# Nurse Advise ERR®

Educating the Healthcare Community About Safe Medication Practices

## **The texting debate:** Beneficial means of communication or safety and security risk?

The debate regarding whether healthcare providers should be allowed to send orders via text messages continues in healthcare. Technology-savvy healthcare professionals have embraced the convenience and usefulness of this 21<sup>st</sup> century form of communication, while opponents feel it is too informal to properly document patient care and worry about data security and the potential impact on patient safety. Both sides of the debate offer compelling viewpoints, making it a challenge to promulgate best practices.

Even The Joint Commission (TJC) has wavered on the topic. In 2011, the accrediting agency published its opposition to the practice, citing concerns regarding unsecure texting platforms, sender authentication issues, and document retention problems.<sup>1</sup> But as more secure texting platforms emerged, TJC lifted its ban on texting orders in May 2016, permitting the practice in accordance with laws and professional standards as long as the required components of an order were included, and the message was sent via a secure platform. This included a sign-in process; encrypted messaging; de-livery and read receipts; date and time stamps; contact lists for senders and receivers; and policies on authentication, documentation, and message retention.<sup>1</sup> However, ISMP subsequently contacted TJC about several safety concerns we had with texted orders, and in December 2016, TJC, in collaboration with the Centers for Medicare & Medicaid Services, issued a clarification that again prohibited the use of even secure text messaging of orders,<sup>2</sup> citing primarily concerns related to safety rather than data security.<sup>3</sup>Today, many in healthcare feel that the text messaging of orders is unlikely to go away, despite the latest edict, given that it is just too convenient.<sup>3-5</sup>

#### Scope of Texting Orders

An accurate estimate of the prevalence of texting orders in healthcare today is unknown. A survey of 91 members of the College of Healthcare Information Management Executives in June and July 2011 found that 96.7% allowed physicians to text orders to the nursing staff.<sup>6</sup> However, this limited survey was conducted several months before TJC first published its opposition to this practice, and it is uncertain whether the subsequent changes in TJC's position on texting orders has had a significant impact on its use.

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**Table 1.** Examples of unclear medication orders using common text-messaging abbreviations

Abbreviation	Actual Order	Intended Meaning	Confusion or Error
2day	Slomag [sic] 64 mg TID <b>2day</b>	today	for 2 days
2	diclofenac 1% gel 4 g <b>2</b> right knee QID PRN	to	<b>2</b> g
b/4	Carafate 1 g PO <b>b/4</b> meals and hs	<b>before</b> meals and at bed- time (4 doses per day)	with 4 meals and at bed- time (5 doses per day)
3D	ibuprofen 600 mg PO <b>3D</b>	3 times daily	for 3 days
МТ	After bag <b>MT</b> , ↓ 100 mL/h	empty	Order too ambiguous and had to be clarified

#### 20th Annual ISMP Cheers Awards

E ach year, ISMP celebrates individuals and organizations that have set a standard of excellence in the prevention of medication errors during the previous 12 months. Nominations for this year's **Cheers Awards** will be accepted through **September 9**. ISMP accepts outside nominations, including self-nominations. The prestigious awards spotlight efforts from all healthcare disciplines, including nursing, medicine, and pharmacy, and winners have represented all practice areas, including acute care, long-term care, ambulatory care, and community pharmacy settings. To submit a nomination, visit: www.ismp.org/sc?id=1777.

## - **SAFETY** wires

Med wreck? A patient with atrial fibrillation (nonvalvular) was admitted to a hospital for insertion of a left atrial appendage device used to prevent stroke in patients who are not good candidates for long-term anticoagulation. When preparing the patient's list of home medications, hospital staff entered VESICARE (solifenacin) instead of the intended product, VESSEL CARE (www.ismp. org/sc?id=2912), a nutritional supplement the patient was taking. VESIcare is used to treat overactive bladder with symptoms of incontinence, urgency, and frequency. However, the patient did not have this condition. Because the error was not recognized, the order was converted to oxybutynin based upon the hospital's therapeutic formulary interchange for VESIcare. A dose of 5 mg every 12 hours was ordered, which the patient received postoperatively. The patient developed urinary retention that required urinary catheterization, although it's unclear if anesthetics given during the procedure may have also caused or contributed to the problem. The error was finally discovered by a pharmacist reviewing the patient's medication list during transition-of-care rounding prior to discharge.

