



Nurse Advise-ERR™

Educating the healthcare community about safe medication practices

November 2004 ■ Volume 2 Issue 11

The *five rights* cannot stand alone

Every nurse has learned about the *five rights* of medication administration: the right patient, drug, time, dose, and route. They're regarded as the gold standard for safe medication practices. Yet many errors, including lethal ones, have occurred in situations in which nurses firmly believed they had verified each of the *five rights*. Why can't nurses rely *solely* on following the *five rights* to prevent medication errors?

The *five rights* are goals of safe medication practices, but they offer

little procedural guidance on how to meet these goals. For example, how does a nurse check the *right dose* of a newer medication if the drug reference texts on the unit are several years old and there is no readily available pharmacist? Is depending on the prescriber's dose enough if the nurse knows little about the new medication? How does a nurse providing care in an outpatient psychiatric facility identify the *right patient* if name bracelets are not used? Can she depend on verbal questioning if the patient is confused? Without adequate systems in place to help nurses achieve the goals of the *five rights*, errors can and do happen.

The *five rights* focus on individual performance of the nurse and do not reflect that safe medication practices are a culmination of multidisciplinary efforts and reliable systems. Despite nurses' best efforts, the use of trailing zeroes, ambiguous drug labels, lack of effective double checks, inadequate staffing patterns, poorly designed medical devices, illegible handwritten orders, and many other system issues can contribute to nurses' failure to accurately verify the *five rights*.

The *five rights* do not take into account human factors and the significant contribution they play when errors occur. "Human factors" refer to the study of the interrelationships between humans, the tools they use, and the environment in which they work. For example, nurses who select the wrong medication with a label or package similar to the correct drug may honestly think that they read the label to verify the *right drug*. In truth, they may have even read it carefully. However, they did not *see* it correctly.

Human factors researchers call this *confirmation bias*. As we gain nursing experience, we develop a picture in our mind of the items we work with every day. When we go to select a familiar item, we are sometimes unable to see any disconfirming evidence if the wrong product is selected. Instead, we see only what we intend to find, especially if enough things match the picture in our mind. It is almost as if our minds are fooled by an optical illusion. It is this kind of human factors variable, among many, that can contribute to errors when our minds make corrections for what our eyes are seeing.

The *five rights* are vitally important, but not the "be all that ends all" in medication safety. Unfortunately, managers may admonish nurses who make an error for not following the *five rights* without recognizing and addressing the human factors and system-based causes of the errors. Licensing bodies often follow suit, perpetuating the myth that the *five rights* are the only things needed to prevent errors. While the *five rights* are essential goals, they cannot stand alone in our efforts to prevent medication errors.

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safetywire

⚡ Mix-up on the screen. An ICU nurse caught herself retrieving a vial of diazepam instead of diltiazem. She was removing the medication from an automated dispensing cabinet that was not linked to the pharmacy computer system. Thus, all drugs available in the cabinet appeared on the screen, in alphabetical order, not just the medications ordered for the patient. The mix-up between these two products occurred as the nurse scrolled down the screen to find the drug name. Diazepam appeared first and was mistakenly selected instead of diltiazem. If dispensing cabinets are not linked to the pharmacy computer so that orders can be screened for safety before making medications available, they simply function as locked storage cabinets. Thus, the risk of choosing the wrong drug is greater than if the screen listed only the patient's prescribed medications. In these situations, talk to your pharmacists to see if both the generic and brand names can be listed on the drug selection screens, and if tall man lettering (e.g., di**AZ**epam, di**LTI**Azem) can be used for look-alike names that appear sequentially on the screen. (See the September 2004 issue for more about tall man lettering.) Shading or color on the selection screen is another way to differentiate look-alike drug names.

to the point

➔ "Safety is usually a continuous fight with human nature. Understanding this basic point will lead to less victim blaming and fault finding when investigating an injury."

