Reviewer's report

**Title:** Evaluation of Standardized Doctor's Order Sets as an Educational Tool for Undegraduate Medical Students

**Version:** 1  **Date:** 15 September 2012

**Reviewer:** Christopher Feddock

**Reviewer's report:**

Overall, this is an interesting study on an important topic in medical education. With the increasing use of standardized order sets, educators need to have a better understanding of how their use impacts student learning. This small study presents some interesting data on this issue, but its limited sample size and numerous flaws hamper interpretation of the results.

**Major Revisions:**

1. The adoption of standardized order sets seems erratic. Despite being available for over a year prior to the study beginning, the two year study documented only 2 students used the standardized order set at Hospital B (I believe this is defined as “TWH” in Table 1, but this is not clearly designated). By comparison, one student used the standardized order set at Hospital A (again I assume this is “SMH” in Table 1). Not only was adoption woefully inadequate, but how were students using the standardized order set at hospital A if the methods describe that “only Hospital B trainees have access to the COPD order set.” Even more significant cross-contamination was noted with Alcohol Withdrawal order set. Again, “only Hospital A trainees have access to the CIWA-Ar order set” according to the methods. However, table 1 again demonstrates that 5 (28%) students at Hospital B used standardized orders. Given this situation, the authors cannot claim to have a control group that was not exposed to standardized orders.

2. The erratic adoption hampers the evaluation of the primary outcome, total exam scores among students that wrote orders. Since only 68 students wrote alcohol withdrawal orders, 20 of whom used standardized orders, the sample size is not sufficient to draw any conclusions. To detect a meaningful difference, even the authors admit that they needed 120 participants to achieve an 80% power.

3. The combination of Year 3 and Year 4 students places serious face validity on the outcomes. Year 3 and 4 students should have vast differences in exposure and experience. Combining them into the same groups and testing them on a knowledge based examination introduces significant heterogeneity to the results, particularly since one would assume that some 4th year students were exposed to a standardized order set as a 3rd year student, as a 4th year student, both years or not at all. These are vastly different characteristics that should not be folded into a relatively homogeneous 3rd year group who only differ on exposure.

**Minor Revisions**
The language in the paper needs consistency. It is a difficult manuscript to follow because of multiple different references. For example, the text only refers to Hospital A and Hospital B, yet Table 1 makes reference to TWH and SMH, which are not defined in the remainder of the paper. Likewise the assessment instrument for the intervention is called a “questionnaire” in some areas but as a “post-test” or a “test” or an “examination” in others. Please decide on a name for your intervention assessment and be consistent throughout the manuscript.

**Level of interest:** An article of importance in its field

**Quality of written English:** Not suitable for publication unless extensively edited

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests