

Nurse AdviseERR®

Educating the Healthcare Community About Safe Medication Practices

ISMP survey shows provider text messaging often runs afoul of patient safety

In June through August 2017, we invited readers of our acute care, community/ambulatory care, long-term care, and nursing newsletters to complete an online survey about the texting of medical orders in healthcare. We sincerely thank the 778 respondents who completed the survey, which included nurses (40%, n=312), pharmacists (38%, n=299), physicians and other prescribers (7%, n=54), medication/patient safety officers and quality/risk managers (7%, n=53), and others (8%, n=60, educators, pharmacy technicians, etc.). Almost all respondents were from the US (95%) and practiced in a hospital setting (86%). About two-thirds (63%) of the respondents were staff-level practitioners, and the remaining were managers (21%), directors (10%), or administrators (6%).

ISMP conducted this survey to gain insight into the practice of texting medical orders given the ongoing debate regarding its use (ISMP. The texting debate: beneficial means of communication or safety and security risk? *Nurse AdviseERR*. 2017;15[7]:1-4; www.ismp.org/sc?id=3054). Technology-savvy healthcare professionals have embraced the convenience of this 21st century form of communication, while

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Table 1. Level of Concern with Texting Medical Orders

Potential Risk	All US Respondents (n=742)	
	Level of Concern (1=Low Concern and 5=High Concern)	
	Mean	% (4/5) ¹
Phone/device autocorrection leading to wrong drug/patient names	4.09	70
Use of potentially confusing abbreviated text terminology (e.g., 2day)	3.91	66
Patient misidentification	3.79	60
Misspellings	3.73	58
Incomplete orders	3.62	56
Failure to retain/document the text message	3.43	52
Lack of security of protected health information	3.41	49
Error-prone transcription of texted orders	3.40	49
Inability to authenticate the sender/receiver	3.38	50
Distractions while texting from incoming calls/texts/notifications	3.34	48
Lack of prescriber clinical decision support while texting	3.31	46
Delay in receipt, transcription, or carrying out of texted orders	2.98	37
All rated concerns	3.50	53

¹Percent of respondents who selected 4 or 5 based on a scale with 1=low concern and 5=high concern

SAFETY wires

⚡ Labeling and scanning confusion.

VARUBI (rolapitant) is a substance P/neurokinin 1 (NK1) receptor antagonist indicated, in combination with other antiemetic agents in adults, for the prevention of delayed nausea and vomiting associated with initial and repeated courses of emetogenic chemotherapy. The drug is given within 2 hours of starting chemotherapy, along with dexamethasone and a 5-HT₃ receptor antagonist. Each Varubi tablet is 90 mg, but the US Food and Drug Administration (FDA)-approved dose

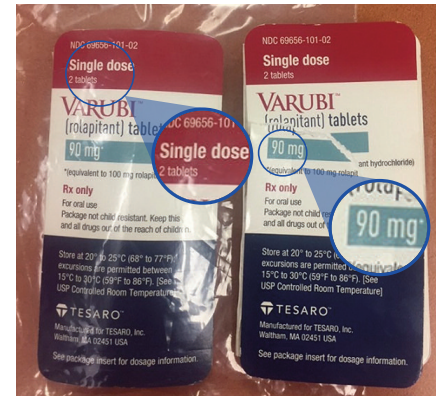


Figure 1. Each Varubi package holds 180 mg (2 x 90 mg) although the 180 mg dose is not mentioned on the label. The barcode on the reverse side scans as 90 mg even though 180 mg is contained in each package.

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Smart pump survey - still open!

■ ISMP is conducting a survey on smart infusion pumps, and we could really use your help to understand how these devices are currently being used in US healthcare settings. We plan to use the information we collect from the survey to update and develop guidelines for organizations that want to maximize smart pump technology to improve patient safety. Please submit your responses online by **January 19, 2018**, by going to: www.ismp.org/sc?id=3037. Thank you for your participation!

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opponents feel it is too informal to properly document patient care. They also have concerns about data security and the potential impact on patient safety with texting medical orders. Both sides of the debate offer compelling viewpoints, which were both clearly evident in the survey results of US respondents (n=742) that follow.