-- E. Scott Geller

niceCatch | Involve non-clinical staff in patient safety discussions



A patient safety nurse was visiting the operating room to speak with staff about a safety matter. She happened to enter one of the utility rooms where she discovered a totally different safety issue. She noticed a semi-rigid plastic bottle with graduated volume markers on one side, similar to containers of sodium chloride irrigation solution; only this one was filled with a very pale pink disinfectant/ deodorant solution. The bottle also had a plastic loop affixed on the bottom, similar to the loop used for hanging irrigation solutions on an IV pole.

After talking with housekeeping personnel, the nurse discovered that it was a routine practice for housekeeping to obtain bottles of sterile irrigation solutions, add a disinfectant concentrate to the contents, and then place a manufacturer-provided label over the sodium chloride irrigation label. But if staff ever forgot to re-label these containers, or if they placed the label on the opposite

side of the container, the original sodium chloride irrigation label would still be visible. The bottle would then be at risk for a mix-up with solutions meant for therapeutic patient use.

Similar mix-ups have been reported. For example, oral antibiotic suspensions have been inadvertently reconstituted with 10% formalin solution. Empty plastic gallon containers of distilled water had been used as storage containers for formalin. One of the formalin containers (relabelled on just one side) had been inadvertently placed with the other containers of distilled water and then used to fill a reservoir in the pharmacy that holds the diluent used to reconstitute oral medications.

Take a look on your unit for similar situations. Hold discussions with your non-clinical staff about why it is dangerous to repackage non-drug items into empty medication or solution containers. Your interdisciplinary discussion may uncover safety issues you never knew existed!

All is not as it seems...



What's the vancomycin level referenced in this order?

*if Am Vancomycin level is <10,
give 1 gram IV - 1 dose*



The physician who wrote this order intended to have the nurse administer another 1 g dose of vancomycin intravenously if the patient's drug level the next morning was "less than 10." However, the symbol for "less than" was written in a way that made the nurse interpret the number 10 as the number 40. The error was recognized after the nurse called the pharmacy to ask if a trough level of 35 mcg/mL was close enough to give the next dose. Our July 2004 issue included a table of frequently confused medical abbreviations and symbols, which included the symbols for "greater than" and "less than" (visit www.ismp.org/PDF/ErrorProne.pdf to view the table). Avoid using these symbols when transcribing medication orders, and alert prescribers to the risk of misinterpretation when applicable. It's also a good idea to consult a chart or text for common peak and trough drug levels.

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Report medication errors to ISMP at 1-800-FAIL-SAF(E).

Message in our mailbox



More about Avinza.

While our last issue mentioned that **AVINZA** (morphine sulfate extended-

release) capsules should never be chewed, several readers reminded us that, in addition to swallowing the capsules whole, the manufacturer (Ligand) suggests *sprinkle dosing* or *gastrostomy tube (G-tube) administration* as alternative methods of administration. This involves opening the capsule and sprinkling the beads directly on applesauce, or mixing the beads with apple juice for administration through a G-tube. However, the capsule contains both immediate- and sustained-release beads, so the patient should not chew the beads once they are sprinkled on applesauce, nor should the beads be dissolved in apple juice. Thus, the manufacturer's instructions must be followed explicitly.

For example, the applesauce must be at room temperature or cooler and swallowed, without the risk of chewing, immediately after sprinkling the capsule contents on it. The patient should then rinse and swallow. For apple juice administration, the contents of the capsule should be sprinkled into 10 to 20 mL of juice and given immediately through a 16 French or larger G-tube. Nasogastric tubes are not recommended due to smaller diameter lumen. The syringe must be held in a horizontal position to avoid agglomeration of the beads and blockage of the G-tube. The container that held the juice should then be rinsed with another 10 mL of apple juice, drawn into the same syringe, and used to flush the G-tube.

Unfortunately, these important instructions for G-tube administration are not part of the package insert or product label; they can be obtained from the manufacturer by calling 1-888-8-AVINZA (28-4692).