

# ISMP Medication Safety Alert!®

Educating the Healthcare Community About Safe Medication Practices

## Special Edition: Tall Man Lettering

### ISMP updates its list of drug names with tall man letters



One in every 1,000 medication orders in a hospital, and one in every 1,000 prescriptions in a pharmacy, have been associated with selecting the wrong drug while prescribing, transcribing, dispensing, or administering medications.<sup>1-4</sup> One of the key causes of these errors is drug name similarity.<sup>5</sup> Factors that increase visual similarity among drug names include similar length of the names and the number of groups of similar characters or the same characters within the names. Other risk factors that increase the risk of confusion between similar drug names include similarities in strength, dosing, route of administration, dosage forms, indication, the environment in which the drugs are used, the frequency of use, and product labeling.<sup>6</sup>

In response, a number of design techniques have been explored for the purpose of differentiating look-alike drug names. Tall man lettering is one such technique. Tall man lettering, a term coined by the Institute for Safe Medication Practices (ISMP), describes a method for differentiating the unique letter characters of similar drug names known to have been confused with one another. Starting with a drug name printed in lowercase letters, tall man lettering highlights the differences between similar drug names by capitalizing dissimilar letters. Accentuating a unique portion of a drug name with uppercase letters along with other means, such as color, bolding, or contrast, can draw attention to the dissimilarities between look-alike drug names as well as alert healthcare providers that the drug name can be confused with another drug name.

**ISMP list.** Since 2008, ISMP has maintained a list of drug names with recommended, **bolded** tall man letters. The list includes mostly generic-generic drug name pairs, although a few brand-brand or brand-generic name pairs are included.

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**Table 1.** Use and Perceived Effectiveness of Tall Man Letters

Items	Use of Tall Man Letters (%)		Effectiveness (%) 2016		
	2010	2016	Effective	Neutral or Don't Know	Not Effective
Computer drug selection screens (pharmacy)	54	83	73	21	6
Computer drug selection screens (prescriber)	44	82	64	29	7
Automated dispensing cabinet screens	53	80	67	26	7
Computer-generated pharmacy labels	55	80	72	21	7
Computer-generated/electronic medication administration records (eMARs)	50	79	65	27	8
Standard order sets	43	78	62	30	8
Smart pump drug libraries	42	77	55	38	7
Shelf/bin labels	51	75	65	28	7
Policies/protocols		73	44	46	10

### New ISMP Safety Video Series

ISMP has just released the first in a series of “video newsletters” being produced in partnership with the Temple University School of Pharmacy. The videos are designed to provide insight on emerging medication safety issues and a quarterly summary of top content from this newsletter. The first video, found at: [www.ismp.org/sc?id=1745](http://www.ismp.org/sc?id=1745), focuses on:

- **IV Push Medication Use:** Findings and guidelines for managing risk that were developed after a national ISMP summit.
- **Eliminating Ratio Expressions:** New United States Pharmacopeial Convention (USP) requirements to remove ratio expressions in drug labeling.
- **ISMP’s Targeted Medication Safety Best Practices:** Highlights of the 2016-2017 practices that address issues that continue to cause fatal and harmful errors.

## Tall Man Letters

### A review of the evidence

Numerous studies suggest that tall man letters used alone or with other text enhancements can reduce errors due to drug name similarity.<sup>5,7-14</sup> However, the evidence is mixed,<sup>15-17</sup> and several studies suggest that this method of name differentiation may not be effective. Most of the studies with either positive or negative results have methodological differences related to whether participants were laypeople or healthcare professionals, whether participants had knowledge of the purpose of tall man letters, the measure of performance (e.g., accuracy, recognition, memory, differentiation), the task performed (e.g., visual search, name recognition, differences in names, detection of change), the drug names tested, font style and size, and statistical size. Most of the studies also have significant limitations—

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While numerous studies between 2000 and 2016 have demonstrated the ability of tall man letters alone or in conjunction with other text enhancements to improve the accuracy of drug name perception and reduce errors due to drug name similarity,<sup>5,7-14</sup> some studies have suggested that the strategy is ineffective.<sup>15-17</sup> The evidence is mixed due in large part to methodological differences and significant study limitations (see the *sidebar*, **Tall Man Letters: A review of the evidence**). Nevertheless, while gaps still exist in our full understanding of the role of tall man lettering in the clinical setting, there is sufficient evidence to suggest that this simple and straightforward technique is worth implementing as one of numerous strategies to mitigate the risk of errors due to similar drug names. To await irrefutable, scientific proof of effectiveness minimizes and undervalues the study findings and anecdotal evidence available today<sup>18</sup> that support this important risk-reduction strategy. As such, the use of tall man letters has been endorsed by The Joint Commission (recommended, not required), the US Food and Drug Administration (FDA) (as part of its Name Differentiation Project), as well as other national and international organizations, including the World Health Organization and the International Medication Safety Network (IMSN).<sup>6,19</sup>

Periodically, ISMP updates its list of drug name pairs with recommended **bolded**, tall man letters. The update includes analyses of reported incidents from our error databases, a survey of practitioners on the topic, and an internal assessment of drug name pairs that would benefit from the application of bolded, tall man lettering. The internal assessment includes an exploration of orthographic similarity; patterns of similarities in dosage, form, and use; and the potential for (or actual) patient harm if the drugs are confused.

**ISMP survey.** ISMP conducted a survey on drug name pairs with tall man letters between February and April 2016 and received 235 responses. The findings from the survey and a discussion of how we update the ISMP list follow.

**Scope and effectiveness of tall man letters.** Eighty percent or more of the respondents reported that their facility uses tall man lettering for similar drug names that appear on prescriber and pharmacy computer drug selection screens, automated dispensing cabinet (ADC) screens, and computer-generated pharmacy labels. Between 73% and 79% of respondents use tall man lettering for similar drug names that appear on medication administration records (MARs), standard order sets, smart pump drug library screens, shelf/bin labels, and policies/protocols. This represents a significant increase in usage of tall man lettering since our prior survey in 2010. All areas of implementation increased by approximately 50% or more, and usage with prescriber computer drug selection screens, order sets, and smart pumps increased by at least 80% (**Table 1**, page 1). However, there were multiple respondents who reported that their technology systems did not allow them to change the case of letters in drug names, use mixed case letters, or bold the tall man letters—an additional text enhancement for tall man letters that ISMP recommends.

Between two-thirds and three-quarters of respondents thought that tall man lettering has been effective in reducing the risk of errors due to look-alike drug names, with the exceptions of tall man lettering used in policies and protocols and smart infusion pump screens. While some respondents were undecided about the effectiveness of tall man letters, very few felt tall man letters were wholly ineffective in reducing errors (**Table 1**, page 1).

**Internal selection of name pairs for tall man letters.** For respondents who use tall man letters, most (51%) told us they employ this strategy for more than 30 drug name pairs; 41% use it for 11-30 pairs; and 8% use it for 10 or fewer drug name pairs. This represents a 38% increase since 2010 in employing tall man letters for more than 30 drug name pairs. Most respondents have built their list of drug name pairs with tall man

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most notably, their performance in a laboratory setting, not in a real clinical setting.

The first study to demonstrate that tall man letters reduced drug selection errors in a simulated pharmacy-dispensing environment was published by Grasha in 2000.<sup>9</sup> A study by Filik et al. in 2004 also found that tall man lettering reduced drug name confusion during a search of complex drug labels.<sup>7</sup>

In 2006, Filik et al. evaluated both tall man lettering and color for their ability to reduce confusion with similar drug names.<sup>8</sup> The authors found that tall man letters made it easier to distinguish look-alike drug names if participants were aware of the purpose of the tall man letters. Another experiment found that tall man lettering and/or color did not make similar drug names less confusable in memory, but that tall man lettering may increase task attention. The same year, Gabriele conducted a study with nurses and found that name pairs with tall man lettering were easier to distinguish than those containing boldface characters.<sup>14</sup> However, name pairs with unique letters presented in white characters on a black rectangle background were found to be more distinctive, concluding that the use of contrast is most helpful in differentiating names.