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Supported by educational grants from Novartis and Fresenius Kabi





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> Texting—continued from page 1

#### (Risks Associated with Texting Orders)

Opponents of texting orders cite potential issues with security, authentication, documentation, and patient safety. While some of the security, authentication, and documentation issues may be mitigated by newer texting platforms currently available for use, many of the patient safety issues remain.

#### (Security, Authentication, and Documentation Issues)

Security. The texting of medical orders can lead to violations of the Health Insurance Portability and Accountability Act (HIPAA) if protected health information (PHI) is not properly safeguarded.<sup>7,8</sup> HIPAA defines the security measures required for electronic PHI related to access, audits, integrity, authentication, and transmission. While HIPAA does not expressly prohibit the sending of PHI by text, the standards require any system used to transmit PHI to restrict its access, protect its integrity, and guard against unauthorized access.9Typical cell phone text-messaging systems, which use short message service (SMS) technology, satisfy few, if any, of these HIPAA requirements.<sup>8</sup> Cell phones are typically unsecure devices, even when protected by passwords which can be easily decoded, exposing all text messages, even those previously deleted.<sup>5,7</sup>Typical text messages are not encrypted, do not facilitate sender and receiver authentication, and are often stored in unsecured servers or phones of the sender and receiver.<sup>10</sup> But even if the phone's SMS texting system encrypts the message, it is usually not strong enough for PHI.<sup>5</sup> Also, if a phone is lost, stolen, or recycled, or if a healthcare provider accidently forwards the text to personal contacts or sends it to the wrong person, PHI will be compromised.<sup>58</sup>

Sender and receiver authentication. Orders that are texted often do not provide the recipient with the ability to verify the identity of the provider sending the text,9 thus exposing the organization to possible fraudulent orders. There is also a risk if the sender mistypes the recipient's phone number, which confounds the fact that there is no way for the sender to verify the intended recipient, or to confirm that the recipient has received the texted order.<sup>1</sup> The recipient's phone could be turned off or unable to get a signal.

Documentation. Text messaging of orders raises concerns with record retention. There is no good way to keep the original message as validation of what must then be transcribed into the medical record.5

#### Safety Issues

Order clarity and completeness. The informal nature of text messaging increases the risk of miscommunicating an order, particularly a medication order. First, text messaging is often accomplished using abbreviated terminology, which has led to a new chapter in the error-prone abbreviation saga. ISMP has received a few reports of confusion and medication errors stemming from the improper use of common, ambiguous abbreviations that are often used during texting. In fact, texting abbreviation habits are spilling over into handwritten, verbal, and free-text electronic orders. For example, an order to give a drug TID "2day" was initially misinterpreted to give the medication TID for "2 days," while the intended meaning was to give it TID "today." Additional examples of errors or confusion reported to the ISMP National Medication Errors Reporting Program (MERP) related to common texting abbreviations can be found in Table 1 (on page 1).

