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## Catching Deadly Drug Mistakes

By LAURA LANDRO



A nurse misunderstands an abbreviation on a pharmacy order, and gives an accidental overdose of a drug that slows the heart rate, killing the patient. Intravenous fluids are administered after surgery at too-high a rate to a child, who then dies because of the error. Confusion over a drug name leads to insulin being added to infant nutrition IV solutions instead of the intended medication, heparin, an anti-clotting drug: The consequences are fatal.

Despite years of effort to make medications safer, mishaps like these still happen at an alarming rate. Medication errors cause at least one death every day and injure approximately 1.3 million people annually in the United States, according to the Food and Drug Administration. Now, new efforts are underway to quickly spread the word about such errors and offer guidance on how to prevent similar mistakes.

The non-profit Institute for Safe Medication Practices, which is certified by the federal government to collect error reports and other information about quality breaches, and the American Society of Health-System Pharmacists are launching a new National Alert Network for Serious Medication Errors. The network, which was unveiled last month, will be used to send email alerts to 35,000 pharmacists working in hospitals and health systems, as well as physicians and nurses, when a dangerous or life-threatening error is reported to ISMP. The two organizations are also in discussions to extend the network to as many as 26 other organizations that promote safe medication use. The hope is that widely spreading the word about such errors will cause doctors and pharmacists to be more cautious—and ultimately prevent future mix-ups. Relevant alerts will also be sent to 20,000 drugstore pharmacists.

"There is no method to widely share information about errors that occur, and get recommendations to keep them from happening, and without an alert network, the same types of errors have the potential to happen over and over again," says Bona Benjamin, director of medication use quality-improvement at the health system pharmacists group, known as ASHP.

The new effort comes at a critical time. Growing pressure on hospitals to cut costs and stretch staff in a tough economy may be fueling an increase in medication mistakes. In a survey ISMP concluded in November of 850 respondents—predominantly nurses and pharmacists working at staff or managerial positions in hospitals—nearly half reported a large or moderate negative impact on medication safety in their hospitals due to the economy, with 20% reporting mistakes in the past year with the most dangerous medications such as insulin, narcotics, heparin and chemotherapy.

Getting the wrong drug, the wrong dose or the wrong concentration can be deadly, as can receiving drugs that are administered too quickly, or using the wrong method, such as chemotherapy drugs meant to be delivered intravenously that have been mistakenly injected near the brain or spinal canal. And even if injuries aren't

permanent, they can cause severe discomfort: Mistaking ear drops for eye drops used after cataract surgery can cause burning, redness, swelling, or blurred vision.

Consumers can sign up for customized alerts about the medications they take and report problems they encounter with medications at ISMP's [consumermedsafety.org](http://consumermedsafety.org) Web site, and submit reports of errors directly at the FDA at [fda.gov/Safety/MedWatch](http://fda.gov/Safety/MedWatch). Patients and families should also ask hospital staffers and pharmacists to clearly explain what medications are being given, and to confirm that dosages and instructions for administering the drugs are being followed correctly. When picking up prescriptions at a pharmacy, advises Ms. Benjamin, it is best to ask for help from pharmacists both for prescription medications and for over-the-counter drugs if they aren't clear about proper dosing.

As part of a test run, the new alert network for serious errors distributed an alert last fall about a reduction of the concentration of iron in **Mead Johnson's** Fer-In-Sol oral infant iron drops. Though the change was made in the second quarter of 2008, ISMP President Michael Cohen says health care providers weren't widely aware of the move. As a result, he says, ISMP received reports of doctors prescribing doses in which infants did not get enough iron. Because pharmacists also used generic versions in which the concentrations had not been changed, some who received a correct prescription used the same amounts as they had under the previous concentration, resulting in infants getting too much iron, which can be toxic.

A spokesman for Mead Johnson Nutrition says it highlighted the dosing changes on the package, including a red banner on the front panel, explained the change on its consumer and professional Web sites and on package inserts, and took other steps. "Based on some subsequent feedback, we followed up with an additional communication piece that was faxed directly to pharmacies," the spokesman said.

Indeed, drug manufacturers and the FDA have stepped up measures to identify dangerous medication risks and reduce similarities between proposed names and products on the market. But mistakes can still happen with FDA-approved packaging. The culprits include illegible handwriting on a doctor's prescription, poorly communicated orders and drugs with names that sound alike or have similar labels for different dosages.

In two cases that made headlines, accidental overdoses of heparin killed three infants at an Indiana hospital in 2006 and threatened the newborn twins of actor Dennis Quaid in 2007. Packages with 10-unit per milliliter doses were confused with look-alike vials with a concentration of 10,000 units per milliliter; the incidents led to a change in heparin packaging.

Patient safety experts say that while an alert network holds promise to help reduce errors, a broader effort is needed from policy makers and hospital executives, who have been slow to adopt technologies such as electronic medical records and bar-coding systems that could reduce errors. "The patchwork of protections for consumers is incomplete," says Charles Denham, co-chair of a safe practices group for the National Quality Forum, the leading government advisory body on health-care quality standards. Electronic medical records systems can eliminate the danger of illegible handwritten orders, and have programs to automatically question drugs or doses that don't match up with a patient's age, condition, or diagnosis. And bar-coding systems require drugs to be scanned like soup at a supermarket, acting as an automatic check that the prescribed drug is the one being administered at the bedside.

Health care providers submit reports confidentially to ISMP, which by law are considered privileged and legally protected from discovery so they cannot be used in malpractice suits. ISMP reports on the problems without disclosing where they happened in a series of industry newsletters. But the new network for the most serious medication errors "will increase the reach of alerts dramatically," says ISMP's Mr. Cohen, because it will send them largely to professional organizations such as ASHP which can transmit them instantly to members and be more effective in spurring them to action. ISMP also works closely with the FDA; an FDA spokeswoman says the agency asks ISMP to feature problems the FDA identifies first, so the issues get more exposure, but ISMP sometimes learns of issues first and notifies the FDA.

Drug companies often ask ISMP to evaluate a new drug name to make sure it won't be confused with another

product, as confusing look-alike drug names and packages can also lead to problems. For example, a group of eye, ear and nose hospitals is asking health care providers to sign an online petition ([www.nyee.edu/lasa-e-petition.html](http://www.nyee.edu/lasa-e-petition.html)) urging the FDA and producers of ophthalmic products such as eye drops to change an industry system adopted in 1996 which uses color-coding to differentiate product categories. The petition says the potential for confusion has only grown because color-coding bottles has made items within each product class harder to differentiate—such as eye drops with different formulations in nearly identical vials made by Falcon Laboratories, the generic affiliate of Alcon Inc.

A spokeswoman says Falcon that "within the limits of the small bottle and packaging sizes typical of ophthalmic medications, Falcon strives to provide packaging that helps health care providers and patients differentiate one drug from another."

In some cases, hospital staff may not be aware of the risks of improperly administering medications. The new network also sent out an alert about an ISMP warning last August that children who receive plain IV fluids to hydrate them after surgery are at risk of a deadly complication known as hyponatremia in which there is not enough sodium in the bodily fluids outside the cells. ISMP received reports on the deaths of two children at two different hospitals; in one case the fluids were administered too quickly; in the second case, the child apparently did not receive a prescribed infusion of sodium chloride to keep his electrolytes in balance and prevent hyponatremia.

While there are medical studies documenting the risks of hyponatremia, "it is not something we believe is generally recognized by hospital staff who care for kids post-op," Mr. Cohen says.

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