Despite technology, verbal orders persist, read back is not widespread, and errors continue

In January 2017, we invited readers of our acute care, community/ambulatory care, long-term care, and nursing newsletters to complete an online survey to learn about the use of verbal orders that are spoken aloud (face-to-face), provided via telephone, or left on voicemail. The survey directed respondents to exclude verbal orders that occurred during order clarifications. We sincerely thank the 1,622 nurses (75%), pharmacists (23%), and other practitioners (2%) who completed the survey! Most respondents practice in a wide variety of hospital settings (87%), including medical/surgical units (31%), intensive care units (21%), inpatient pharmacies (18%), emergency departments (15%), procedural areas (14%), telemetry units (13%), and obstetrical units (7%). The remaining respondents practice in ambulatory clinics (6%), long-term care facilities (2%), community pharmacies (2%), or other facilities (3%).

Table 1. Medication classes received as verbal orders

<table>
<thead>
<tr>
<th>Medication class</th>
<th>Percent (%) reporting verbal orders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analgesics (controlled substances)</td>
<td>67</td>
</tr>
<tr>
<td>Agents to control blood pressure</td>
<td>59</td>
</tr>
<tr>
<td>Fluids for hydration</td>
<td>59</td>
</tr>
<tr>
<td>Analgesics (non-controlled substances)</td>
<td>55</td>
</tr>
<tr>
<td>Antiemetics</td>
<td>54</td>
</tr>
<tr>
<td>Anti-infectives</td>
<td>40</td>
</tr>
<tr>
<td>Antipsychotics, anxiolytics, sleep agents</td>
<td>38</td>
</tr>
<tr>
<td>Electrolytes</td>
<td>34</td>
</tr>
<tr>
<td>Gastrointestinal agents</td>
<td>31</td>
</tr>
<tr>
<td>Respiratory agents</td>
<td>30</td>
</tr>
<tr>
<td>Emergency drugs</td>
<td>29</td>
</tr>
<tr>
<td>Anticoagulants</td>
<td>28</td>
</tr>
<tr>
<td>Antidiabetic agents</td>
<td>28</td>
</tr>
<tr>
<td>Other controlled substances (not analgesics)</td>
<td>13</td>
</tr>
<tr>
<td>Anticoagulation reversal agents</td>
<td>10</td>
</tr>
<tr>
<td>Other medication classes</td>
<td>9</td>
</tr>
<tr>
<td>Oncologic agents/chemotherapy</td>
<td>2</td>
</tr>
</tbody>
</table>

ISMP conducted this survey to gain insight into the current use of verbal orders in today’s healthcare environment given the increased use of computerized prescriber order entry and electronic prescribing, which have the potential to reduce errors resulting from unclear handwritten and verbal orders. The survey results suggest that verbal orders are still used, and that the critical safeguard of reading back verbal orders for verification is limited. The potential for verbal orders to be misunderstood, misheard, or transcribed incorrectly makes them error prone, particularly given different accents, dialects, and drug name pronunciations by the prescriber and recipient of the order. Add in sound-alike drug names and dosing numerals (e.g., 50 vs. 15), background noise and disruptions, and the failure to seek verification, it is not surprising that errors with verbal orders continue to be reported. Further details about the survey results follow.

Survey Results

Methods used to communicate verbal orders. Most respondents reported receiving verbal orders during the past year via telephone (85%) and spoken face-to-face (74%). While only 4% of nurses and pharmacists reported receiving verbal orders left on voicemail, such occurrences were reported in both hospital pharmacies and patient care facilities (13%). ISMP continues to encourage the use of repetition and verification to help prevent medication errors. The survey directed respondents to exclude verbal orders that occurred during order clarifications. We sincerely thank the 1,622 nurses (75%), pharmacists (23%), and other practitioners (2%) who completed the survey! Most respondents practice in a wide variety of hospital settings (87%), including medical/surgical units (31%), intensive care units (21%), inpatient pharmacies (18%), emergency departments (15%), procedural areas (14%), telemetry units (13%), and obstetrical units (7%). The remaining respondents practice in ambulatory clinics (6%), long-term care facilities (2%), community pharmacies (2%), or other facilities (3%).