Next, because most texted orders must be entered as free-text (rather than selecting drugs and doses from a drop-down menu), misspelling the drug or patient name is possible. Furthermore, any medical terms, approved abbreviations, drug names, or even patient names that are used may be autocorrected by the phone since they are unlikely to be in the phone's dictionary.<sup>1</sup> This unintended autocorrection could lead to incorrect entries which, if unnoticed by the prescriber, could lead to a delay in care, if the order must be clarified, or to a clinically significant error. For example, the wrong drug may be dispensed and administered if a spelling error occurs or if the phone autocorrects the continued on page 3-Texting >

> **SAFETY** wires continued from page 1 -The reporter commented that a more robust medication reconciliation process was needed. Prescribers do not always reconcile the medication list with the patient's indications or review the home medication list with the patient, especially if the patient was admitted for an elective procedure. While a home medication list is initially compiled by nurses, the actual reconciliation process is often incomplete. One suggestion would be to have a pharmacy staff member collect and verify the medication history, and then confirm that the prescriber has reviewed and reconciled the list (if the appropriate resources for such a pharmacy service are available). Also, prescribers, pharmacists, and nurses should attempt to verify that any drug prescribed, dispensed, or administered is indicated for the patient based on his or her medical conditions. We have notified the US Food and Drug Administration (FDA) as well as Astellas, which distributes VESIcare in the US, about the look- and soundalike name confusion.

#### 25 sublingual nitroglycerin, all at once.

The entire contents of a 25-count bottle of sublingual nitroglycerin tablets have occasionally been administered erroneously as a single dose to patients with angina. Such an event nearly happened earlier this month when a nursing student incorrectly interpreted the strength on the bottle label.



a 0.4 mg dose requires

The current label on the Greenstone brand nitroglycerin tablet container (Figure 1) states, "nitroglycerin sublingual tablets, USP, 0.4 mg" (or other strengths). Elsewhere on the label it notes that there are 25 sublingual tablets in the container, but one's eyes might easily miss that because it all 25 tablets in the bottle. is not printed close to the drug name and

strength, and it still does not specify that each tablet contains 0.4 mg. Because the bottle and tablets are so small, the student nurse thought a single dose must be all 25 tablets. She poured all the tablets into a medicine cup to administer. Fortunately, her continued on page 3-SAFETY wires >

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#### > **Texting**—continued from page 2

entry to a similar drug name. Or, a medication could be dispensed and administered to the wrong patient if a spelling error occurs with the patient's name. Errors are also possible if a phone's voice-recognition feature is used to transcribe a verbal message into a text message, as the technology may mishear words given differences in dialects, pronunciation, voice quality and volume, and background noise. Sometimes this feature even "hears" others that are talking nearby, resulting in unintended text being recorded.

Free-text or verbal orders that lack the prompts often found in electronic prescribing systems may also be incomplete, missing critical components of an order, such as the route of administration or, for pediatric weight-based medications, the mg/kg dose.

**Clinical decision support.** Texting orders bypasses all the clinical decision support and alerts offered by a computerized prescriber order entry (CPOE) system that can help healthcare providers ensure they are providing the best option for the patient given his or her current medication regimen, medical conditions, age, weight, and allergies. Furthermore, during the texting process on a cell phone, the prescriber does not have access to the patient's medical record (e.g., complete medication list, laboratory values) to obtain or confirm information that might be needed during the prescribing process.

**Transcription.** With texted orders, nurses or pharmacists must manually transcribe the orders into the patient's electronic medical record—an extra step that increases the risk of an omission or transcription error. Order clarifications may also be difficult if sent via text messaging. Also, a delay in text order transcription may result in a delay in patient care, or a duplicate order if an order is entered via CPOE in addition to a text order.

**Distractions from incoming texts or phone calls.** Cell phones are typically busy devices, frequently receiving calls, texts, social media notifications, emails, or other alerts, which could be distracting to healthcare providers who are attempting to text an order. Such a case that led to a serious error was reported in our November 29, 2012 newsletter.<sup>12</sup> While a medical resident was using her smartphone to discontinue anticoagulation, she was interrupted by a personal text message before completing the order. She quickly responded to the message but forgot to go back to finish the order. Anticoagulation continued unnoticed for days, and the patient developed hemopericardium and tamponade requiring emergency open-heart surgery. The spontaneous bleeding into the pericardium was felt to be caused by receiving the extra anticoagulant doses.<sup>13</sup>

#### (Benefits of Texting Orders)

Proponents of texting orders in healthcare have increased, often comparing the impact texting has had on communication to the impact flying has had on travel—a technological advance worthy of adoption in healthcare. The benefits of texting orders are primarily related to its popularity and convenience, workflow synergy and speed, and perception of similar risks when compared to other forms of communicating orders.

