PATIENT SAFETY FIRST

Confusing, Look-Alike, and Sound-Alike Medications

SUZANNE C. BEYEA, PHD, RN, FAAN

The effort to provide safe patient care creates many challenges. One issue many clinicians confront every day is clearly and correctly identifying medications and solutions. This can be confusing when medications have similar names, labels, or containers. Additionally, supply-chain issues can result in substitutions, changes in suppliers or packaging, and a host of unexpected and confounding factors. For example, a label for a particular medication has always been green. The next time the vendor stocks it, however, its label has been changed to orange. The same medication may look like a different product altogether. With new products and medications being released each week, many clinicians may not be familiar with the ever-expanding list of medications or with those medications in particular that have been identified as "confusing" or that have "look-alike" or "sound-alike" names.

Published Warnings

Numerous groups interested in safe medication use have addressed issues related to these problems. As early as 2001, the Joint Commission published warnings about the inherent safety issues surrounding confusing medication names. In its *Sentinel Event Alert* related to this topic, the Joint Commission required hospitals, ambulatory surgery centers, and behavioral health organizations to establish policies and practices aimed at reducing the high risk of errors associated with look-alike and sound-alike medications.[1] This recommendation was based in part on the identification of hundreds of confusing medications by the United States Pharmacopeia (USP). Other groups, including the US Food and Drug Administration and the Institute for Safe Medication Practices (ISMP), have addressed this issue by providing lists of confusing names and making recommendations to reduce the potential errors associated with these medications.[2-7]

Subsequently, the Joint Commission developed a National Patient Safety Goal to

> *Identify and, at a minimum, annually review a list of look-alike/sound-alike drugs used in the organization, and take action to prevent errors involving the interchange of these drugs.*[1]

The Joint Commission also created a list of the most problematic medications for critical-access hospitals, hospitals, and office-based surgery settings.[8] The list includes brand and generic names for medications, and it details potential errors with related consequences and recommended safety strategies. The Joint Commission also made general recommendations for preventing medication name mix-ups and provided several strategies for organizations and clinicians to employ.[8]

Many clinicians may not be familiar with the ever-expanding list of medications that have been identified as problematic.

Other initiatives and resources also are available to health care providers to help prevent errors related to confusing medication names. The Institute for Healthcare Improvement provides a variety of tips to prevent medication name-related errors, and it provides a forum for clinicians to submit additional

strategies for preventing these types of errors.[9]

The ISMP also provides regular information about this topic. In a recent newsletter, for example, the ISMP provided a list of commonly confused medication names and listed preventive strategies to be used by regulatory agencies, pharmaceutical companies, health care organizations, practitioners, and patients.[10] The ISMP monitors this issue on an ongoing basis and provides best practices for error reduction strategies.

Through its reporting systems, the USP continues to monitor the errors associated with confusing medications. In 2004, the USP reported that 31,932 reports submitted to its MEDMARX medication error-reporting database were the result of look-alike or sound-alike medications (eg, similar packaging, labeling, product names).[11] This report included examples of actual errors with photographs of the labels or packaging to assist clinicians in recognizing how easy it could be to misidentify a medication name or label.

Clinicians can better identify the potential for errors by staying alert to the specific medications that cause the most confusion in individual practice settings.

Facility-Specific Measures

Despite increased awareness of look-alike and sound-alike medications, medication errors continue to occur. Furthermore, few clinicians know exactly which medications are most problematic within each specific clinical setting. For example, most hospitals and organizations maintain a general list of look-alike and sound-alike medications without further identifying specific medications common to individual clinical departments. To increase patient safety, problematic medication lists should be made more specific. For example, a list could be created that identifies medications commonly used in the OR, and a separate list could be compiled listing problematic medications used in the intensive care unit. Staying alert to the specific medications that cause the most confusion in individual practice settings can help clinicians better identify potential errors before they occur.

Perioperative clinicians need to ask, "What look-alike and sound-alike medications exist in the medication cabinet or supply room?" Mistakes may be more likely with the following medication names, labels, and/or packaging:

- heparin versus hetastarch—the bags may look exactly the same depending on the vendor.
- verapamil versus vasopressin—medication names may be mistaken for one another.
- midazolam versus ketorolac—depending on vendor, both may have orange labels and be supplied in similar vials.
- epinephrine versus ephedrine—one medication may be requested by a physician, but it can be mistaken for the other, especially when the physician's voice is muffled by a mask. These medications also may be stored next to one another if the medication supply cabinet is arranged alphabetically. In addition, both medications may be dispensed in similar containers or have similar packaging.