ISMP Releases Guidelines on Safe Subcutaneous Insulin Use

For years, insulin has been shown to be associated with more medication error-related harm than any other drug. The new ISMP Guidelines for Optimizing Safe Subcutaneous Insulin Use in Adults are designed to help healthcare practitioners prevent errors and improve outcomes for patients with diabetes who use insulin. The guidelines provide recommendations for avoiding errors and at-risk behaviors involving subcutaneous insulin across the entire medication-use process, including prescribing, preparation, administration, monitoring, and patient education. The document also addresses evolving practices, devices, and technologies that aim to enhance the safety of insulin use, such as with concentrated insulin and insulin pen devices. For a copy, visit: www.ismp.org/sc?id=2917.

SAFETY briefs

VinCRISStine extravasation unlikely with minibags. Twelve months of data collected at The Johns Hopkins Hospital found zero cases of extravasation among more than 1,300 minibag administrations of intravenous (IV) vinCRISStine after a recent change from administering the drug from a syringe. These results were recently presented at the Oncology Nursing Society (ONS) 42nd Annual Congress (www.ismp.org/sc?id=2921). ISMP Targeted Medication Safety Best Practice #1 calls for dilution of IV vinCRISStine in a minibag rather than dispensing and administering the drug in a syringe. This reduces the risk of an accidental mix-up with intrathecal medications, which are given via a syringe. For more information, visit www.ismp.org/sc?id=2917.

continued on page 2—Verbal orders >
> **Verbal orders**—continued from page 1

care units, particularly medical/surgical units, emergency departments, intensive care units, and telemetry units. In community pharmacies, telephone (96%) and voicemail (79%) were the primary modes of communicating verbal orders.

**Frequency of verbal orders.** For more than a quarter of respondents, at least 1 in every 4 orders is received verbally. Almost 12% of respondents indicated they received more than half of all orders during the past year as verbal orders, and another 14% reported receiving 26% to 50% of all orders as verbal orders. For most of the remaining respondents, verbal orders were received but less frequently—between 6-25% of all orders for 33% of respondents, and between 1-5% of all orders for 40% of respondents. Only 1% of all respondents told us they had not received any verbal orders in the past year.

**Read back verbal orders.** The Joint Commission (TJC) includes a requirement under the Provision of Care, Treatment, and Services (PC 02.01.03, EP 20) for the receiver of a verbal order to record it and read (not repeat) it back to the prescriber. This helps assure that one has not only heard an order correctly but also transcribed it accurately. Nevertheless, nearly half (45%) of all respondents who reported receiving telephone or spoken orders told us they do this less than 50% of the time. In fact, 16% of respondents said they read back verbal orders only 1-5% of the time, and 9% indicated they never carry out this important verification process. A few respondents commented that their organizations told us they had not received any verbal orders in the past year.

**Table 2. Examples of errors related to verbal orders** continued on page 3—**Verbal orders**

<table>
<thead>
<tr>
<th>Error type</th>
<th>Description of error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transcription errors</td>
<td>A verbal order was given to hold an antihypertensive medication if the patient’s blood pressure was less than a specific reading. When transcribed, the symbol for “greater than,” not “less than,” was used. The error was corrected before reaching the patient.</td>
</tr>
</tbody>
</table>
|                         | A prescriber called in an order for a one-time 
lorazepam dose for an agitated, anxious patient. The nurse entered the drug into the computer as “q4h PRN,” which was the default frequency, instead of as a one-time dose. The patient became oversedated after receiving multiple doses. |
|                         | A physician gave a verbal order to a pharmacist for zosyn (piperacillin-tazobactam) 300 mg/kg/day in divided doses every 6 hours. The pharmacist entered the order as 300 mg/kg/dose q6h. |
|                         | A prescriber verbally ordered 0.2 mg of oral morphine solution for a newborn with withdrawal symptoms. The nurse transcribed the order as 0.2 mg/kg. The pharmacy clarified the dose with the prescriber, and it was corrected. |
| Misheard sound-alike drug names | A consultant recommended fluvooxamine, but the resident misheard the drug name as fluoxetine. |
|                         | A telephone order for propafenone was mistaken as propranolol. |
|                         | An emergency department physician verbally ordered “kenalog” (triamcinolone acetonide), but the nurse misread the drug as ketamine and handed the vial to the physician. The physician drew up the medication and administered it. |
|                         | A nurse misread a verbal physician’s order for hydromorphone as morphine. |
| Prescriber confusion    | A physician verbally ordered “100 mg of toradol” (ketorolac) when he meant to say “traMAdol.” |
| Misheard dose           | “50” mg was misread as “15” mg. |
| Misunderstood dose      | During an emergency at the bedside, a prescriber asked for “10” of diazePAM, but the nurse prepared 10 mL (5 mg/mL), not the intended 10 mg. |
| Misheard frequency      | A nurse misread a verbal order for temazepam “qhs” PRN for sleep as “q8h” and entered the order into the computer. A pharmacist called the physician to clarify the order, and the physician corrected the frequency to every night at bedtime as needed. |
| Route confusion         | Subcutaneous epinephrine was prescribed. The route was misread, and the drug was administered by the IV route. |