#### (Popularity and Convenience

US citizens are spending more time using their phones to send texts than they do answering calls,<sup>14</sup> finding text messages to be convenient, immediate, reliable, concise, and likely to be read.<sup>15</sup> Research has shown that 80% of healthcare providers use their phones for professional purposes,<sup>16</sup> mostly to communicate and access medication information.<sup>7</sup> Healthcare providers may have an aversion to clunky technology systems that tether them to computers,<sup>6</sup> slow them down, and increase their administrative-type work,<sup>15</sup> so it isn't surprising that texting is an appealing option for communicating orders.

#### (Workflow Synergy and Speed

With ever-increasing constraints on healthcare providers' time, they may prefer texted orders over voice communication when one practitioner is offsite, particularly when prescriber order entry systems are not readily accessible. The task of calling another continued on page 4—Texting >

SAFETY wires continued from page 2 preceptor quickly noticed the mistake before the medication was administered.

This error has been reported to ISMP in the past with other nitroglycerin products. In one case, a patient's blood pressure dropped to 80/40 mmHg, requiring transfer to a critical care unit. In another case, the patient spit out the tablets because of the intense burning sensation in his mouth.

Unlike most tablet or capsule medications in hospitals, nitroglycerin is dispensed in bottles of 25 tablets rather than in unitdose packaging because of stability issues. The bottles are often stored on patient care units and may be the only stock bottle of tablets available on units if a robust unit-dose dispensing system exists. As we pointed out in a 2007 article on this topic (ISMP. One tablet or one bottle? *ISMP Med Saf Alert!* 2007;12[24]:1-2), some nurses who are accustomed to unit-dose packaging may not be expecting more than a single dose in a drug container.

We have contacted the US Food and Drug Administration (FDA) and asked the agency to have nitroglycerin manufacturers indicate "0.4 mg <u>per</u> tablet," or "Each tablet contains 0.4 mg," on the carton and bottle label. A slash mark (0.4 mg/tablet) should not be used because the slash might be misinterpreted. For now, consider our 2007 advice: package the original amber glass bottle in a plastic bag or plastic amber vial, and affix a label listing the per tablet strength as well as standard dosing information. Remind all practitioners, "If you need more than 3 [pills, vials, or other dosage form], call the pharmacy."

#### Baxter makes smart pump library guide available. A new guide for building smart infusion pump drug libraries (applicable to any vendor brand of smart infusion pump)

any vendor brand of smart infusion pump) is now available on our website in our *Articles and Documents of Interest* section at: <u>www.ismp.org/sc?id=2901</u>. Baxter incorporated input from ISMP into this tool, which is intended to be used by diverse stakeholders within a hospital, including the pharmacy team, nursing staff, prescribers, and information technology representatives, all of whom serve crucial roles in building and maintaining the drug library. The guide also discusses integration of the smart pump drug library with electronic health records.

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#### > Texting—continued from page 3

healthcare provider may not seem as efficient as texting, which often allows for an exchange of information quickly and succinctly with multiple parties in real time.<sup>5</sup> From a workflow perspective, texting may reduce the time waiting for colleagues to exchange critical information about the patient, which can improve patient outcomes.<sup>6,7,17</sup> While faster is not always better, texting can make phones seem like carrier pigeons<sup>7</sup> in a hurried healthcare environment where stabilization of the patient is often a priority.