Survey Results: Scope of Texting in Healthcare

Texting opinions. Thirty-three percent of all respondents, and more than half (55%) of all medication/patient safety officers and risk/quality managers, do not believe medical orders should be texted under any circumstances in healthcare. Another 40% of all respondents thought the practice was acceptable only when using an encrypted device application (e.g., TigerText, Doc Halo). While 26% of physicians reported that texting should be allowed in any circumstance, only 15% of nurses and pharmacists, and only 4% of medication/patient safety officers and risk/quality managers felt the same way.

Texting policies and practices. More than half (53%) of all respondents told us that texted medical orders are not allowed per policy in their facility. Most of the other respondents said they had no policy on the topic (19%) or were uncertain whether a policy existed (16%). Only 12% of all respondents reported that texting was allowed in their facility per policy—8% for any orders if using an encrypted device, 3% under any circumstances, and 1% under certain circumstances (e.g., to communicate information other than medication orders, for clarifications only, to alert prescribers to call).

Still, 45% of pharmacists and 35% of nurses reported that medical orders are regularly being texted irrespective of a policy. Another 36% are uncertain whether the practice occurs. No physicians reported awareness of a policy that allowed the practice, yet 38% reported that medical orders are being texted. Less than a quarter (22%) of respondents were certain that medical orders are not being texted in their facility.

Frequency of texting. Among respondents who reported receiving texted orders during the past year, more than half receive them every day (20%) or at least every week (35%). Another 17% receive texted orders once or twice a month, and the remainder (28%) receive them less frequently. Pharmacists reported receiving texted orders more frequently than nurses.

Types of texted orders. For those who thought texted orders should be allowed in healthcare (67%), half thought texted orders for chemotherapy (50%) and complex order sets (54%) such as those for parenteral nutrition should be prohibited. More than a quarter thought orders for high-alert medications (30%) and controlled substances (29%) should not be allowed. However, in practice, very few types of texted orders are prohibited in respondents' facilities. Only 9% said that texted chemotherapy orders were not allowed, and only 3% reported that complex order sets could not be texted. Less than 2% reported any further restrictions, although more than half (56%) of the respondents said they were uncertain about restrictions or were unaware of any policy on the topic.

Devices for texting. Among facilities where texted orders have been received during the past year, more than two-thirds (69%) reported that the facility allows the use of standard cell phones. In fact, about 42% indicated that standard cell phones are the only device from which texted orders have been received in the past year. Approximately half (48%) of all respondents told us that they have received texted orders via an encrypted device during the past year, but only 24% of all respondents reported that this is the only way they have received texted orders. About a quarter (25%) of all respondents said they have received texted orders from both a standard cell phone and an encrypted device during the past year. Thus, even when encrypted

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is 180 mg. Varubi is available as a single unit dose package (called a “wallet card” by the manufacturer) containing two 90 mg tablets in one blister. The label on the 2-tablet package states, “Single dose, 2 tablets,” but this information could be overlooked as it appears well above the drug name and is not in the same field where the drug name appears (**Figure 1**, page 1). Also, the strength is listed as 90 mg and appears below the drug name in a blue band.

Recently, when 180 mg of Varubi was ordered for a hospitalized patient, pharmacy staff misread the label and dispensed two Varubi single dose packages. The pharmacy staff did not notice that each package contained two 90 mg tablets and, as a result, they dispensed two packages or 360 mg. The patient's nurse also misread the label. Additionally, when the barcode of one of the single dose packages was scanned, the system indicated the package strength was 90 mg and prompted the nurse to administer a second package, which resulted in the patient receiving 360 mg instead of 180 mg.

To reduce confusion, we contacted TESARO, the manufacturer, and FDA to recommend adding 180 mg to the label, preferably noting that each package contains a total of 180 mg, with 2 x 90 mg tablets enclosed in parentheses. Further, the product barcode should identify the 180 mg dose instead of 90 mg when scanned.

**Afluria influenza vaccine labeling needs improvement.**

Each AFLURIA quadrivalent influenza vaccine prefilled syringe has the drug name and barcode printed on the immediate container label. However, black hard-to-read peel-off labels with the lot number and expiration date cover the most prominent display of this information (**Figure 1**, page 3). While the drug name appears on the peel-off label in small print around the syringe barrel near the plunger end, the peel-off label itself blocks the larger display of the product name and barcode (**Figure 2**, page 3). The peel-off labels are useful for documenting vaccine administration in vaccine records and for labeling syringes, but the placement of the labels on this product is less than optimal. Also, once the peel-off labels are removed, the syringe label itself is upside down for

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devices are available, standard cell phones are still being used to send and receive texted orders.