ECRI Institute calls for ENFit implementation. An extensive review of the use of ENFit connectors by ECRI Institute, an ISMP safety partner, includes a recommendation that calls for healthcare facilities to move to the new system as soon as practical—ideally, by the end of 2017. ISMP has also been an outspoken advocate for this change. The call to action (summarized here: www.ismp.org/scf?id=2922) appeared in an ECRI subscription publication that many hospital bioengineering departments receive (ECRI Institute. Implementing the ENFit initiative for preventing enteral tubing misconnections. Health Devices. 2017 Mar 29). ECRI Institute noted that the use of ENFit connectors will standardize the connection between all enteral devices in a female-to-male orientation, helping to ensure that enteral connectors will fit only with each other, and not with other connector types such as vascular lines that have Luer connectors. ECRI Institute also stated that, “although the ENFit design has received some publicity, many hospitals and clinicians that continued on page 3—**SAFETY** briefs

Such a mix-up has been uniformly fatal. Still, it has been difficult to make this change at some locations, because nurses are so used to administering vesicants—other than continuous infusions—as an IV push through the side port of a free-flowing IV line. Per the presenters, one barrier to standardizing vinCrisline administration in minibags is the fact that some nurses believe the risk of extravasation is higher than when manually pushing the agent through the IV line. Other barriers noted by the researchers included a lack of understanding of the risk of death associated with central nervous system administration of vinCrisline, as well as an insufficient understanding of how to properly administer vinca alkalooids via a minibag. Hopefully this new data will help convince hospitals that have yet to make the switch to minibags for vinCrisline. Infusion from a minibag is also supported by The Joint Commission, the World Health Organization, the Oncology Nursing Society, and the National Comprehensive Cancer Network.
> **Verbal orders**—continued from page 2
require practitioners receiving verbal orders to repeat back, rather than read back, verbal orders, or that no distinction has been made between repeat back and read back. Others indicated that verbal orders are first written on scrap paper and read back, but then later transcribed or entered into the patient’s actual medical record.

**Classes of medications.** Respondents also identified medication classes for which they have received verbal orders in the past year (Table 1, page 1), some of which are high-alert medications. Analgesics, agents used to control blood pressure, fluids for hydration, and antiemetics were reported by more than half of the respondents. Despite being highly discouraged by ISMP 2% of respondents reported receiving verbal orders for oncologic agents/chemotherapy in the past year.

**Medication errors.** Fourteen percent of respondents were aware of an error that occurred in the past year due to mishearing, misunderstanding, or incorrectly transcribing verbal orders. No trend emerged regarding the type of pharmacy or patient care unit where the errors occurred. Selected examples of the 211 errors reported by respondents are described in Table 2 (page 2).

**Recommendations**

Because there are situations in which verbal orders are unavoidable during emergencies or sterile procedures, consider the following recommendations to reduce the risk of an error.

**Organizational Policies and Procedures**

**Prohibit verbal orders for chemotherapy.** Do not allow verbal orders for chemotherapy except to hold or discontinue it. These medications are not administered in emergent situations, and the dosing regimens are often complex.