In 2009, Schell conducted a study with university students who were not health professionals and found that tall man lettering did not have an effect on the recognition of drug names.<sup>15</sup> Tall man lettering led to an increase in false alarms, in which participants thought the drug names were different when they were the same. The change in font type and size may have been confused as name changes, masking any advantage of tall man letters.

In 2010, Filik et al. asked participants to determine whether drug names were the same or different.<sup>13</sup> Laypeople made fewer errors when the drug names contained tall man letters. Healthcare professionals performing a task based on electronic prescribing also made fewer errors when the drug names contained tall man letters.

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letters utilizing resources such as the ISMP list, FDA list, internal risk and error data, and drug information vendors. Most respondents (85%) use tall man lettering that complies with the ISMP and FDA recommended configurations.

**Communication of name pairs with tall man letters.** The purpose and intended use of name pairs that require tall man letters are communicated to staff primarily via policy statements (48%); inservices, educational programs, and orientation (39%); memos and posters (35%); and staff meetings (35%). Posting on an Intranet site and providing emails were also listed as ways to educate staff about tall man letters. However, 1 in every 5 respondents did not know how the purpose and use of tall man letters has been communicated to staff. Some respondents reported that their use has been integrated into the system without explanation. Providing education to practitioners about the purpose of tall man lettering is key, as the use of tall man letters to differentiate drug names is more successful to those who are aware of its purpose.<sup>8</sup> A few respondents commented that physicians are confused about tall man letters, while others noted that physicians have told them they find the tall man lettering helpful when making drug selections.

**Reduction of errors.** The vast majority of respondents felt that the use of tall man lettering helped reduce the risk of errors among medications with look-alike names. Specifically, about 86% of respondents felt that the use of tall man letters by the pharmaceutical

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**Table 2.** Awareness of Confusion and Agreement with Proposed Drug Names Added to the ISMP List

Drug Name Pair/Groups	Aware of Confusion?		Add to ISMP List?			Agree with Proposed Tall Man Letters?		
	Yes	No	Yes	No	Don't Know	Disagree	Neutral	Agree
meth <b>IMA</b> zole and met <b>OL</b> azone and methazol <b>AMIDE</b>	27	73	50	27	23	10	32	58
di <b>AZE</b> pam (now changed to diazepam) and diltiaz <b>ZEM</b>	46	54	55	32	13	22	24	54
rif <b>AMP</b> in and rif <b>AXI</b> min	73	27	88	6	6	6	9	85
oxy <b>MOR</b> phone ( <b>HYDRO</b> morphine, oxy <b>CODONE</b> , and Oxy <b>CONTIN</b> , already on list)	71	29	81	12	7	7	16	77
penicill <b>AMINE</b> and penicillin	51	49	69	15	16	8	19	73
<b>LEVO</b> leucovorin and leucovorin	38	62	76	13	11	5	21	74
clo <b>BAZ</b> am (and clonazepam, already on list with clo <b>NID</b> ine, clo <b>ZAP</b> ine, and <b>LOR</b> azepam)	28	72	52	28	20	12	32	56
levo <b>FLOX</b> acin (and lev <b>ETIRA</b> cetam, already on the list with lev <b>OCARN</b> itine)	58	42	71	20	9	8	16	76
<b>DEPO</b> -Medrol and <b>SOLU</b> -Medrol <sup>1</sup>	70	30	74	15	11	8	13	79
<b>SAX</b> agliptin and <b>SIT</b> agliptin <sup>2</sup>	49	51	81	10	9	2	14	84
eri <b>BUL</b> in and epi <b>RUB</b> icin	20	80	53	21	26	8	34	58
<b>PONAT</b> inib and <b>PAZOP</b> anib	17	83	54	19	27	4	30	66
idaru <b>CIZU</b> mab (and <b>IDA</b> -rubicin, already on the list with <b>DOXO</b> rubicin)	24	76	55	16	29	8	30	62

<sup>1</sup>Solu-**MEDROL** is already on the list with Solu-**CORTEF**; changing to **SOLU**-Medrol

<sup>2</sup>sita**GLIP**tin is already on the list with **SUMA**riptan; changing to **SIT**agliptin

> **Tall Man Letters** cont'd from page 2

A year later, Darker et al. studied the impact of tall man lettering on drug name confusion among healthcare prescribers who were aware of the purpose of tall man lettering.<sup>10</sup>

The authors found that tall man letters improved the accuracy of drug name perception. However, a similar benefit was found when the entire drug name was presented in capital letters, suggesting that the advantage of tall man letters might be related to the size of the letters rather than highlighting a critical portion of the drug name.

