PA PSRS
Pennsylvania Patient Safety Reporting System

Patient Safety Advisory

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Improving the Safety of Telephone or Verbal Orders

Verbal orders—those that are spoken aloud in person or by telephone—offer more room for error than orders that are written or sent electronically. Interpreting speech is inherently problematic because of different accents, dialects, and pronunciations. Background noise, interruptions, and unfamiliar drug names and terminology often compound the problem. Once received, a verbal order must be transcribed as a written order, which adds complexity and risk to the ordering process. The only real record of a verbal order is in the memories of those involved.

When the recipient records a verbal order, the prescriber assumes that the recipient understood correctly. No one except the prescriber, however, can verify that the recipient heard the message correctly. If a nurse receives a verbal order and subsequently calls it to the pharmacy, there is even more room for error. The pharmacist must rely on the accuracy of the nurse's written transcription of the order and the pronunciation when it is read to the pharmacist. Sound-alike drug names also affect the accuracy of verbal orders. There have been numerous reports submitted to PA-PSRS in which drug name pairs have been misheard.

For example:

1. A misheard verbal order led to a patient's receiving erythromycin instead of azithromycin.
2. A nurse mistook a verbal order for Klonopin 0.1 mg when the intended medication was clonidine 0.1 mg.
3. A telephone order relayed to pharmacy by a nurse for "Viscerol" was clarified by pharmacy as Vistaril.

Drug names are not the only information prone to misinterpretation. Numbers are also easily misheard. Examples of this type of error reported to PA-PSRS include:

1. A phone order mistaken for Toradol 50 mg was administered prior to the pharmacy review, when the intended dose was 15 mg.
2. A patient told a doctor that she regularly took five 30 mg phenobarbital tablets at bedtime, and the doctor wrote for 530 mg of phenobarbital. When the pharmacist called to clarify, the physician changed the order to 150 mg.
3. An emergency room nurse thought the physician stated that a patient was to receive "1 and 1/2 teaspoons" of Zithromax, which was given. In checking the written order, the dose was noted for 1/2 teaspoon.

Similar cases have also been reported to the Institute for Safe Medication Practices (ISMP). In one example, an emergency room physician verbally ordered "morphine 2 mg IV," but the nurse heard "morphine 10 mg IV." The patient received a 10 mg injection and developed respiratory arrest. In another case, a physician called in an order for "15 mg" of hydralazine to be given IV every 2 hours. The nurse, thinking that he had said "50 mg," administered an overdose to the patient who developed tachycardia and had a significant drop in blood pressure.[1]

Communicating multiple medications verbally at the same time also increases the opportunity for error. ISMP has reported on a case in which a premature baby girl developed respiratory problems shortly after birth. Plans were made to transfer her to a NICU at a nearby children's hospital. While awaiting transfer, the physician gave a verbal order to administer ampicillin 200 mg and gentamicin 5 mg IV push. The nurse misheard the second antibiotic order as gentamicin 500 mg. The pharmacy was closed, so a nursing supervisor obtained seven vials of an adult concentration of gentamicin (80 mg/2 mL vials) from a night cabinet. The pediatric concentration (20 mg/2 mL vials) also was available in

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the same night cabinet, but the nursing supervisor never noticed it. She brought the gentamicin to the patient care unit, where one nurse drew up 12.5 mL of medication from the seven vials, and another nurse gave the medication IV push to the infant. The error was discovered when the ambulance crew from the children's hospital arrived and asked what the infant had been given. Before the infant was transferred, her gentamicin level was 590 mcg/mL. After transfer, levels declined steadily over the next several days, and renal function continued to be normal.[2]

Medication errors can also occur when communicating a patient's lab values verbally. In reports submitted to PA-PSRS, many of these types of errors involved misinterpretation of blood sugar levels for patients on insulin therapy.

