



Nurse Advise-ERR®

Educating the healthcare community about safe medication practices

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Survey on LASA drug name pairs

Who knows what's on your list and the best ways to prevent mix-ups?

Not a week goes by that we don't hear about mix-ups between two products with similar names. Too many of these mix-ups have led to harmful or fatal medication errors. Increasingly, pharmaceutical manufacturers and regulatory authorities have been taking measures to determine if there are unacceptable similarities between proposed drug names and products on the market. Some improvement has occurred in recent years, but factors such as handwritten and verbal prescriptions—which can easily be mistaken as look-alike or sound-alike (LASA) drug names—and the vast number of products on the market have impeded full resolution of the problem.

In March 2009, we distributed a subscriber survey to learn how healthcare providers are dealing with LASA drug names. This safety problem has been the focus of one of The Joint Commission's (TJC) National Patient Safety Goals (NPSGs) since 2005. The NPSG requires accredited organizations to maintain and annually review a list of at least 10 LASA name pairs, and to take action to prevent the interchange of these products. Almost 850 people—mostly nurses (371) and pharmacists (285)—responded to our survey, and here's what they had to say.

List of LASA drug name pairs

About 80% of respondents reported that their organization maintains a list of LASA drug name pairs that could be confused with each other. Uncertainty about whether their organization maintains such a list was much greater among staff nurses (27% uncertain) than staff pharmacists (3% uncertain). About a quarter (26%) of respondents felt they could name most of the drug name pairs on their organization's list;

5% could not name any drugs on their LASA list.

Half of respondents' LASA list contained more than 15 name pairs; 30% contained 11-15 name pairs; 14% included 10 name pairs; and 6% contained less than 10, the minimum number required by TJC NPSG. The most common resources used to select the name pairs included: TJC LASA list (48%), ISMP LASA list (35%), and internal staff reports (32%). However, 39% of staff nurses and 16% of staff pharmacists had no idea where the list originated. Half of respondents (54%) reported adding new drug name pairs to their original list compiled, but almost a third (29%) of respondents were uncertain whether any drug name pairs had ever been added.

Risk-reduction steps

Among respondents with a list of LASA drug name pairs, 87% reported their organizations have identified risk-reduction steps to reduce confusion between these drugs. Of those, only half felt their organization had implemented all the identified risk-reduction steps. About 11% of respondents were uncertain whether their organization had identified and/or implemented any risk-reduction steps; 2% said no steps have been identified or implemented.

The most common resources used to identify risk-reduction steps included best practice recommendations in the literature (41%), ISMP resources (38%), and analysis of internal medication-use systems (37%). The risk-reduction steps most frequently addressed drug dispensing processes (91%), drug storage (89%), and drug administration (80%). Least frequently addressed steps included drug pur-

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safetywires

⚡ KCl concentrations need improved visibility. The potassium chloride 10 mEq containers from Hospira pictured below were put in the wrong compartment in an automated dispensing cabinet, which later led to a mix-up. Both containers hold a total of 10 mEq of potassium, but one is twice as concentrated as the other. The concentrations (200 mEq/L or 100 mEq/L) and volume (50 mL or 100 mL) can be easily missed as they are not nearly as conspicuous



as "10 mEq." We agree the total drug amount in the container needs to be more prominent, but the concentration per mL and total volume should also be displayed for easy viewing for proper setting of infusion rates from smart pump drug libraries. We've asked Hospira to modify the way this information is expressed on these and other strengths of IV potassium chloride.

⚡ Lbs/kg confusion. A pharmacist was asked to help determine the dose of **CUBICIN (DAPTOmycin)** for a patient with Staphylococcal bacteremia. While checking the patient's weight, the pharmacist noticed it had been entered into the computer as 150 kilograms (kg) instead of 150 pounds (lbs), which is 68 kg. The person entering the weight failed to convert lbs to kg after weighing the patient on a scale that measured weight in lbs. Had the pharmacist based the dose on the incorrect weight, the patient would have received more than twice

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LASA survey continued from page 1 chasing procedures (57%), transcription of drug orders (60%), and prescribing (65%).