In 2013, Irwin et al. studied the effects of proximity of similar drug names, use of tall man letters, and time pressure on accurate visual searches during medication selection from a computer screen.<sup>16</sup> The findings suggested that the presence of several similar drug names on the screen, alone and together with time pressure, reduced the accuracy of selecting the correct drug. When tall man letters were tested with pharmacists, a significant impact was seen with the perception of drug names, but not enough to increase accuracy.

In 2014, Or and Chan studied the effects of various text enhancement methods (tall man letters, bolding, larger lowercase letters, lowercase red lettering) on the task of determining if two drug names were the same or different.<sup>11</sup> The study found that using tall man letters resulted in shorter response times, but not as significant as larger lowercase letters or red lettering. However, none of the text enhancements had an impact on the proportion of correct responses. The same year, Or and Wang published the results of a study that again examined the use of several text enhancement methods to differentiate between look-alike drug names.<sup>12</sup> The study showed that **bolding** the tall man letters in a look-alike drug name yielded the highest level of accuracy when compared to bolded text alone, tall man letters alone, colored text, contrasting text, and lowercase letters.

Earlier this year, DeHenau et al. published a study of the impact of tall man lettering when displaying labels with look-alike drug

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industry helps to reduce drug selection errors. More compelling is the fact that approximately half (52%) of the survey respondents were able to recall one or more instances when tall man lettering had actually prevented them from prescribing, transcribing, dispensing, or administering the wrong medication. Respondents provided numerous examples of look-alike name pairs involved in these potential events, the most common of which were hydr**ALAZINE** and hydr**OXY**zine, vin**CRIS**tine and vin**BLAS**tine, lev**ETIRA**cetam and levo**FLOX**acin (a new name that will be added to the ISMP list), and Oxy**CONTIN**, oxy**CODONE**, and **HYDRO**codone. Several respondents reported that they frequently hear from physicians, medical residents, pharmacy students, and/or nurses, that the use of tall man letters, particularly for opioids, has helped them avoid errors when selecting drugs during order entry, removing medications from an ADC via override, and prior to drug administration when referencing the MAR.

In addition to distinguishing portions of drug names that are dissimilar, tall man letters were often reported by respondents as an effective *alert system* that quickly captured their attention and caused them to pause, read the drug name more carefully a second time, and make sure the drug was appropriate for the patient. The presence of the tall man letters made staff aware of the possibility of an error, causing them to take steps not otherwise taken, such as reading through an entire pick list or verifying the drug a second time, to ensure they have the correct drug. Respondents referred to the tall man letters as a “visual alert system” and a “subconscious cue” that help to “refocus the eye” and “slow down or stop the process” to ensure they have the correct drug. They reported that the tall man letters serve as a reminder that the drug has been confused with another medication with a look-alike name, causing them to pay more attention to the spelling of the medication. As one respondent commented, “I train myself to search for tall man letters when verifying medications, and have prevented errors by focusing on these different letters for drugs with similar names.” Another respondent noted, “When I see the tall man lettering, it alerts me that a look- or sound-alike drug is being dispensed, so I make a point of verifying the indication of the drug to be sure I have selected the correct one.”

Also, several managers indicated seeing reports of close calls in which tall man letters had helped to prevent or detect medication errors. A few others reported that analyses of wrong drug selection errors in their facilities show fewer safety reports for medications that use tall man letters than those that do not—the latter names are then reviewed for possible tall man letters. Some respondents also reported seeing a decrease in errors after implementing tall man letters; however, as one respondent pointed out, many times other strategies are also implemented to reduce the risk of mix-ups, so the effect may be related to a “bundle” of risk-reduction strategies, one of which is the use of tall man letters. Other risk-reduction strategies may include: preventing the consecutive appearance of potentially confusable drug names on screens; including both the brand and generic names for redundancy; including the indication with orders and prescriptions; storing products with look-alike names in different locations; and implementing drug-specific strategies such as stocking different forms or strengths of medications with similar names.