Examples include:

1. A nursing assistant verbally told a nurse the results of a patient's Accu-check results. The nurse misinterpreted what she was told and based insulin coverage on a falsely high blood sugar, so the patient received 4 units insulin when they should not have received any insulin.
2. A patient was given 10 units of regular insulin based on blood sugar verbally reported to be 353. The patient's blood sugar was 85.
3. A nurse thought that the nursing student stated the patient's blood sugar as 257 when it was 157. The patient was given 6 units regular insulin instead of 2 units regular insulin.

Another significant problem that arises with the use of verbal orders are breakdowns in the communication of relevant patient information, such as the current medication list, diagnoses, or co-morbid conditions and allergies. When medications are ordered verbally and the normal pharmacy check systems are not in place (such as when medications are available in unit stock, or when pharmacy is closed but accessible by non-pharmacy staff), more issues can arise, as evident in this case reported to PA-PSRS:

> *A nurse received a verbal order from a physician for Zosyn. The patient had a documented allergy to penicillin, and both the physician and nurse were unaware that Zosyn is contraindicated for this patient. The pharmacy staff was gone for the day, and medication was obtained from the pharmacy after hours from the night cabinet. Two doses were administered to the patient with no ill effect or adverse reaction. The following day, the pharmacy notified nursing that Zosyn was derivative of penicillin, and the medication was discontinued.*

The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) recently added a National Patient Safety Goal to address the error-prone procedure of verbal orders. The goal states that the receiver of the verbal or telephone order should **write down** the complete order or enter it into a computer, then **read it back**, and receive **confirmation** from the individual who gave the order or test result.[3]

Reports submitted to PA-PSRS include errors that could have been prevented if this technique had been used. For example:

> *A nurse gave a medication upon receipt of a verbal order from a physician. The nurse did not write the verbal order into chart first. The nurse administered the medication, guaifenesin with codeine, then read what the physician had written later in the chart. The physician wrote the order for Phenergan VC with codeine.*
>
> *A nurse received a verbal order from a physician but did not write the order in the chart. When the medication came from pharmacy, she assumed it was for her patient. The patient was given one bottle of phospho-soda bowel prep, which belonged to another patient. The patient who received the solution did not have an order for the phospho-soda or a colonoscopy.*

Physicians at Cincinnati Children's Hospital Medical Center recently studied error rates with and without the use of read-back of orders given verbally and then entered into the computerized prescriber order entry system. In the Cincinnati facility, the attending physician or chief resident typically communicates orders verbally during rounds, and a resident physician then enters them into the computer system at a bedside terminal. In the first part of the study, the team on rounds accepted 70 consecutive oral orders and entered them into the computer. After rounds, they examined the orders and found a 9.1% error rate, mostly in drug dosages that would not have affected patient safety. However, in two in-

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stances, the resident ordered the wrong drug. In the second part of the study, before leaving a patient's room, the resident read back the order entered into the computer. The attending physician or chief resident then verified its accuracy. **The researchers examined 75 orders and found that the error rate dropped from 9.1% to zero.** The process added only seconds to each visit to a patient's room, so it did not slow down physician rounding.[4]

Safe Practices

Faxes, electronic mail, and point-of-care computerized prescriber order entry are reducing the need for verbal orders in non-emergent situations. However, it is very unlikely that they will ever be totally eliminated. Sharing the following safe practices with nurses, pharmacists, and physicians in your facility may help to stimulate discussion. While all of these suggestions may not be feasible in every organization, they can help you to evaluate your current practices.

Safe practices include:

- Limiting verbal communication of prescription or medication orders to urgent situations in which immediate written or electronic communication is not feasible. For example, verbal orders can be disallowed when the prescriber is present and the patient's chart is available. Verbal orders can be restricted to situations where it is difficult or impossible for hard copy or electronic order transmission, such as during a sterile procedure.
- For prescribers, enunciating verbal orders clearly. For order recipients, writing down the complete order or entering it into a computer, reading it back, and receiving confirmation from the individual who gave the order. In a safe environment, these steps are treated as essential and become habit even when the recipient is confident they understood the order correctly. As an extra check, either the prescriber or listener can spell unfamiliar drug names, using "D as in David," "B as in Bravo," and so forth. Pronouncing each numerical digit separately can also help avoid confusion—saying, for example, "one six" instead of "sixteen" which is often heard as "sixty."
- For all medication orders, including the purpose of the drug to ensure that the order makes sense in the context of the patient's condition. Most reported sound-alike name pairs have different indications.
- Including the mg/kg dose along with the patient's specific dose for all verbal neonatal/pediatric medication orders.
- For prescribers, asking for important patient information such as drug allergies, lab values and diagnosis or comorbid conditions that may effect the prescribed medication(s).
- Expressing doses of medications by unit of weight (e.g., mg, g, mEq, mMol). Verbal orders that specify the dose in terms of the number of tablets, ampuls, or vials, and orders that state a volume without also expressing the concentration, have led to errors and even serious patient injury because many medications are often available in several package sizes and strengths.
- Having a second person listen to a verbal order whenever possible. Students or other inexperienced staff may require special supervision when handling verbal orders.
- Recording the verbal order directly onto an order sheet in the patient's chart. Transcription from scrap paper to the chart introduces another opportunity for error. Phone or pager numbers can be helpful in case it is necessary for follow-up questions.
- Recipients of verbal orders can be required to sign, date, time, and note the order according to prescribed procedures. Prescribers can be mandated to verify and sign/date orders within a predetermined time frame.
- Disallowing verbal orders for chemotherapy because of their complexity and potential for tragic errors.
- Disallowing medication requests from nursing units to the pharmacy unless the verbal order has been transcribed onto an order form and simultaneously

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faxed or otherwise seen by a pharmacist before the medication is dispensed.

- Limiting verbal orders to formulary drugs. The names of drugs unfamiliar to staff are more likely to be misheard and their uses and dosages may be less familiar.
- Limiting the number of personnel who may receive telephone orders to help ensure familiarity with facility guidelines and the ability to recognize the caller, which reduces the potential for fraudulent telephone orders.[1]
- Whenever possible, having a pharmacist receive verbal orders for medications and ensuring a mechanism for pharmacists to transcribe the orders directly into the medical record.
- Raising awareness of problematic drug name pairs at your facility based on your reports submitted to PA-PSRS so that practitioners can be prepared to challenge questionable orders as they are received.[5]

Tools for the Patient Safety Officer

Here are three things the Patient Safety Officer can do to improve the medication safety process with respect to verbal orders.

1. First, determine whether your facility's policies and procedures address verbal orders. If this topic is not addressed, consider adding it to existing policies and procedures, or develop new ones focused on this issue.

2. If you already have relevant policies and procedures in place, you can use the elements in Table 1 as a checklist to identify any potential gaps or room for improvement.

3. If your policies and procedures already address all the elements of a safe environment with respect to verbal orders, how closely are clinicians adhering to those principles? Table 2 presents a brief questionnaire you can adapt and administer quickly to gauge clinical staff's understanding of and adherence to the safe practices your facility has adopted.

Table 1.

Checklist for Policies and Procedures Related to Verbal Orders

Do your facility's policies and procedures:

- Describe limitations or prohibitions on the use of verbal orders?
- Provide a mechanism for the recipient to ensure validity/authenticity of the prescriber?
- List the required elements of a complete verbal order?
- Describe situations in which verbal orders may or may not be used?
- List and define the individuals who may send and receive verbal orders?
- Provide guidelines for clear and effective communication of verbal orders?

Source: Adapted from the National Coordinating Council for Medication Error Reporting and Prevention.[6]

Verbal Orders Toolkit

Visit the Patient Safety Authority website for a "Verbal Orders Toolkit" that includes:

- A poster to remind clinicians about the read-back procedure.
- A sample policy on verbal orders based on the guidance in this article.
- A copy of the survey presented in Table 2 in Microsoft Word format, which can be downloaded and edited to customize it for your facility.
- A brief, self-running Microsoft PowerPoint slideshow with audio narration on safe practices related to verbal orders, which can be downloaded and shown to front-line caregivers.