This is in no way a definitive list, because any medications with similar names, labels, or packaging could result in a medication being confused, misunderstood, or misidentified. The importance of being cautious cannot be overstated.

Not only do confusing medication names create the potential for errors, but sound-alike medications may provide unique challenges to health care providers working in the OR. Many factors common to the OR may lead to an increased risk for medication errors. These include muffled voices because clinicians are wearing masks and excessive environmental noise. These factors may create a significant challenge in communication regarding medications. In addition, the OR is a department in which verbal orders are still common, especially when the prescriber is scrubbed in.

Recommendations for Clinicians

Working together provides an opportunity for health care practitioners to increase the number of safe and redundant systems and minimize the risk of errors. By working closely with a clinical pharmacist, perioperative personnel can help identify potential problems related to the addition of medications to the department's formulary and supply cabinets. Consistent education for all health care providers about confusing medications can help everyone to be more alert to error-prone conditions. For example, discussing the fact that hetastarch now is supplied in a bag that looks just like the heparin bag can help clinicians implement interventions to reduce potential errors. Health care administrators should consider storing these medications in different areas to reduce the risk of a clinician accidentally selecting the wrong solution.

Clinicians also should monitor information resources such as the ISMP, USP, and the Joint Commission for the latest recommendations for avoiding errors associated with troublesome and confusing medication names. Staying alert to potential errors and implementing strategies to prevent errors related to commonly confused medications needs to be a team effort. By working together, the perioperative team can be proactive in preventing these types of errors. – AORN –

Editor's note: *MEDMARX is a registered trademark of the United States Pharmacopeia, Rockville, MD.*

References

1. 2008 National Patient Safety Goals: hospital program. Joint Commission. http://www.jointcommission.org/PatientSafety?NationalPatientSafetyGoals/08_hap_npsgs.htm. Accessed September 18, 2007.
2. Strategies to reduce medication errors: working to improve medication safety. US Food and Drug Administration. http://www.fda.gov/fdac/special/testtubetopatient/safety.html. Accessed September 13, 2007.
3. Evaluating drug names for similarities: methods and approaches. June 26, 2003. US Food and Drug Administration. Center for Drug Evaluation and Research. http://www.fda.gov/cder/meeting/drugNaming.htm. Accessed September 13, 2007.
4. Medication Errors. US Food and Drug Administration. http://www.fda.gov/cder/drug/MedErrors/default.htm. Accessed September 13, 2007.
5. Progress with preventing name confusion errors. Institute for Safe Medication Practices. http://www.ismp.org/Newsletters/acutecare/articles/20070809.asp. Accessed September 13, 2007.
6. ISMP quarterly action agenda. July to September 2006. Institute for Safe Medication Practices. http://www.ismp.org/Newsletters/acutecare/articles/A4Q06Action.asp?ptr=y. Accessed September 13, 2007.
7. ISMP quarterly action agenda. April and June 2007. Institute for Safe Medication Practices. http://www.ismp.org/Newsletters/acutecare/articles/A3Q07Action.asp?ptr=y. Accessed September 13, 2007.
8. Potential problematic drug names. Tables I–III. Joint Commission. http://www.jointcommission.org/NR/rdonlyres/C92AAB3F-A9BD-431C-8628-11DD2D1D53CC/0/LASA.pdf. Accessed September 13, 2007.
9. Improve core processes for dispensing medications. Institute for Healthcare Improvement. http://www.ihi.org/IHI/Topics/PatientSafety/MedicationSystems/Changes/Improve+Core+Processes+for+Dispensing+Medications.htm. Accessed September 13, 2007.
10. ISMP's list of confused drug names. Institute for Safe Medication Practices. http://www.ismp.org/tools/confuseddrugnames.pdf. Accessed September 13, 2007.
11. Practitioners' reporting news: tips for using USP's similar names list. August 31, 2004. US Pharmacopeia. http://www.usp.org/hqi/practitionerPrograms/newsletters/practitionerReportingNews/prn1182004-09-10.html. Accessed September 13, 2007.

SUZANNE C. BEYEA
PhD, RN, FAAN
Director of Nursing Research
Dartmouth-Hitchcock Medical Center
Lebanon, NH

Future Congress Dates and Locations Announced

Make plans now to attend AORN Congress in upcoming years. Following is a list of future Congress dates and locations:

- 2008—March 30 to April 3, Anaheim, California
- 2009—March 15 to 19, Chicago, Illinois
- 2010—March 14 to 18, Denver, Colorado
- 2011—March 19 to 24, Philadelphia, Pennsylvania
- 2012—March 25 to 29, New Orleans, Louisiana