

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

With the support and assistance of Michael Cohen and the Institute for Safe Medication Practices (based in the United States), the Institute for Safe Medication Practices Canada (ISMP Canada) has now been established. ISMP Canada is an independent, nonprofit organization established to collect and analyze medication error reports and to develop recommendations for enhancing patient safety. Like its sister organization in the United States, ISMP Canada intends to serve as a national resource for promoting safe medication practices throughout the Canadian health-care community.

The Institute will work collaboratively with health-care practitioners and institutions, schools, professional organizations, the pharmaceutical industry, and regulatory and government agencies to provide education about adverse drug events and their prevention.

ISMP Canada will work collaboratively with CSHP and its Medication Error Reporting Task Force to create a successful Canadian medication error reporting system.

ISMP Canada is developing a suite of programs and activities, including an electronic medication error reporting system, medication safety alert newsletters, and medication safety self-assessment tools. Pharmacy practitioners are encouraged to send information about medication-related errors, "near-misses", and medication error prevention strategies to ISMP Canada in one of the following ways:

- by e-mail (davidu@ismp.org)
- by fax to ISMP Canada (905.886.0803)
- through the ISMP Canada Web site (www.ismp-canada.org).

All identifying information will be held in strict confidence.

For more information on ISMP Canada, please visit the Web site (www.ismp-canada.org).

HANDLING MEDICATION RETURNED FROM NURSING UNITS

Although many Canadian hospitals have adopted a unit-dose distribution system, some are still dispensing individual prescriptions or are using ward stock. A 63-year-old man was given carbamazepine 300 mg for seizure control. Approximately 1 week later, severe drowsiness, confusion, and respiratory depression developed, necessitating transfer to an acute care hospital. Investigation of all the medications he was taking revealed that his prescription vial for carbamazepine (200-mg tablets) contained quite a few primidone 250-mg tablets. Primidone is a precursor of phenobarbital, which can cause respiratory depression. It is noteworthy that blood analysis was positive for phenobarbital in this patient.

Both carbamazepine 200-mg tablets and primidone 250-mg tablets are generic products, both are white, and they are almost identical in size. Although the



carbamazepine tablets are marked with “200” and the primidone tablets are marked with “250”, it is very difficult to distinguish between them. It appears that nurses at this institution sometimes add a previous supply of medication to the current supply of the same medication, and, perhaps because they look very similar, these 2 drugs were accidentally mixed together. Pharmacy staff at the institution were also allowed to use “recycled” medications from the nursing units. In this case, the medication vial returned from the ward (which contained both carbamazepine and primidone tablets) was labelled as carbamazepine 200-mg tablets, and the pharmacy staff dispensed it as carbamazepine to the patient without realizing that it also contained primidone 250-mg tablets. Fortunately, the patient’s condition improved over the next few days, and he suffered no serious sequelae.

Recommendations

1. Reinforce the hospital policy that different vials or bottles of the same medication must not be combined in a single container, either in the nursing units or in the pharmacy.
3. Develop a pharmacy policy that no returned or recycled medications are to be dispensed to another patient or used as floor stock. If such a policy imposes an economic issue, reuse only very expensive medications, discarding all other returned drugs.
4. The pharmacy should avoid, when possible, purchasing a drug that looks almost identical with another drug already in use by the pharmacy. Such pairs of similar-appearing drugs usually come from a single generic manufacturer.
5. If possible, the pharmacy should always use the same brand of a particular medication, so that nurses, technicians, and pharmacists become familiar with its appearance and are better able to notice slight differences.
6. When possible, the pharmacy should purchase drugs in unit-dose packages, even if the distribution system is traditional. This provides an inherent check in the system.
7. A unit-dose distribution system should be instituted so that this type of error can be prevented.
8. In the community setting, patients should be advised of the risks associated with transferring medication from one prescription vial to another.

SPECIAL FEATURE

The special feature presented here is taken directly from *ISMP Medication Safety Alert!* volume 5, issue 6, March 22, 2000.

Is Automation the Universal Remedy for Preventable Adverse Drug Events?

Problem: Can automation — computerized physician order entry (CPOE), electronic medication administration records (MARs), bar code systems, and more — eliminate virtually all medication errors, or will it instill a false sense of security? Automated medication systems have been heralded in recent reports to the government (Institute of Medicine and Quality Interagency Coordination Task Force Reports), promoted in the legislature, and mandated by some health systems (Veterans Affairs) and purchasers (Leapfrog Group). While such technology is pivotal to reducing errors, too often, healthcare leaders mistakenly believe that the immediate effects of automation alone will ensure the safety of their medication systems.

Early adopters of the newest technology have reported significant barriers to successful implementation, new sources of error, and major infrastructure changes that have been necessary to accommodate the technology. Further, while new technology always introduces the opportunity for unanticipated errors, some vendors have marketed their products without sufficient testing or the ability to fully implement it on site. As a result, frustrated practitioners have taken shortcuts or added complexity to the medication system to circumvent or cure technology problems. Some examples follow.

Because there is not a uniform bar code that is required on all products, the error-prone process of in-house packaging and coding may be necessary when implementing bar coded drug administration. Even with bar coded drugs, nurses may be unable to scan the drug at the bedside if it must be removed from its package for preparation (removing specific doses from vials/ampuls, wasting part of a prefilled morphine syringe under the eye of a witness, etc.). Furthermore, in these cases, the bar code may not match the dose ordered and administered. Hard-to-scan codes or insensitive scanning devices have led to drug administration outside the bar code system or the use of bar code “cheat sheets” (frequently-used labels affixed to a sheet of paper for easy scanning) to circumvent the system. Also, if a drug is prescribed or entered into the pharmacy computer in error, bar code



systems will only help to get the wrong drug to the correct patient or the ordered drug to the wrong patient.

The order entry process with many CPOE systems currently on the market is error-prone, time-consuming, and lacks important screening capabilities to alert practitioners to unsafe orders. As a result, prescribers may bypass the order entry process totally and encourage nurses, pharmacists, or unit secretaries to enter written or verbal drug orders. Some CPOE systems are separate from the pharmacy system, which requires double entry of all orders. This may result in electronic/computer-generated MARs that are derived from the CPOE database, not the pharmacy database, often causing frequent discrepancies and extra work for nurses and pharmacists. Also, the MAR that is generated from the CPOE system may be used without pharmacy review. If electronic MARs are not readily available at medication stations and at the patient's bedside, or if their use is cumbersome or confusing, nurses often use handwritten notes or computer-generated care plans, which do not

clearly present drug information, to guide drug administration. Afterward, nurses may forget to document drug administration in the electronic MAR. Additionally, automation does little to enhance medication systems that are already plagued with problems. For example, using robotics for drug dispensing in systems without timely order entry and interfaces for transfers, admissions, and discharges, is fraught with error. Placing automated dispensing cabinets in systems with slow turnaround time for medications dispensed from pharmacy will likely lead to increased stock and unsafe administration of many first doses without pharmacy screening.

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