Notes

1. Institute for Safe Medication Practices (ISMP). Instilling a measure of safety into those "whispering down the lane" verbal orders. *Medication Safety Alert! 24 Jan,* 2001; 6(2):1-2.

2. ISMP. Verbal order spells near disaster. *Medication Safety Alert! 4 Sept,* 2002; 7(18):2.

3. JCAHO. National Patient Safety Goals. [cited 2006.] Available from Internet: http://www.jointcommission.org/PatientSafety/NationalPatientSafetyGoals/06_npsg_facts.htm

4. Vossmeyer MT. Improving patient safety using a verbal order read back process. Pediatric Academic Societies Annual Meeting; 2006 Apr 29; San Francisco (CA).

5. ISMP. Instilling a measure of safety into telephone and verbal orders. *Medication Safety Alert! Community/Ambulatory Edition.* 2003;2(6):2-3.

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Table 2. Sample Assessment Questionnaire on Verbal Orders

This questionnaire is intended to measure awareness of, understanding of, and adherence to facility policies and procedures regarding verbal orders. This presumes that the facility already has such policies and/or procedures, or that there is an established cultural norm that governs how such orders are given, received, and implemented.

The questionnaire is intended to be answered by physicians, nurses, pharmacists, allied health practitioners, or any other individuals who may be Involved in giving, receiving, relaying, or acting on verbal orders. "Correct" or desired answers are not identified because these may vary among different organizations or healthcare settings.

Before administering the questionnaire, determine whether all the questions make sense in the context of the unique characteristics of your facility. Consider whether any questions should be added, deleted, or revised. When analyzing the results, try comparing the responses from different groups of providers (e.g., physicians, nurses, pharmacists).

1	How familiar are you with our policies and procedures concerning verbal orders?	Very Familiar 5	4	Somewhat familiar 3	2	Not at all familiar 1
2	When taking a verbal or telephone order, how often does the recipient read back the order to the prescriber?	Always 5	4	Sometimes 3	2	Never 1
3	When giving verbal orders, how often do prescribers state each digit separately (e.g., saying "one, six" instead of "sixteen")?	Always 5	4	Sometimes 3	2	Never 1
4	Indicate your level of agreement with this statement: "Verbal or telephone orders are given only in emergency situations or when written orders are not possible (e.g., during a sterile procedure)."	Strongly agree 5	Somewhat agree 4	Neither agree nor disagree 3	Somewhat disagree 2	Strongly disagree 1
5.	When prescribers give verbal orders for medications, how often do they include the indication for the medication?	Always 5	4	Sometimes 3	2	Never 1
6.	Indicate your level of agreement with this statement: "I have personally witnessed or been involved in a case where a patient was injured or could have been injured because a verbal or telephone order was misinterpreted."	Strongly agree 5	Somewhat agree 4	Neither agree nor disagree 3	Somewhat disagree 2	Strongly disagree 1

6. National Coordinating Council for Medication Error Reporting [cited 2006 Feb 24.] Available from Internet: http://www.nccmerp.org/council/council2001-02-20.html

An Independent Agency of the Commonwealth of Pennsylvania

The Patient Safety Authority is an independent state agency created by Act 13 of 2002, the Medical Care Availability and Reduction of Error ("Mcare") Act. Consistent with Act 13, ECRI, as contractor for the PA-PSRS program, is issuing this newsletter to advise medical facilities of immediate changes that can be instituted to reduce serious events and incidents. For more information about the PA-PSRS program or the Patient Safety Authority, see the Authority's website at www.psa.state.pa.us.

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The Institute for Safe Medication Practices (ISMP) is an independent, nonprofit organization dedicated solely to medication error prevention and safe medication use. ISMP provides recommendations for the safe use of medications to the healthcare community including healthcare professionals, government agencies, accrediting organizations, and consumers. ISMP's efforts are built on a non-punitive approach and systems-based solutions.