

# Patient Safety Tip of the Week

December 1, 2015

## TALLman Lettering: Does It Work?

We've long been fans of TALLman lettering to help avoid look-alike sound-alike (LASA) drug errors. We've recommended its use (eg. HYDR**O**morphone) in our numerous columns on the dangers of Dilaudid. In fact, we've even sometimes suggested our own TALLman lettering schemes for certain LASA drug pairs (see our prior columns "[Ophthalmology: Blue Dye Mixup](#)" and "[Another Blue Dye Eye Mixup](#)").

But does TALLman lettering actually reduce such errors? It is a very simple and logical concept so it makes a lot of sense to use. But, like any other patient safety intervention, we should assess whether it indeed reduces errors and does not introduce unintended consequences.

We were quite surprised when we read in a recent safety bulletin on TALLman lettering from ISMP Canada that there were no published studies demonstrating the effectiveness of TALLman lettering in reducing errors associated with drug name confusion ([ISMP Canada 2015](#)). Then about a week later came along a study in pediatric hospitals that showed the introduction of TALLman lettering was not associated with any reduction in potential LASA errors ([Zhong 2015](#)).

ISMP Canada, recognizing that overuse of this technique might reduce its effectiveness, recommends that use of TALLman lettering be restricted to drug name pairs associated with significant risk to patient safety ([ISMP Canada 2015](#)). Therefore, they embarked on a project that began with analyses of reported incidents from several Canadian databases and did a systematic risk assessment to determine which LASA pairs would benefit most from TALLman lettering. They then sought feedback and ultimately published a list of 33 LASA drug pairs. That list is considerably shorter than the 2011 list published by ISMP US ([ISMP 2011](#)).

The pediatric study ([Zhong 2015](#)) used pharmacy data for pediatric inpatients from 42 children's hospitals from 2004-2012. The researchers searched within each hospitalization for the occurrence of patterns for a total of 12 LASA drug pairs deemed highly relevant to pediatric inpatients. TALLman lettering was implemented in 2007. They performed segmented regression analyses to look for changes after the implementation. They found no downward trend in potential LASA drug error rates over any time period 2004 onwards. They conclude that whether TALLman lettering is effective in clinical practice warrants further study.

One issue that arises in discussions on TALLman lettering is whether we overuse it and create a “fatigue” similar to alert fatigue or alarm fatigue. That is one of the reasons the recent ISMP Canada list ([ISMP Canada 2015](#)) was kept so short.

ISMP (US) and other organizations put together TALLman lettering lists after seeking input from multiple stakeholders. An ISMP survey in 2008 showed that most hospitals were using TALLman lettering in some capacity and the majority felt that it was effective in reducing errors ([Grissinger 2012](#)). But those responses were largely subjective and anecdotal.

Experimental results in 2008 and early 2009, just as TALLman lettering was being more widely adopted, showed that TALLman lettering reduced drug name confusion errors in a series of laboratory-based tasks, in both younger and older adults, and healthcare practitioners ([Filik 2010](#)).

But even one of the studies used to endorse the implementation of TALLman lettering ([Gerrett 2009](#)) was somewhat cautious in its recommendations. It noted that, given the results of their lab experiments, the authors would advocate a pragmatic approach with the implementation of a specific rule-based Tall Man variant for a limited and specified set of look-alike, sound-alike medicines. They felt that this was unlikely to result in any greater harm when compared with the then current standard of lowercase or uppercase. They noted the finding that error in practice was more likely to occur with dose (LASA errors are more likely to occur when the dose of the two drugs, in mg, is similar), formulation or a combination of these with look-alike medicine name highlights the need for broader research.

So does this mean we should stop using TALLman lettering conventions for high-risk LASA drug pairs? Hardly. But it does tell us that we need to do further research in adult populations to determine which TALLman conventions for which drugs are effective in actually reducing LASA errors. Remember, there are other methods that have been used to try to help us distinguish unique letters in drug names (different color letters, different color backgrounds, italics, underlining, different fonts, etc.). But those methods also have largely escaped systematic review for their effectiveness. Also unanswered is whether use of TALLman lettering is equally effective at the dispensing, preparation, or prescribing phases. Use of TALLman lettering probably does not result in harm. However, we also are unaware of any studies that have addressed unintended consequences of either TALLman lettering or any of the other methods. We’ll bet some are out there. Particularly for hospitals with long lists of LASA pairs you might find a TALLman convention for one pair might include a TALL sequence similar to yet another drug.

There have been so many patient safety initiatives that are so attractive in concept yet prove to be ineffective when we get around to actually measuring their impact. Let’s hope TALLman lettering does not fall into that category. But the Zhong study certainly suggests that we need to do a systematic review of the impact of TALLman lettering in multiple other venues.

While waiting for such future studies, it is probably wisest to reserve your TALLman lettering conventions for those LASA drug pairs with the most potential to have serious patient safety consequences in your organizations.

**Update:** See our July 2016 What's New in the Patient Safety World column “[ISMP Updates TALLman Lettering List](#)”.

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