such that the objective facts about the error (the event record) are dissociated from the full root-cause analysis information. Aggregate root-cause analysis data will identify for hospitals specific areas of concern, so that improvement efforts can be focussed appropriately. Hospitals that participated in the 3-month trial of Analyze-ERR suggested further useful features for the software. For more information on Analyze-ERR, please visit the ISMP Canada Web site ([www.ismp-canada.org](http://www.ismp-canada.org)).

ISMP Canada, Health Canada, CSA International, CSHP, and representatives from the pharmaceutical industry met in March 2001 to identify a mechanism for improved labelling of injectable products in Canada. New standards have been developed by CSA International, and discussions are underway to maximize the potential for added safety from the pharmaceutical industry, with the new standards as a reference guide.

## DISCUSSION: INCOMPETENCE VERSUS ERROR

Recently, significant media coverage in Ontario has focussed on a number of cases of malpractice and incompetence involving Ontario physicians. The public appears to be seeking greater accountability from institutions and practitioners alike and is asking for disclosure of all complaints registered with the Ontario College of Physicians and Surgeons. A similar call for greater accountability would likely apply to other health-care professionals, such as pharmacists and nurses. As we explore this important issue, it is crucial that we understand the difference between incompetence and error.

All health-care professionals, including pharmacists, are accountable for the service they provide to their patients. A pharmacist must ensure that his or her individual competency level meets the standard set by his or her college. Measurements and assessments of



**Table 1. Dangerous Abbreviations and Dose Designations**

Abbreviation or Dose Expression	Intended Meaning	Possible Misinterpretation	Recommended Format
q6PM, etc. q.o.d. or QOD	Every evening at 6 PM Every other day	Misread as every 6 hours Misinterpreted as "q.d." (daily) or "q.i.d." (4 times daily) if the "o" is poorly written	Use "6 PM nightly" Use "every other day"
sub q	Subcutaneous	The "q" has been mistaken for "every" (e.g., one heparin dose ordered "sub q 2 hours before surgery" misunderstood as every 2 hours before surgery)	Use "subcut." or write "subcutaneous"
SC	Subcutaneous	Mistaken for SL (sublingual)	Use "subcut." or write "subcutaneous"
U or u	Unit	Read as a zero (0) or a four (4), causing a 10-fold overdose or greater (4U seen as "40" or 4u seen as "44")	"Unit" has no acceptable abbreviation — use "unit"
IU	International unit	Misread as IV (intravenous)	Use "units"
cc	Cubic centimetres	Misread as "U" (units)	Use "mL"
x3d	For 3 days	Mistaken for "3 doses"	Use "for 3 days"
BT	Bedtime	Mistaken for "BID" (twice daily)	Use "hs"
ss	Sliding scale (insulin) or _ (apothecary)	Mistaken for "55"	Spell out "sliding scale"; use "one-half" or "1/2"
> and <	Greater than and less than	Mistakenly used opposite of intended	Use "greater than" or "less than"
/ (slash mark)	Separates 2 doses or indicates "per"	Misunderstood as the number 1 ("25 unit/10 units" read as "110 units")	Do not use a slash mark to separate doses; use "per"
Name letters and dose numbers run together (e.g., Inderal40 mg)	Inderal 40 mg	Misread as Inderal 140 mg	Always use space between drug name, dose, and unit of measure
Zero after decimal point (1.0)	1 mg	Misread as 10 mg if the decimal point is not seen	Do not use terminal zeroes for doses expressed in whole numbers
No zero before decimal dose (.5 mg)	0.5 mg	Misread as 5 mg	Always use zero before a decimal when the dose is less than a whole unit

staff competency must be implemented to identify problems in practitioner competency as quickly as possible. Both regulatory bodies and health-care organizations need to undertake such periodic assessments of competence and performance.

Pharmacy colleges across Canada currently have quality assurance programs by which members are randomly selected to undergo a comprehensive assessment. It is recommended that such assessment programs be expanded to cover more practitioners and that the assessments be done more frequently. There are also other mechanisms for identifying performance issues and education opportunities, such as peer review, aggressive continuing education and training programs, and aggressive continuous quality improvement initiatives.

It is also recognized that in some cases a practitioner will be deemed negligent. Examples would include practising without a license, working while impaired, and performing recognized illegal activities. Such acts should not be viewed as errors and need to be addressed within performance management systems and, potentially, within the legal tort system.

It is well recognized and acknowledged that even

competent and careful practitioners are fallible and that errors can occur in dynamic interactions involving both people and complex organization systems. Data from root-cause analyses have shown that many system-based problems such as lack of communication, high stress levels, disruptions, and excessive workload contribute to errors. Highly competent, highly experienced staff have been involved in tragic errors as a result of preventable circumstances. In fact, because of the very nature of health care, most health-care professionals are at risk of being involved in an error at some point in their career.

Reviewing internal errors and risk for error, as well as external reports of error and aggregate data, will help to identify areas for improvement within our complex systems. Root-cause analysis of errors and "near misses" will allow a focussed approach to strategies for decreasing the risk of error and increasing the safety of medication-use systems. In contrast, disciplining individual practitioners because of errors will not correct the underlying causes. Research bears out that a punitive approach to error creates an environment in which errors are hidden, remain invisible, and are not reported.

It seems reasonable and justifiable for the public to be alerted to negligent practitioners. However, a



mechanism is needed to differentiate a practitioner who has made an error from a practitioner whose overall competency is a concern. Simply publicizing all complaints registered against individual practitioners will not meet the real need of the public. A determination of reasonable and excusable error versus incompetence and negligence needs to be made. Perhaps it is the college's responsibility to investigate, case by case, all the factors contributing to a complaint registered by a patient so as to make such a determination.

It is gratifying to see that patient safety has finally been brought to the forefront and that health-care errors are being scrutinized and debated. But we need to be careful not to group error and incompetence together. They are distinct entities and require separate approaches to resolution and prevention of recurrence.

## SPECIAL FEATURE

Included in this edition of the Medication Safety Alerts column is an abridged version of a table of abbreviations and dose designations that are open to misinterpretation (Table 1), which appeared in a recent issue of *ISMP Medication Safety Alert!* (volume 6, issue 9, May 2, 2001). For the complete table, please visit the ISMP Canada Web site ([www.ismp-canada.org](http://www.ismp-canada.org)).

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