Texting to clarify orders. More than half of all respondents (55%) have sent text messages to prescribers to ask questions or to clarify orders that may be unclear, incorrect, or inappropriate. This practice was more frequently reported by pharmacists (65%) and physicians (62%) than by nurses (47%). Almost all respondents (86%) who sent text messages to prescribers to clarify orders reported that prescribers responded or replied to these messages via texting.

Documenting texted orders. According to nurses and pharmacists, texted orders are almost always (98%) entered into the patient's medical record by the person receiving it, similar to a verbal order. However, numerous respondents commented that the order may not be specifically identified as a texted order. Less than 2% of respondents reported that the texted order is automatically entered into the health record by the technology being used.

Survey Results: Risks with Texting Orders

Most respondents reported a high level of concern regarding potential risks associated with the texting of medical orders (**Table 1**, on page 1). Overall, medication/patient safety officers and risk/quality managers and nurses were more concerned about the potential risks associated with texted orders, and physicians were least concerned about the risks. Respondents reported that the five most concerning risks associated with texted orders were associated with safety issues impacting order clarity, completeness, and correctness, rather than information security, authentication, or documentation issues:

1) Unintended phone/device autocorrection. The majority of all respondents were concerned (15%) or highly concerned (55%) about the risk of unintended autocorrection of medical terms, abbreviations, drug names, or patient names since they are unlikely to be in the device's dictionary. This could lead to incorrect entries which, if unnoticed by the prescriber or other practitioners, could lead to a delay in care if the order must be clarified, or to a clinically significant error. Most comments from respondents indicated that any autocorrection feature should be disabled on devices used for texting orders to prevent inaccurate corrections since most people fail to reread messages before sending.

2) Use of potentially confusing abbreviated text terminology (e.g., 2day). Nearly two-thirds of all respondents were concerned (16%) or highly concerned (50%) about the risk of using abbreviated text terminology (e.g., 2day for today, 2 for to, b/4 for before, 3D for 3 times daily, MT for empty). Nurses and pharmacists reported that about 19% of the texted orders they had received in the past year contained abbreviated text terminology, but such occurrences were infrequent. However, almost half (46%) of all physician respondents reported that texted orders contained these potentially confusing abbreviations, and 30% said it happened frequently in more than a quarter of all texted orders.

3) Potential for patient misidentification. A majority of all respondents were concerned (19%) or highly concerned (41%) about the risk of misidentifying the patient with a texted order since most transmission devices and phones may not facilitate the communication of two unique patient identifiers. Medications could be dispensed and administered to the wrong patient if a spelling error occurs, or autocorrection changes the intended patient's name. In addition, there were repeated comments from respondents who alarmingly said they only include the patient's initials, unit, room number, or another abbreviated patient identifier with their text messages and orders to offset the risks associ-

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most users who hold syringes by the plunger with their right hand (**Figure 2**). The product is available in cartons that are well labeled and hold trays with 10 syringes. To help ensure the product is properly labeled and identified, we recommend storing the carton in the refrigerator, with the trays remaining inside the carton. Nurses and assistants who administer vaccines should be reminded to maintain storage in the original cartons. ISMP has contacted Seqirus, the product manufacturer, about these labeling issues.



Figure 1. Afluria syringe with peel-off labels intact makes syringe label difficult to read.

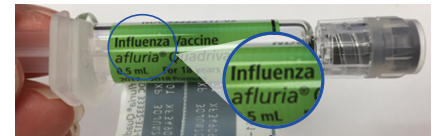


Figure 2. Afluria syringe with labels peeled back. Label oriented correctly when held in the left hand by the plunger (as in picture) but would be upside down if held in the right hand.

⚡ Prefilled opioid syringe shortage coming?

A few months ago, in a letter to customers, Pfizer Injectables noted there may be shortages of certain drugs in prefilled syringes as the company undergoes efforts to address issues at one manufacturing facility. This will affect its Carpuject and iSecure prefilled syringe products, including morphine and **HYDRO**morphine. Although Pfizer is prioritizing certain syringes, including morphine, **HYDRO**morphine, and other drugs based on medical necessity, the company will be unable to meet the demand for some items through the first quarter of 2018.

The only other manufacturer of morphine and **HYDRO**morphine prefilled syringes, Fresenius Kabi, has supplies available and will be stepping up its efforts to meet the demand. It is unknown whether the combined supplies from the two companies will be adequate. Schedule II controlled substances are subject to US Drug Enforcement Administration (DEA) quotas limiting the amount that can be produced by a manufacturer (www.ismp.org/sc?id=2973). The US Food and Drug Administration (FDA) can ask the DEA to ensure manufacturer allocations are increased, although it is ultimately the DEA's decision.