#### (Similar Risks

Proponents of texting orders may be aware of the risks associated with this process but suggest that there are similar risks and drawbacks with other order communication methodologies. For example, the risk of HIPAA violations is also high with verbal orders or when holding discussions with or about patients in open settings such as the emergency department, clinics, and other common patient or family areas.<sup>6</sup> While CPOE is the preferred method of communicating orders, it is not without risk.<sup>17</sup> Texting, CPOE, and verbal orders all require human interaction and thus invite human error.<sup>6</sup> And while verbal orders allow interaction between healthcare providers to seek clarification and ask questions, the voice of the caller cannot be objectively identified to authenticate the orders, and they also require transcription, just like orders that are sent via text.

#### **Conclusion and Survey**

As noted by TJC in its decision to abandon support of texting orders,<sup>2</sup> we don't have enough information about whether the security risks can be fully mitigated by newer texting platforms and whether the application of certain technologies, policies, and procedures can be used to effectively address the known safety issues. ISMP has received very few reports of medication errors associated with texted orders, so we know little about the problem and its scope. Thus, we **encourage all newsletter readers to participate in a 15-minute survey** (www.ismp.org/sc?id=2942) before **August 31** so we can learn more about these issues from those who are most affected by them. We really need your input to help guide our work on this topic, and we are sincerely interested in your opinions!

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## Special Announcements

#### **ISMP** webinars

ISMP webinars are a convenient way for healthcare professionals to stay ahead of new trends in medication safety and gain additional knowledge in key areas. To register for our July and September webinars, please visit: <u>www.ismp.</u> <u>org/sc?id=349</u>.

July 27: 2017 Update on The Joint Commission Medication-Related Standards

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Replacing Old Practices with New Paradigms: Adopting Safe Practices for IV Push Medications

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Join ISMP and Outcome Engenuity (OE) for a unique **Medication Safety Focused Just Culture Certification Course** on **August 2-4** in **Wilmington**, **DE** (30 minutes from Philadelphia International Airport). Participants will explore the core concepts of a Just Culture and become an expert in the Just Culture Algorithm. Attend the 3-day course and leave with the confidence to work and lead in a Just Culture. CE credit is available for pharmacists and nurses. For details and to register, visit: www.ismp.org/sc?id=2940.

To subscribe: www.ismp.org/sc?id=384



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#### **ISMP** Nurse Advise **ERR**\*,

## **ISMP Survey on Texting Medical Orders**

ISMP is conducting a survey on texting medical (patient care) orders to learn more about this practice in healthcare. Please answer the first 3 questions (Section A) based on your personal opinions about texting medical orders. Answer the next 4 questions (Section B) as they relate to the healthcare organization in which you work. For those who have received at least one texted order in the past year, answer the last 3 questions (Section C) based on your experiences. Please complete the survey by August 31, 2017, and submit your responses to ISMP at: <a href="https://www.ismp.org/sc?id=2942">www.ismp.org/sc?id=2942</a>. Thank you for helping us learn more about this method of communicating medical orders!

#### Section A: Your personal opinions about texting medical orders

### Do you believe the texting of medical orders should be <u>allowed</u> in healthcare? (please select the one answer that best describes your opinion)

- □ Yes, texting orders should be allowed
- □ Yes, texting orders should be allowed under certain circumstances (please specify):
- □ Yes, texting orders should be allowed but only if using an encrypted phone/device application (e.g., TigerText, Doc Halo)
- □ No, texting orders should not be allowed under any circumstances
- □ Other (please specify): \_

#### 2 If the texting of medical orders is allowed in healthcare, should it be prohibited for any of the following? (select all that apply)

- □ Texting of medical orders should not be allowed under any circumstances
- □ All high-alert medications
- Certain high-alert medications (please specify):
- □ Chemotherapy
- □ Controlled substances
- □ Medications that require complex order sets (e.g., parenteral nutrition, patient-controlled analgesia)
- □ Medications prescribed upon admission or during the reconciliation process
- □ New medication orders
- □ Emergencies
- □ No prohibited circumstances; allowed in all circumstances
- □ Other (please specify): \_

## Please rate your level of <u>concern</u> regarding the following potential risks associated with the texting of medical orders using the following key: 1=low concern, 5=high concern.

