Bad “Marks” for Order Communication

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Problem: Marks on order forms—whether stray or intentional—can lead to errors. Several reports that have been submitted to the Institute for Safe Medication Practices demonstrate this problem.

In one case, a 70-year old patient received a ten-fold overdose of hydromorphone HCl (Dilaudid®, Abbott) after a pharmacist misinterpreted a circle with the prescriber’s initials in it as a zero. A physician prescribed patient-controlled analgesia (PCA) using hydromorphone 2 mg in 250 ml of sodium chloride 0.9% injection, creating a concentration of 8 mcg/ml. While writing the order on a preprinted form, the fellow mistakenly entered the 8-mcg/ml concentration on the wrong line. He quickly recognized his mistake, scribbled over the erroneous 8-mg entry, and wrote the correct dose of 2 mg/250 ml. He then initialed the change and circled it (Figure 1).

Unfortunately, the pharmacist misinterpreted the circled initials as a zero and dispensed 20 mg of hydromorphone in 250 ml of normal saline (NS), yielding a concentration of 80 mcg/ml. The bag was labeled as “20 mg/250 ml NS,” but the concentration was mislabeled as “8 mcg/ml.”

Before this drug was administered, two nurses checked the bag, using the original order, but they verified only the labeled concentration. Consequently, the error was not noticed because the concentrations on the order form and the mislabeled bag were the same. Later, a night nurse found the error while checking the bag against the original order. The patient exhibited no ill effects.

We have also seen initials or the letters “M,” “K,” and “O” at the beginning of each order to indicate that a drug has been transcribed onto the medication administration record (MAR) or a Kardex system, or has been Ordered. Such markings can lead to misinterpretation. For example, an order for one angiotensin-converting enzyme inhibitor was converted into another one with the stroke of a pen. The order on the third line of the graphic in Figure 2 is actually for Accupril® (quinapril, Pfizer), but it looks more like Monopril® (fosinopril sodium, Bristol-Myers Squibb).

A unit clerk used an “M” to check off each drug order as a way of denoting that it was transcribed to the MAR. The writing might have been clear on the original order, but when the pharmacy department reviewed the non-carbon order copy, it was interpreted as “Monopril.”

Safe Practice Recommendation: Errors related to order transcription can be reduced with computerized prescriber order entry (CPOE) systems. Until such systems are in place, however, nurses and unit secretaries should be warned that initials, letters, checkmarks, and other incidental marks used during the transcription of handwritten orders can obscure or alter a medication order’s appearance. Such marks tend to result in errors when “no carbon required” (NCR) order copies are sent or faxed to the pharmacy. If applicable, order copies should be sent to the pharmacy before transcription notation is documented on the forms.

Here are some suggestions to help prevent these kinds of errors:

1. To be safe, notations to signal that an order transcription is complete or verified should be made at the bottom of the order to avoid interference with individual orders.
2. Using a red pen can help to differentiate marks on the original order copy.
3. If checkmarks or notations must be used for large order sets, order forms should be designed with a separate column or box in which to place the checkmark or notation to communicate that an order has been transcribed. Otherwise, alternative methods of communicating particulars about order transcription should be established to avoid unnecessary marks or notes on the order form itself.
4. Prescribers should avoid using numbers to organize their handwritten orders.
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5. Prescribers should always list the dose of a medication after its name, not before it.

6. To correct errors in a medical record, the person making the correction should do the following:

a. cross out the error with a single line.
b. list his or her initials in the upper right-hand corner, directly next to the erroneous entry (not the corrected entry).
c. avoid the unnecessary and risky practice of placing a circle around his or her initials.

The reports described in this column were received through the USP-ISMP Medication Errors Reporting Program (MERP). Errors, close calls, or hazardous conditions may be reported on the ISMP (www.ismp.org) or the USP (www.usp.org) Web site or communicated directly to ISMP by calling 1-800-FAIL SAFE or via e-mail at ismpinfo@ismp.org.