Table 1 (page 3) lists specific risk-reduction strategies and how frequently they were reported as being employed by respondents. The most frequently implemented risk-reduction steps involved avoiding unit stock of LASA drugs and dispensing the products from the pharmacy in unit doses. Risk-reduction steps involving patients—such as investigating their concerns about drug appearance—were the least frequently employed group of strategies, as were redundancies, particularly prescribing by brand and generic names, bar-coding, and daily physician review of currently prescribed drugs. Including the drug's indication when prescribing medications also scored low, with only a few respondents employing this strategy. Not listed as a choice on our survey, automated dispensing cabinets were mentioned by some respondents as one means of decreasing mix-ups if the LASA drugs are stored in separate drawers that open only when selected, and if the LASA drug names are easily distinguishable on the screen.

Effectiveness of risk-reduction steps

On average, about 82% of all respondents believe the risk-reduction strategies taken in their organization to guard against confusion with LASA drug name pairs have been effective. However, pharmacists (86%) were more likely to believe this than nurses (76%). Importantly, about three-quarters of staff nurses (76%) and pharmacists (78%) agreed that the strategies taken by their organizations to guard against confusion had actually prevented them from making a mistake with the targeted LASA drugs.

Conclusions

Compliance rates with TJC NPSG for LASA drugs have been high: at least 90% in all types of organizations and 95% in 2008 for hospitals. Yet, our survey suggests that more can be done

to reduce the risk of errors with LASA drugs. The first point of business: All clinical staff involved in medication use, particularly frontline nurses, pharmacists, physicians, unit secretaries, and technicians, need to be aware of the organization's list of LASA products, how it was selected and is updated, what it means, why it is important to patient safety, and the steps laid out to reduce mix-ups.

Keeping the list manageable is also crucial. A manageable number of drug name pairs on the list should not prevent you from taking steps—from bar-coding technology to the use of tall man letters when appropriate—to reduce mix-ups among many different products with LASA names. However, the targeted LASA list maintained in your organization should serve to draw special attention to a finite number of products that can cause great harm if confused, and to promote knowledge of and compliance with drug-specific risk-reduction strategies. Further, when adding a new name pair to the list, an awareness campaign is needed. In addition, don't forget to employ risk-reduction strategies that target the procurement, transcription, and prescribing of the drug name pairs on your LASA list, and to expand the patient's role to help ensure a mix-up does not happen—all areas our survey results suggest are often overlooked.

TJC is currently seeking comments on proposed changes to the NPSGs (www.jointcommission.org/Standards/FieldReviews/fr_npsg_hap.htm). For LASA drug names, TJC plans to move this NPSG to the Medication Management standards. The standard will still require an annually reviewed list of LASA medications, but the minimum number of drug name pairs is no longer specified. The proposed elements of performance state that the LASA list must be based on a review of the LASA medications published by ISMP (www.ismp.org/Tools/confused_drugnames.pdf). As in the current

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the correct amount. Weights should always be based on the metric system. Scales that weigh in either lbs or kg should default to kg. ISMP consulting staff have seen mistakes where both lbs and kg prompts are present on forms. Likewise, we've observed problems with medication administration records that allow the weight to be recorded in lbs or kg. Forms/screens where weights must be recorded should only prompt for the value in kg. It is important that all pre-printed order sets, protocols, guidelines, and computer screens only prompt for kg weights. To prevent errors, weigh patients on scales that only measure in kg. When purchasing new scales, be sure they default to kg weights.



U looks like 4. The handwritten order below was misread as **NOVOLOG** (insulin aspart) "54 units" instead of the intended "5 Units." The word "Units" had been written out, but the letter "U" looked like the number "4," and the remaining part of the word "nits" was read as "units." The mistake was made by three practitioners who either

NOVOLOG 54mg SQ

dispensed or administered the medication. The patient received the large dose of insulin and required treatment for severe hypoglycemia. This error occurred despite the prescriber's avoidance of the abbreviation "U" for units (which has also been misinterpreted as "4" or "0"). Electronic prescribing is one way to reduce the risk of misinterpreting handwritten orders. Maintaining adequate space between the numerical dose and unit of measure can also increase correct interpretation of the dose. In the hospital where this error occurred, consideration is being given to requiring both a numerical and written number dose (e.g., 5 [five] units) for all handwritten insulin orders, similar to outpatient prescriptions that require the quantity of controlled substances to be spelled out (e.g., 30 [thirty]). Postscript: The order above also includes an error-prone abbreviation, SQ. Write out subcutaneous or abbreviate as "subcut."



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 NPSG, organizations are required to take action to prevent errors involving the interchange of the products on the list.

We thank all 842 respondents who participated in our survey. We appreciate responses from clinical staff who admitted little or no knowledge about their organization's LASA list. We also appreciate the insightful comments participants added to the survey. As with our other surveys, we learned from your responses, which can be used to strengthen our understanding and recommendations regarding LASA drugs.

In the News

■ **Enteral Nutrition Practice Recommendations.** In the March/April 2009 issue of the *Journal of Parenteral and Enteral Nutrition*, the American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.) published its new, comprehensive set of practice recommendations for healthcare teams involved in the delivery of enteral nutrition. These recommendations were developed by an interdisciplinary taskforce. Also included with the recommendations are sample order sheets, label templates, a formula hang time chart, and much more. To view, go to A.S.P.E.N.'s website at: www.nutritioncare.org/safety.

■ **Patient safety in obstetrics.** A study published in the May issue of the *American Journal of Obstetrics and Gynecology* indicates that a safety nurse position, created to oversee a comprehensive patient safety program, helped cut adverse obstetrical outcomes by 40%. An AMA News article about the study (www.ama-assn.org/amednews/2009/05/18/prsb0518.htm) reported that the hospital had created the position of obstetrics safety nurse to help collect data and improve adherence to three dozen protocols and guidelines. The nurse also ran the event-reporting system, reviewed neonatal logs daily, formally evaluated obstetrics outcomes, and identified adverse-event cases and systemic weaknesses. The article also provides

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Table 1. Risk-reduction steps for LASA Drug Name Pairs

Risk-reduction steps		Have these steps been taken in your organization? (%)			
		Yes Fully	Yes Partly	No	Don't Know
Limit Access	Avoid unit stock of certain concentrations, strengths, forms	61	31	3	6
	Dispense the targeted drugs in unit doses	67	24	3	6
	Limit use to a single product/strength	29	50	12	8
	Limit variety of stock in patient units	53	38	3	6
Separate Storage	Separate LASA drugs in pharmacy	47	21	7	25
	Separate LASA drugs in patient units	57	24	8	12
	Separate storage of different strengths, forms, releases (e.g., immediate/sustained)	44	32	13	11
Differentiate	Stock potentially confused drugs in different strengths (e.g., morphine/HYDROmorphine)	34	34	16	16
	Change appearance of LASA names on computer screens (e.g., bold font/color/tall man letters)	54	21	16	9
	Change appearance of LASA names on shelves/bins (e.g., bold font/color/tall man letters)	50	24	12	14
	Change appearance of LASA names on pharmacy labels (e.g., bold font/color/tall man letters)	50	23	18	10
	Use auxiliary labels	33	29	20	18
	Affix "name alert" stickers to areas where LASA products are stored	47	25	18	10
Add Redundancy	Prescribe by brand and generic names	23	24	40	12
	Include brand and generic names on MARs	56	19	17	8
	Employ double-checks (manual)	44	36	11	9
	Employ double-checks (technology—bar coding, electronic prescribing)	29	29	33	8
	Print current medications daily from the pharmacy computer system for physician review	32	8	43	17
Improve Access to Information	Specify the drug's indication when prescribing medications	18	42	31	9
	Display entire drug names on screen when stems are used as a mnemonic (e.g., "Met")	61	14	8	18
	Specify the dosage form, drug strength, and complete directions on prescriptions	69	2	4	7
	Consider the possibility of name confusion when adding a new product to the formulary	51	22	5	23
	Utilize computerized alerts to remind providers about potential problems	40	30	18	12
Include the Patient	Advise patients taking LASA drugs about the risk of mix-ups and how to avoid them	13	27	30	30
	Encourage patients to question medications that look different than expected	35	35	11	20
	Investigate patient concerns about drug appearance	49	26	7	19
Ensure Staff Awareness	Educate staff involved in handling LASA drugs about risks and risk-reduction strategies	45	45	6	5
	Ensure knowledge of differences among LASA drug name pairs (e.g., lipid vs. conventional products, morphine vs. HYDROmorphine)	40	46	6	7



In the News continued from page 3 information on a promising Premier, Inc. initiative with 16 hospitals undertaking an obstetrics safety program that, due to current economic conditions, does not include a dedicated full-time obstetrics safety nurse.

■ Fluorouracil antidote on the horizon?

Emergency use of an investigational drug, vistonuridine, is showing promise for reducing potentially fatal side effects of fluorouracil overdose. According to a May 18, 2009, *Medical News Today* article, a study of vistonuridine for emergency use in treating fluorouracil overdoses was reported June 1 at the annual meeting of the American Society of Clinical Oncology (ASCO) (www.medicalnewstoday.com/articles/150433.php). Vistonuridine was given under FDA's emergency-use Investigational New Drug provisions. All 17 of the vistonuridine-treated patients with a fluorouracil overdose recovered while 11 of 13 patients who did not receive vistonuridine died. Because no antidote for fluorouracil is approved today, the manufacturer, Wellstat Therapeutics, has been responding to emergency requests for vistonuridine.

■ **CE on insulin errors.** *Avoiding Errors Associated with Insulin Therapy*, a continuing education (CE) article authored by ISMP nurse Hedy Cohen et al., was posted on MedScape in May (<http://cme.medscape.com/viewarticle/702444>). CE credits are free for physicians, pharmacists, and nurses. Set up a free user name and password to access this and other articles.

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Report medication errors to ISMP by calling: 1-800-FAIL-SAF(E).

Message in our mailbox **A nursing perspective on ADCs**



After publishing a feature article about automated dispensing cabinets (ADCs) in our April 2009 newsletter, we received compelling comments from one of our readers about additional pressures many nurses confront when using ADCs. Our article may have fallen short in clearly portraying all of the issues from a nurse's perspective, as our reader has done so eloquently. We're sharing excerpts of these comments with you in the hope that you will let us know your thoughts on the issues as well.

The topic of automated dispensing cabinets (ADCs) is very important to nurses because it impacts nursing practice. However, most of what is written about their implementation and use comes from predominantly pharmacists' perspectives. Nurse researchers haven't done enough research on nurses' perspectives on ADCs, so we need to take accountability for the fact that the nursing perspective of how ADCs are utilized is not widely available. However, nurses "turn off" when they perceive that problems are attributed to them without discussion to acknowledge their concerns.

I believe ADCs were originally promulgated not for patient safety, but rather to capture medication charges and control pilfering of medications on the unit. (I've had pharmacists tell me that the latter reason represented the primary argument when urging their hospitals to implement ADCs, so I'm probably hypersensitive to that particular issue). Nurses embraced ADCs from the viewpoint of not having to wait for medications to be delivered to the unit and to decrease requirements for narcotic counts.

Studies show that wrong-time are reduced with ADCs because medications are readily accessible and don't have to be delivered from the pharmacy. The rationale for ADC overrides is also an accessibility issue—the nurse decides the risk from delay in drug administration outweighs the risk of not having a pharmacist review the order first. I am firmly in favor of a pharmacist's review of all medication orders before administration, but we need to stop beating on nurses and figure out why they don't wait for pharmacy review of the order, and then fix the system to eliminate those barriers.

One of the significant procedural errors by nurses is taking more than one patient's medications out of the ADC at a time, often because nurses have to queue up to use the ADC. Another problem is that the dividers in some drawers allow drugs to move from one bin to another. Also, students aren't given access to the ADC, so they aren't getting much opportunity to learn proper use of the technology while they are students. Or, the instructor or nurse has to remove multiple patients' medications from the ADC so students can access them, but this teaches students an unsafe practice.

Further, patient workloads weren't decreased when ADCs were implemented. It takes more time than other dispensing approaches (e.g., medication carts), so nurses feel they have to break procedure due to many competing demands on their time. There have been some interesting studies regarding the distances and time nurses spend walking around to provide care—walking to and from the ADC is a factor in this, especially as hospitals become more spacious. In addition, I've seen many hospitals that initiate ADCs as the primary method to distribute medications, invest thousands of hours in teaching nurses what buttons to push, but don't invest time in helping nurses redesign their workflow to accommodate the new technology. These pressures are all very frustrating to nurses and need to be addressed, hopefully someday soon.

ISMP consultants have observed similar issues and agree with the comments from this reader. We would love to hear from you about your experiences with ADCs. Tell us your success stories and frustrations so we can learn more from frontline nurses and, in turn, help play a role in addressing these longstanding issues. Please send your comments to ashastay@ismp.org. We look forward to hearing from you.