While more than one-third of respondents (37%) could not say with certainty that tall man lettering had helped them avoid an error, only 10% felt that their use was not helpful. Among these respondents, two suggested that tall man lettering has become antiquated given current technologies, particularly barcode scanning.

**Update of ISMP’s list.** One of the primary reasons for conducting this survey was to utilize the findings to update ISMP’s current list of look-alike drug name pairs with tall man letters. We believe healthcare practitioners should be involved in the process of

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names.<sup>5</sup> The study found that tall man lettering resulted in faster detection of dissimilarities by healthcare professionals than laypeople, which could be explained by the health professionals’ prior knowledge of tall man lettering as an approach to name differentiation. The study concluded that tall man letters improve detection of dissimilarities due to bottom-up and top-down attentional systems—meaning the impact is due to both visual stimuli (capital letters) that capture attention, as well as feature-based attention that allows health professionals who are familiar with the purpose of tall man lettering to set a volitional control signal, guiding attention to the tall man letters to help differentiate the drug names.

A recently published time series analysis by Zhong et al. of 42 children’s hospitals over 9 years found no significant reduction in errors when using tall man letters with look-alike drug names.<sup>17</sup> However, the study methodology has numerous limitations beyond those raised by the authors as well as inaccuracies,<sup>2</sup> beginning with the premise that The Joint Commission (TJC) required hospitals since 2007 to adopt tall man letters. Although recommended by TJC as one of a number of strategies to prevent confusion with look-alike drug names, tall man lettering was never required by any standards or regulatory agency. The study makes the assumption that the participating hospitals were using tall man letters during the study period. However, it is unknown at what point each of the 42 hospitals had implemented tall man letters, if at all, for the name pairs under study. As noted by Lambert et al. in an editorial about the study, as a result of not knowing this crucial information, one may conclude that the ineffectiveness of tall man letters to reduce errors could be due to not employing the strategy, rather than the ineffectiveness of the strategy.<sup>2</sup>

Another problem is that 6 of the 12 name pairs studied were brand-brand name pairs, and one was a brand-generic name pair. These were converted to generic names in the study, which are much less similar (e.g., Zyr**PREXA** and Zyr**TEC** vs. **OLANZ**apine and

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**Table 3.** Existing and New or Changed (Red Text) Drug Names