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ated with the security of protected patient information.

4) Misspellings. Well more than half of all respondents were concerned (17%) or highly concerned (41%) about the risk of spelling errors with patient names or drugs (particularly similar drug names) and doses. Most texted orders must be entered as free-text rather than selecting drugs and doses from a drop-down menu, or via a voice-recognition feature that may mishear and, thus, misspell words, including drug names.

5) Incomplete orders. More than half of all respondents were concerned (20%) or highly concerned (36%) about the risk of communicating incomplete orders when texting. Free-text orders that lack the prompts often found in electronic prescribing systems may be missing critical components, such as the route of administration or, for pediatric weight-based medications, the mg/kg dose. Having no way to prevent an order from being sent via text without all the required components, the need for more clarifications than with electronic prescribing systems, and issues with punctuation and hitting “send” before the order has been completed, were also frequent concerns listed by respondents.

Half or more of all respondents felt that these risks, along with the failure to retain or document the text message, and the inability to authenticate the sender/receiver, were of the highest concern. The least concerning risks, which still clearly worried

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Table 2. Examples of Errors with Texted Orders

Misidentified Patients
A physician texted an order to discharge a patient using just a room number, but the patient had moved to another room, and the new patient in the room was almost discharged prematurely.
A prescriber texted an order to increase the dose of a controlled substance for a young patient without including two unique patient identifiers, which was mistaken as an order to increase the dose of the same drug for an elderly patient. The increase in dose caused clinically significant respiratory depression requiring activation of a rapid response team and naloxone administration.
A busy hospitalist texted an order for the wrong patient, which was identified when a pharmacist clarified the order because it did not seem correct for that patient.
Misunderstood Abbreviations
A texted order with the abbreviation BTW (meaning “by the way”) was thought to be a typo and mistaken for the frequency BID (twice daily) of a newly prescribed medication.
A prescriber ordered amino acids using the abbreviation AA, which was misinterpreted as albuterol and Atrovent.
Autocorrection Mistake
Autocorrection of a drug name led to dispensing the wrong drug.
Lack of Security of Protected Information
A texted order was sent to the wrong person outside the facility.
A nurse almost sent a question about an order to the wrong person from his contact list in his phone.
Delay in Carrying Out Orders
A texted order that included just a bed (room) number led to a delay in administering the drug to the correct patient.
A CT scan was delayed for a patient because the nurse did not see the texted order.
A nurse received an order for a medication without any patient’s name, which required texting the physician to clarify the order and a delay in enacting the order.
Duplicate Therapy
A texted order to the nurse, along with a verbal order to a pharmacist, led to a duplicate order entered into the patient’s profile.

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Morphine and **HYDRO**morphine are also available in single-dose vials and ampuls. But it would be a step backwards to place ampuls or vials (even single-dose vials) in patient care areas if previously using syringes. Even single-dose (unpreserved) vials may contain more than one dose. Because leftover drug in the vial may be saved for reuse rather than wasted, some hospitals have moved away from stocking vials in patient care areas due to concerns about contamination and infection. USP <797> (standards for making sterile preparations) requires preservative-free vials that are opened or punctured in conditions outside the pharmacy (ISO class 5 environments) to be used within 1 hour or discarded. Unlabeled syringes when preparing doses from vials or ampuls is also a concern.

If a shortage occurs, some hospitals may seek product from external compounding companies, which would need to use commercially available vials to prepare syringes or begin with active pharmaceutical ingredients. However, these companies can only



Figure 1. Color-coded syringes for classes of drugs can lead to errors outside the operating room.

make products with a bulk drug substance that appears on an FDA-established list based on clinical need or on FDA’s drug shortage list. So far, morphine and **HYDRO**-morphine are not on either list.

Also, if syringes from external compounding companies are needed, we strongly advise using only those that follow USP <7> labeling practices, which requires the total amount of drug per total volume in the syringe to be the primary display of strength, followed by the per mL amount in parentheses. Some companies list the amount per mL as the primary display for strength. This might be confusing to some practitioners who are used to seeing the total amount of drug per total volume on labels, which could lead to dosing errors.