**Limit verbal orders.** Limit verbal orders to true emergencies or circumstances in which the prescriber is physically unable to electronically transmit, write, or fax orders (e.g., working in a sterile field). For example, except in emergent situations, do not allow verbal orders for entire order sets when admitting or discharging patients or during medication reconciliation when prescribing medications. Do not allow verbal orders for convenience or as a means of circumventing an electronic prescribing system.

**Limit to formulary drugs.** If verbal orders are necessary, only allow them for items on formulary because the names and dosages of drugs unfamiliar to practitioners are more likely to be misheard.

**Define the process.** Define the prohibitions and limitations on verbal orders and when they are acceptable; a mechanism to establish the identity and authority of the prescriber; elements of a complete verbal order; and the requirements for clear communication of verbal orders, direct transcription into the medical record or onto a prescription pad, and the readback process for verification.

**Prescribers and Receivers**

**Clarify all communications.** Avoid all drug name abbreviations and error-prone dose, route, or frequency abbreviations (e.g., U, IU, SC, QD). Spell out drug names, and for sound-alike drug name pairs, use a phonetic alphabet (e.g., “T” as in “Tango,” “C” as in “Charlie”). Communicate each single dose, not a total daily dose, and pronounce each digit of a number separately (e.g., “sixteen, one six,” to avoid confusion with “sixty”). When appropriate, use leading zeros but not trailing zeros when specifying doses.
Verbal orders—continued from page 3

Prescribers

Confirm patient and allergies. Before issuing the order, identify the patient using his or her full name and birth date, and confirm the patient’s allergies with the order receiver.

Speak clearly. Enunciate orders clearly and expect (or ask) the receiver to read back the order as transcribed in the patient’s medical record or onto a prescription pad. Provide the indication for the medication to help distinguish between sound-alike medications.

Provide complete orders. Include all elements of a complete verbal order, being clear about the unit of measure for each dose and the frequency of administration.

Repeat order on voicemail. Avoid leaving orders on voicemail in the inpatient setting. If leaving a voicemail in the outpatient setting, repeat the complete order a second time.

Provide weight-based doses. Include the mg per kg dosage along with the patient-specific dose for all weight-based neonatal and pediatric medication orders.

Request patient verification. To verify patient identification, ask the recipient to read back the patient’s name and birth date on the screen or order form/prescription pad that was used to transcribe the verbal order.

Receivers

Transcribe directly into the medical record. Immediately transcribe verbal orders into the patient’s medical record or onto a prescription pad as they are being communicated. Transcription from scrap paper to the medical record introduces another opportunity for error. Based on survey comments, the challenge of directly entering verbal orders into an electronic health record may need to be addressed. For order clarifications by a pharmacist, provide a mechanism for the pharmacist to transcribe the orders directly into the patient’s medical record.

Read back the order. Read the order back to the prescriber for verification. This step is essential and should become habit even if the receiver is confident that he or she has initially heard the order correctly. Although TJC first required this safeguard in its 2003 National Patient Safety Goals, do not assume that this practice is widespread in your facility despite a longstanding policy. Assess how prevalent this practice is in your organization, and take any necessary steps to help practitioners fulfill this safety check. The readback process is perhaps the single most important strategy to reduce errors with verbal orders.

Understand the indication. Ensure that the verbal order makes sense in context of the patient’s condition. This helps to differentiate sound-alike drug names. Record the medication’s indication directly on the order or with the order.

Discourage misuse. Do not accept verbal orders when the prescriber is present and physically able to document the order. Do not accept verbal orders from a “go-between” (e.g., physician office staff) who is not the original prescriber. Do not accept verbal orders for chemotherapy. When telephone communication results in the need to prescribe or change an existing medication, ask the prescriber to transmit the order electronically or by fax, instead of communicating the order by phone.

Do not accept abbreviations. If an abbreviation is given as part of a verbal order, transcribe and read back the meaning of the abbreviation, not the abbreviation. For example, if the prescriber states *QID*, document and read back *four times daily*.

SAFETY briefs cont’d from page 3

we received from the manufacturer, which identifies the filter needles used during testing, can be viewed at: www.ismp.org/sc?id=2919. Nurses should be informed that Elitek infusions must not have an in-line filter attached to the infusion set.