Potential Risks	1	2	3	4	5	Comments
Security of protected health information						
Authentication of the sender and/or receiver						
Retention/documentation of the text message						
Order clarity <ul> <li>a. Use of potentially confusing abbreviated text terminol-ogy (e.g., 2day for today)</li> <li>b. Misspellings</li> <li>c. Phone/device autocorrection, leading to wrong drug or</li> </ul>						
patient names Order completeness						
Lack of prescriber clinical decision support while texting						
Delay in receipt or transcription of texted orders						
Error-prone transcription of texted orders						
Distractions while texting from incoming calls/texts/notifications						
Potential for patient misidentification						

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> Survey—continued from								
Section B: Texting medic	al orders in your organizat	tion						
<ul> <li>By policy, are medical orders <u>allowed</u> to be texted from a cell phone or other mobile device in your organization? (select one answer)</li> <li>Yes, texting orders is allowed</li> <li>Yes, texting orders is allowed under certain circumstances (please specify):</li> <li>Yes, texting orders is allowed but only if using an encrypted phone/device application (e.g., TigerText, Doc Halo)</li> <li>No, texting orders is not allowed under any circumstances</li> <li>Our organization has no policy regarding the texting of medical orders</li> <li>Uncertain</li> <li>Other (please specify):</li> </ul>								
	eing texted by prescribers	in your organization (irre	espective of orga	anizational policies)?				
□ No □ Uncertair □ Yes	]							
└─ How are the to □ Standard cell └─ How often hav	exted orders received? (sel phone [ re you received texted ord rely (less than once a month)	Encrypted application ers during the past year?		] Other (please specify):				
<ul> <li>Texting of medical ord</li> <li>All high-alert medicat</li> <li>Certain high-alert me</li> <li>Chemotherapy</li> </ul>	ions dications (please specify):							
<ul> <li>Medications prescribe</li> <li>New medication orde</li> <li>Emergencies</li> </ul>	uire complex order sets (e.g., ed upon admission or during t	the reconciliation process		esia) pecify):				
Do healthcare practitioners send text messages to prescribers to ask questions or clarify orders (submitted via any means—text, electronic, etc.) that may be unclear, incorrect, or inappropriate?								
□ No □ Uncertair □ Yes	1							
	criber ever respond/reply l							
□ Yes	□ No [	□ Uncertain						
Section C: Your experien	ces with texted medical o	rders (answer ONLY if yo	u have received	a texted medical order du	ring the past year)			
□ The texted order is au	s entered into your electro utomatically entered into the l anscribed into the health reco :	health record by the techno	ogy being used ceives the text, sir	milar to a verbal or telephone	e order			
for before, 2 for to, 3D		·		0, 0	2day for today, b/4			
	ess than a quarter <b>If you have received texte</b>	Quarter to half d orders with abbreviate	☐ More than h d text terminolo		les:			
	errors or close calls that l se describe):							
Demographics								
Please select the best res	ponses that describe your co	ountry of practice, practice	e setting, professi	ional discipline, and profes	sional designation.			
Country of practice: Practice setting:	□ US □ Hospital □ Community pharmacy	<ul> <li>International</li> <li>Critical access hospital</li> <li>Other pharmacy</li> </ul>	□ Long-term car □ Other (please					
Professional discipline:	<ul> <li>Community pharmacy</li> <li>Physician</li> <li>Registered nurse</li> <li>Risk/quality/safety profe</li> <li>Educator</li> </ul>	<ul> <li>Physician assistant</li> <li>Licensed practical nurse</li> </ul>	<ul> <li>Pharmacist</li> <li>Advance prac</li> </ul>	Pharmacy technici	an			
Professional designation		□ Manager level	Director level	□ Administration				

Please leave any additional comments you may have about texted medical orders: \_\_