ISMP List of Additional Drug Name Pairs with Tall Man Letters	
ALPRAZolam – LORazepam	metryro <b>SINE</b> – metyra <b>PONE</b>
amLODIPine – aMILoride	mi <b>FEPRIS</b> tone – mi <b>SOPRO</b> Stol
ARIPiprazole – RABEprazole	mito <b>XANTRONE</b> – mito <b>MY</b> cin
azaCITIDine – aza <b>THIO</b> prine	
cef <b>FAZ</b> olin – cef <b>TRIA</b> Xone – cef <b>TAZ</b> idime – cefo <b>TE</b> Tan – cef <b>OX</b> itin	morphine – <b>HYDRO</b> morphine Nex <b>IUM</b> – Nex <b>AVAR</b>
Cele <b>BREX</b> – Cele <b>XA</b>	ni <b>MOD</b> ipine – <b>NIFE</b> dipine – ni <b>CAR</b> dipine
chlorpro <b>MAZINE</b> – chlordi <b>azePOXIDE</b>	Novo <b>LOG</b> – Novo <b>LIN</b>
CISplatin – <b>CARBO</b> platin	
clonaze <b>PAM</b> – clo <b>NID</b> ine – clo <b>ZAP</b> ine – clo <b>BAZ</b> am	OXcarb <b>azepine</b> – car <b>BAM</b> azepine oxy <b>CODONE</b> – Oxy <b>CONTIN</b> – oxy <b>MOR</b> phone – <b>HYDRO</b> morphine
clonaze <b>PAM</b> – LORazepam	<b>penicillAMINE</b> – <b>penicillin</b>
clo <b>NID</b> ine – Klono <b>PIN</b>	
DACTINomycin – DAP <b>TO</b> mycin	<b>PENT</b> obarbital – <b>PHEN</b> obarbital
diaze <b>PAM</b> – dil <b>tiaZEM</b>	<b>PONAT</b> inib – <b>PAZOP</b> anib
DOCEtaxel – PAC <b>LIT</b> axel	<b>PRAL</b> atrexate – <b>PEME</b> trexed
e <b>PHED</b> rine – <b>EPINEPH</b> rine	Pri <b>LOSEC</b> – <b>PROZ</b> ac
eri <b>BUL</b> in – epi <b>RUB</b> icin	<b>QUET</b> iapine – <b>OLANZ</b> apine
fenta <b>NYL</b> – <b>SUF</b> entanil	qui <b>NINE</b> – qui <b>NID</b> ine
FLUoxetine – <b>DUL</b> oxetine – <b>PAR</b> oxetine	romi <b>PLO</b> stim – romi <b>DEP</b> sin
fluvoxa <b>MINE</b> – flu <b>PHENAZ</b> ine – flavox <b>ATE</b>	ra <b>NIT</b> idine – ri <b>MANT</b> Adine rif <b>AMP</b> in – rif <b>AXIM</b> in
guan <b>FACINE</b> – guai <b>FEN</b> esin	risperid <b>ONE</b> – r <b>OPIN</b> Role – Risper <b>DAL</b>
hydro <b>CHLORO</b> thiazide – hydro <b>OX</b> zine – hydr <b>ALAZINE</b>	ri <b>TUX</b> imab – in <b>FLIX</b> imab
Huma <b>LOG</b> – Humu <b>LIN</b>	Sand <b>IMMUNE</b> – Sando <b>STATIN</b>
<b>HYDROXY</b> progesterone – medroxy <b>PROGESTER</b> one	SEROquel – <b>SINE</b> quan
<b>HYDRO</b> codone – oxy <b>CODONE</b>	Solu- <b>CORTEF</b> – <b>SOLU</b> -Medrol – <b>DEPO</b> -Medrol
idaric <b>UZU</b> mab – <b>IDA</b> rubicin – <b>DOXO</b> rubicin	<b>SORA</b> fenib – <b>SUN</b> itinib
<b>INV</b> anz – <b>AVIN</b> za	sulfad <b>IAZINE</b> – sulfas <b>ALAZ</b> ine
<b>ISO</b> tretinoin – tretinoin	<b>SUMAT</b> riptan – <b>SAX</b> agliptin – <b>SIT</b> agliptin
La <b>MIC</b> tal – Lam <b>ISIL</b>	<b>SUMAT</b> riptan – <b>ZOLM</b> itriptan
lami <b>VUD</b> ine – lamo <b>TRI</b> gine	ti <b>ZAN</b> idine – tia <b>GAB</b> ine
<b>LEVO</b> leucovorin – leucovorin	tra <b>ZOD</b> one – tra <b>MAD</b> ol
lev <b>OCAR</b> nitine – lev <b>ETIR</b> acetam – levo <b>FLOX</b> acin	<b>TREN</b> tal – <b>TEG</b> retol
metro <b>NIDAZOLE</b> – met <b>FORMIN</b>	val <b>ACY</b> clovir – val <b>GAN</b> ciclovir
methi <b>MAzole</b> – met <b>OL</b> azone – methazo <b>AMIDE</b>	Zy <b>PREXA</b> – Zyr <b>TEC</b>

Many respondents shared their thoughts regarding other drug name pairs that were not included in the survey. We reviewed each suggestion carefully while considering all risk factors and the need to keep the list short enough to avoid diluting the effectiveness of tall man letters. Overuse of tall man letters may reduce effectiveness, as names no longer appear novel.<sup>6</sup> More than 60 name pairs with tall man letters were suggested (many brand names, which we hesitate to include without FDA approval). There were 5 pairs that were closely associated with high risk of harm and, thus, were added to the list:

■ **HYDROXY**progesterone (and medroxy**PROGESTER**one already on the FDA list)