Unsuitable labeling. Label information printed on blister packs of CETYLEV (acetylcysteine) 2.5 g and 500 mg effervescent tablets is so tiny and crowded that it is extremely difficult to see that there are two different tablet strengths (Figure 1). Each strength is packaged within a barcoded carton in strips of two. To make
Oral chloral hydrate still used for pediatric procedural sedation

SMP thanks the more than 400 pharmacists, nurses, and physicians who completed our survey on the use of chloral hydrate for pediatric procedural sedation in late 2016. More than half (58%) of the survey respondents no longer use chloral hydrate or see it used for pediatric procedural sedation since the commercial product was discontinued in late 2016. However, 28% reported still using the drug for pediatric sedation in both inpatient and outpatient settings. Among those, chloral hydrate is often compounded by a hospital pharmacy (47%), compounding pharmacy (19%), or ambulatory pharmacy (4%); however, 30% of respondents did not know the source of the drug.

The reasons for the continued use of chloral hydrate include: past experiences with positive outcomes (20%); efficacy (10%); low cost (8%); as safe as other alternatives (5%); lack of availability of anesthesia professionals (4%); and less frequent sedation failures than alternatives (1%). Several respondents also reported that chloral hydrate is used for sedation with certain investigational studies, during auditory brainstem response (ABR) and electronystagmography (ENG) tests for hearing since it does not affect brain waves, and for sedation during mechanical ventilation when other sedation agents have failed. Most of these respondents reported that chloral hydrate is not used in combination with other sedation agents (66%), or is only used in combination with other agents for sedation failures (24%).

While about half (52%) of respondents are not aware of any serious adverse events with chloral hydrate in the past 3 years, about one in five reported seeing three very common adverse events: the patient's refusal of the medication (spitting out the dose) or vomiting (20%); sedation failures leading to the inability to complete procedures (20%); and prolonged sedation (19%). Other adverse effects, such as airway obstruction, respiratory depression, hypercapnia, respiratory arrest, excessive somnolence, post-discharge sedation, hypotension, and cardiopulmonary arrest, were reported by 4-7% of the respondents.

Although most respondents (82%) do not believe chloral hydrate has a role in pediatric sedation procedures, 18% still believe its use is indicated, particularly for radiology imaging, neuroimaging, and electrocardiology/echocardiology procedures; pulmonary function tests; emergency department procedures such as suturing; ABR hearing tests; and dental procedures conducted in a hospital setting.

Based on the results of this survey, ISMP plans to continue listing oral chloral hydrate as one example of an oral moderate sedation agent for children on the ISMP List of High-Alert Medications in Acute Care Settings (www.ismp.org/sc?id=2820), and the ISMP List of High-Alert Medications in Community/Ambulatory Healthcare (www.ismp.org/sc?id=2821). While it is not our intention to promote the use of chloral hydrate, it appears its use has continued in some facilities despite discontinuation of the commercial product. Thus, safeguards need to be in place for this high-alert medication. If you use the drug, see our November 3, 2016 newsletter (www.ismp.org/sc?id=2911) for a description of the risks associated with using oral chloral hydrate, and take the necessary steps to either remove it from use or implement safeguards to protect patients from known adverse effects.

Worth repeating...

Stribild and Genvoya mix-ups

Last week, we received yet another report of a patient who received STRIBILD (elvitegravir, cobicistat, emtricitabine, and tenofovir disoproxil fumarate) instead of GENVOYA (elvitegravir, cobicistat, emtricitabine, and tenofovir alafenamide). As we have mentioned before (August 25 and October 20, 2016 newsletters), both medications (manufactured by Gilead) contain 4 drugs in one tablet and are given once daily to treat human immunodeficiency virus-type 1 (HIV-1) infection. In addition to these similarities, the green tablet colors are nearly identical, making it difficult for the patient to recognize a dispensing error. The difference between the two drugs is the ester derivative of tenofovir. Genvoya contains tenofovir alafenamide 10 mg while Stribild contains tenofovir disoproxil fumarate 30 mg. Apparently both products achieve similar levels of tenofovir despite the strength difference. However, the disoproxil fumarate ester increases the risk of renal and bone toxicity. Product labeling and computer presentations of the generic names list the different forms of tenofovir as the last ingredient of the four. Thus, it is easy to miss the difference between these drugs when viewing only the generic names. Some computer systems may also truncate the drug names, which could lead to errors. In one previous error, the Genvoya computer listing used abbreviated generic drug names, Elviteg-Cobic-Emtricit-TenoAF, and not the brand name. When the pharmacy received an order for Genvoya, Stribild was mistakenly dispensed.