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most respondents, included a delay in receipt or transcription of texted orders, and the lack of prescriber clinical decision support while texting. For the latter concern, many respondents commented that nurses who enter the texted order into the prescribing system, and pharmacists who verify the order, should receive any alerts and clarify the orders if concerns arise. However, other respondents commented that the lack of decision support when prescribing could lead to unnecessary variation in practices and transfer responsibility for the correctness of the order from the prescriber to the nurse (or pharmacist).

Survey Results: Errors with Texted Orders

Seven percent of all respondents were aware of errors or close calls that have occurred involving a texted order. While this does not seem to be an excessive amount of errors, those described by respondents were primarily associated with the set of risks that were described above, some of which are unique to texted orders (**Table 2**, on page 4).

Conclusions

Given that texting is just too convenient, many in healthcare feel that the text messaging of orders is unlikely to go away, despite policies prohibiting their use or the known safety concerns. Our survey results tend to support this conclusion, although more scientifically rigorous research should be conducted to further confirm the scope of current use. 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. In fact, numerous respondents to our survey noted that, while texting of medical orders is clearly not as safe as electronic prescribing, it may be safer and more timely than verbal or telephone orders.

We disagree, particularly given that verbal or telephone orders can be read back to ensure accuracy and understanding, and because most practitioners who responded to our survey are texting orders via standard cell phones or devices without encryption or critically important safety features. While other forms of communicating medical orders carry some of the same risks as texting orders, the informal nature of texting orders, often without a known policy or procedure associated with the process, has resulted in uniquely alarming risks, including abbreviated language, improper autocorrection, and texting orders without full patient names and a second unique identifier to offset some data security concerns, to name a few.

The texting of medication-specific orders should not be allowed until the safety issues have been identified and resolved through advanced technology along with the development of vetted, industry-wide clinical guidelines that can be employed in organizations to ensure standardized, safe, and secure texting processes. Leadership must establish and communicate policies on the texting of orders and take a strong stance on avoiding texted medication-specific orders at this time until they can be safely introduced into healthcare through careful pilot testing and implementation plans.

what's in a Name?**The “-prazole” drug name stem**

In our October 2017 issue, we discussed antiviral agents that have the suffix “-ciclovir.” This month we focus on medications that have the suffix “-prazole,” which are proton pump inhibitors (PPIs).¹ These medications reduce the amount of stomach acid made by glands in the stomach lining and are commonly used for gastroesophageal reflux disease (GERD), dyspepsia, peptic ulcer, as part of *Helicobacter pylori* eradication therapy, and stress ulcer prevention. There are 6 proton pump inhibitors available in the US as listed in **Table 1** (page 6). Oral formulations of omeprazole, esomeprazole, and lanso-

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Color-coded labels like those applied by anesthesia practitioners in the operating room (OR) based on the American Society for Testing and Materials standard may also be used by companies and should not be accepted for regular inpatient use. The standard assigns colors to all drugs within a class—blue for opioids, so all strengths of morphine, **HYDRO**morphine, fenta**NYL**, and other opioids would have blue labels (**Figure 1**, page 4). Color-coded syringe labels outside the OR could lead to improper differentiation between individual drugs within a class.

**Adrenalin labeling change coming.** We

have received several reports of errors and close calls involving mix-ups between **ADRENALIN** chloride solution (**EPINEPH**rine nasal solution [for topical use]) and **ADRENALIN** (**EPINEPH**rine injection), including stocking crash carts and emergency supplies with the nasal solution. The errors have been related to look-alike packaging and the fact that the brand name, Adrenalin, is prominently displayed on both products. Adrenalin injection previously came in a yellow carton and vial label to differentiate it from the nasal solution. Sometime after 2014, Par Pharmaceutical changed the color scheme, and now the cartons of both products look nearly identical (**Figure 1**, page 6). The two solutions have different inert ingredients and are not interchangeable per the manufacturer.

When the nasal solution vial cap is removed, a pull-off tab is exposed, most often leading to recognition that the wrong product is at hand. This has led to delays in obtaining the correct injectable drug. Also, the pull-off tab is not a reliable failsafe because the rubber stopper underneath it can allow withdrawal of the topical solution with a needle and syringe, just like an injectable solution.