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cetirizine). If the hospitals in the study used brand and generic names together, or only allowed orders by generic names, they could not have made any of the brand-brand or brand-generic errors selected for analysis. The authors also failed to validate that the hospitals were using electronic prescribing, the only data source for the study. In our experience, most hospitals in 2007 did not have electronic prescribing capabilities, nor were many using tall man letters (our list was first published in 2008). Lambert et al. also points out that the study window of 4 days may not have captured all possible errors or interceptions.<sup>2</sup> For example, if an error occurred on day 4, it could have been caught after the study's 4-day window. Also, charts were not reviewed to confirm that an actual error occurred. For example, a patient could be receiving both drugs within the tested name pairs for deliberate purposes—only chart review could have confirmed if an error happened.

While the research on tall man lettering may still be inconclusive, we find it sufficient to continue our recommendation to use this strategy as one means of reducing errors with drugs with look-alike names. Specifically, our recommendation is to employ the use of **bolded** tall man letters as listed in the FDA and ISMP lists for selected drug names in use in your practice setting. We are also asking information technology and drug information vendors to improve capabilities in this regard.

We agree that additional research is needed regarding the impact of tall man letters in actual clinical settings and the factors that have the potential to influence their efficacy. However, it would be tragic to abandon this important safety initiative simply because the evidence is inconclusive, particularly given the limitations of available studies. To do so would give short shrift to other important criteria including human factors principles and anecdotal evidence that tall man letters help to prevent drug name mix-ups. We must make informed decisions based on the best available information and common sense.<sup>20</sup>

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- mi**FEPRIS**tone and mi**SOPRO**stol
- metyros**SINE** and metyra**PONE**
- hydro**CHLORO**thiazide (and hydro**OXY**zine/hydr**ALAZINE** already on the FDA list)
- ra**NITI**dine and ri**MANTA**dine

**Table 3** (page 5) provides an updated ISMP list of drug name pairs with tall man letters, with the new additions or changes in the tall man lettering scheme highlighted in red. By early next week, the **FDA and ISMP Lists of Look-Alike Drug Names with Recommended Tall Man Letters** will also be updated on our website to reflect these changes ([www.ismp.org/sc?id=1746](http://www.ismp.org/sc?id=1746)).

**Standardization of tall man letters.** To promote standardization regarding which letters to present in uppercase, ISMP follows a tested methodology whenever possible called the CD3 rule.<sup>20</sup> The rule suggests working from the left of the drug name first by capitalizing all the characters to the right once two or more dissimilar letters are encountered. Then, working from the right of the word back, returning two or more letters common to both words to lowercase letters. When the rule cannot be applied because there are no common letters on the right side of the word, the methodology suggests capitalizing the central part of the word only. When this rule fails to lead to the best tall man lettering option (e.g., makes names appear too similar or hard to read based on pronunciation), an alternative option is considered. ISMP suggests that the tall man lettering scheme provided by FDA and ISMP be followed to promote consistency.

#### References

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## Special Announcements

### ISMP webinars

Join us on **June 27** for our next webinar, *An Anesthesia Perspective: Tackling Medication Safety Challenges*. Our speaker will highlight medication-related challenges with anesthesia care, including the management of malignant hyperthermia, use of reversal agents, continuous monitoring during opioid infusions, safe labeling in the surgical setting, and much more.

Join us on **July 20** for our popular, annual webinar, *2016 Update on The Joint Commission Medication-Related Standards*. Frequent challenges associated with medication-related standards and National Patient Safety Goals will be presented along with examples of how to achieve compliance.

For details, visit: [www.ismp.org/sc?id=349](http://www.ismp.org/sc?id=349).

### Take our survey on “Use as directed”

Pharmacists, especially those who work in an outpatient setting, we would appreciate your help with a 2-minute survey about use of the term “as directed” in prescription directions. Is it still used with electronic prescribing? Which drugs are most commonly associated with “as directed,” and how does that impact patient counseling? Please complete the survey by **June 19** by visiting: <https://surveys.ismp.org/s3/Use-as-Directed-Survey>. Thanks!

To subscribe: [www.ismp.org/sc?id=382](http://www.ismp.org/sc?id=382)



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