To prevent mix-ups, refer to these drugs by their brand names in computer listings. Otherwise, the entire ester of tenofovir should be listed in all bold uppercase letters, and the generic names should be reordered, with the tenofovir esters appearing first, making the different esters easier to identify.
ISMP CE Opportunities

ISMP has two on-demand webinars that address **smart pump technology integration** and **sterile compounding safety**. These webinars offer a convenient way to earn CE credit at no cost. To access the on-demand webinars, visit: [www.ismp.org/sc?id=2916](http://www.ismp.org/sc?id=2916).

Apply for ISMP’s International Fellowship

Individuals seeking careers in medication and patient safety at the global level can now apply for a new 2-year ISMP International Safe Medication Management Fellowship program. Deadline for applications is **June 30**. For details, visit: [www.ismp.org/sc?id=2898](http://www.ismp.org/sc?id=2898).

Don’t Miss 2017 MSI Workshops

Join your colleagues at a **Medication Safety Intensive (MSI)** workshop this year and learn unique ISMP techniques to maximize your organization’s medication safety efforts. For more information or to register, visit: [www.ismp.org/sc?id=637](http://www.ismp.org/sc?id=637).

2017 MSI Dates:
- **September 14-15**—Hackensack, NJ
- **December 1-2**—Orlando, FL ([just prior to ASHP meeting](http://www.ismp.org/sc?id=637)).

Second Video Released

ISMP has launched its second video newsletter, which focuses on safety issues with patient weights, steps to eliminate drug concentration confusion, and understanding PCA by proxy. To view for free, visit: [www.ismp.org/sc?id=1745](http://www.ismp.org/sc?id=1745).

<table>
<thead>
<tr>
<th>ISMP WEBINARS: Adopt Best Practices</th>
<th></th>
</tr>
</thead>
</table>
| **Real-Time Patient Data to Drive Safety: A Clinical Pharmacist’s Workflow Redesign** (FREE)  
Tuesday, June 20, 2017  
From 1:30 – 3:00 p.m. EDT |  |
| **Safe Use of Opioids in the Acute Care Setting: Within Our Reach** (FREE)  
Tuesday, July 11, 2017  
From 1:30 – 3:00 p.m. EDT |  |
| **2017 Update on The Joint Commission Medication-Related Standards**  
Thursday, July 27, 2017  
From 1:30 – 3:00 p.m. EDT |  |

For more information or to register, visit: [www.ismp.org/sc?id=349](http://www.ismp.org/sc?id=349).
Safe Medication Management Fellowship

ISMTP is now accepting applications for a unique 2-year International Fellowship

Sponsored by: Baxter International


Qualifications: The International Fellow must:

- Have an advanced degree in healthcare (e.g., PharmD, master’s degree)
- Have at least 1 year of experience in a clinical role in an acute care setting
- Be fluent in written and spoken English
- Be a US citizen or have official documentation that allows him or her to remain in the US for 2 years and travel internationally for a week or more at a time

Description: The International Fellowship will help train a medication safety leader seeking a long-term career at an international level. The Fellow will be involved in global medication safety initiatives, address worldwide safety issues, and help increase global reporting of medication errors. They also will work directly with international professional organizations and medication safety centers, and attend multi-country medication safety meetings and events. The Fellowship offers an unparalleled opportunity to learn from and work collaboratively with US and international experts in medication safety to assess and develop global medication error-prevention strategies.

How to Apply

Information, a course outline, and an application can be found at: www.ismp.org/sc?id=2898. Applications can also be requested by calling 215-947-7797.

The application deadline for the International Fellowship is June 30, 2017.