We recently learned that Par Pharmaceutical is revising the nasal solution label, which will include blue instead of red print and align with the cap color. This should be accomplished by the end of December, so it may be some time until you notice the change. We have asked the company to send us a draft of the label change so we can see if the color change is enough to draw attention to the fact that it is intended for nasal use only. We have also recommended enlarging the text or using other label design methods

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prazole are available over-the-counter (OTC). All oral PPIs are formulated as delayed-release, except the omeprazole/sodium bicarbonate combination product, which is an immediate-release formulation.

PPIs should be taken approximately 30 to 60 minutes before a meal, preferably in the morning. If a person has severe acid reflux symptoms at night, the medication can be taken at bedtime. Also, if the person has trouble swallowing a whole tablet or capsule, any of the capsule formulations can be opened and the pellets can be sprinkled over a tablespoon of soft food such as applesauce. The pellet mixture must then be swallowed immediately with a glass of water without chewing the pellets. Oral suspension or orally disintegrating tablet formulations of PPIs can also be used for patients with swallowing difficulties. The delayed-release tablet formulation PPIs should never be crushed or chewed. **ACIPHEX SPRINKLE (RABEprazole)** capsule is indicated for pediatric patients only. It is the only PPI in a capsule formulation that cannot be swallowed whole. It is intended to be opened and sprinkled over soft food or liquid for administration but the capsule should never be swallowed whole.

PPI therapy is generally considered safe in both pediatric and adult/geriatric patients, and short-term use (4 to 8 weeks) is usually well tolerated. However, inappropriate PPI therapy is prevalent in both ambulatory and inpatient settings.² Overutilization is associated with several adverse effects, such as increased risks of pneumonia, *Clostridium difficile*, chronic kidney disease, and bone fractures.^{3,4} Chronic users also have reduced absorption of calcium, iron, and vitamin B₁₂.³ Clinicians should determine the appropriateness of continuation of PPI therapy to decrease the potential for serious adverse reactions.

Please note: There is one important exception to the “-prazole” naming convention: although **ARIPiprazole (ABILIFY)** contains the drug name stem, -prazole, it is an atypical anti-psychotic medication, not a PPI.

ISMP is bringing you this feature on drug stem names every other month. We are borrowing this idea from an outstanding effort that is already underway in the French publication, *Prescrire International*, a journal that provides reliable, independent information about medications (www.ismp.org/sc?id=2877).

Table 1. Examples of Proton Pump Inhibitors

Generic Name(s)	Brand Name	Formulations
omeprazole	Pri LOSEC	Tablet, Capsule, Powder for Oral Suspension, Oral Suspension
omeprazole with sodium bicarbonate	Zegerid	Capsule, Powder for Oral Suspension
esomeprazole	Nex IUM	Tablet, Capsule, Powder for Oral Suspension, Injectable
lansoprazole	Prevacid	Capsule, Orally Disintegrating Tablet, Oral Suspension
dexlansoprazole	Dexilant	Capsule
pantoprazole	Protonix	Tablet, Powder for Oral Suspension, Injectable
RABEprazole	Aciphex	Tablet, Sprinkle Capsule

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- 1) World Health Organization. The use of stems in the selection of International Nonproprietary Names (INN) for pharmaceutical substances. 2013. www.ismp.org/sc?id=3055
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to draw attention to the dosage form, “Nasal Solution (for Topical Use Only).”

Routine storage of 30 mL vials of **EPINEPHrine** outside the pharmacy should be avoided when possible. If vials of the nasal solution, which are only available in 30 mL containers, are necessary in patient care units, consider affixing a large “external use only” auxiliary label to reinforce proper use. As for 30 mL multiple-dose vials of **EPINEPHrine** injection, these are a set-up for 10-fold dosing errors because the labels continue to include a ratio expression (1:1,000). We have asked Par Pharmaceutical to change that to comply with USP <7>, which calls for elimination of ratio expressions. There is enough volume in a 30 mL vial to administer a fatal overdose. Barcode scanning at the point of care can also help detect wrong product errors before they reach patients.



Figure 1. Adrenalin nasal solution (L) is easy to confuse with Adrenalin injection. Par Pharmaceutical will be changing the nasal solution label text to blue.

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HAPPY Holidays

from the staff and trustees at the Institute for Safe Medication Practices.
We wish you joy, health, and happiness this holiday season!

Special Recognition... Our 2017 Nurse AdviseERR Clinical Advisory Board

Production of this peer-reviewed newsletter would not be possible without the assistance of a reliable and talented clinical advisory board. As 2017 nears an end, we want to thank each of the following members of the advisory board for their dedication to making this newsletter a valuable medication safety resource for clinicians.

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