Reviewer's report

Title: Do decision support systems influence variation in prescription?

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Reviewer: Edward Hammond

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Title: Do decision support systems influence variation in prescription?
Author: Judith D. de Jong, et/al.
Reviewer: W. Ed Hammond
Date: December 13, 2008

General Comments:
I would like to see this paper published. The authors have made considerable improvements in the last revision, addressing most on my comments. However, some concerns remain.

Major compulsory revisions:
The paper still contains a number of redundant sentences. You make the same statement in more than one place. One example is the next to last sentence just above the results section on page 11.

My major concern still deals with the concept of variation. First, what do the authors mean by variation. Does it mean variation in prescribing to similar patients with the same diagnoses? Does it mean, for those MDS using DSS, a prescribing difference in what the guideline suggests? Does variation in this group mean a departure from what is recommended? Do you mean inconsistency in prescribing? Does variation mean choosing a different drug out of the recommended set? I am still not sure what your results mean?

There are many legitimate reasons with prescribing different medications to different patients with the same disease – including personal preference, drug availability, adverse reactions, drug interactions, or severity of symptoms. None of these reasons are even acknowledged in the paper. The word appropriate is never used. If a MD was 100% is following the DSS recommendation, would the variation in prescribing still be present? How much variation is inherent in the guidelines themselves?

The biggest problem is trying to understand what appropriate behavior on the part of the MDs is and what is not. Do you have any statistics on how often MD prescribing was inappropriate? In my opinion, you measure the wrong things. I would be interesting in understanding if the use of DSS results in more appropriate and correct prescribing. I see nothing in the paper that addresses this issue. In fact, that statistic would be useful for the MDs not using DSS. Your comment in the middle of page 4 suggests that you think cost-effective treatment is inappropriate.
I have a problem in accepting your premise that evoked sets are bad or incorrect. Most evoked sets are likely to result from experience and education. Even advertising contributes to awareness and appropriate prescribing. You include no data to support your statement “The evoked set should become less important or should even be avoided.” Part of the value of DSS would be altering the evoked sets. You also include no numbers or evidence for illegitimate variation in prescribing. What is the basis for inferring the variation in prescribing is illegitimate.

A short description of the system would be useful. You do refer the reader to another paper, but a short descriptive comment would be helpful. Does the DSS provide a list of appropriate drugs, given the diagnoses? How difficult is it for the MD to select a drug outside of the recommended set?

On page 7, you refer to a Table 0; table 0 does not exist.

I question whether the two hypotheses defined on page 7 are the most appropriate criteria for this study. Characteristics of the DSS and just the fact it is used is likely to influence compliance, unless the MDs thought the guidelines were badly flawed? Nothing in the paper discusses whether the patients benefit from the MD us of DSS and prescribing guidelines.

The comment at the bottom of page 7 that MDs “can more easily prescribe according to professional guidelines, even without having to make a conscious choice” is scary. Obviously the guidelines can never take all factors into consideration, and the human input will always be critical. The guidelines are just that – guidelines. MDs should always make a conscious choice as to the treatment.

On page 9, the two groups are referred to as the two extremes. Recommend groups be used throughout rather than extremes. Under the Model section, the word “nested” might be replaced with included.

On page 11, it does appear that using the DSS improves compliance with recommended treatment by 14%. I think this is a positive finding, and is one of the important findings of the study.

The conclusion section is weak. What are your recommendations? Did patients who were treated by MDs using DSS have better outcomes? What do you intend for your readers to have learned as a result of reading this paper?

**Level of interest:** An article of limited interest

**Quality of written English:** Acceptable

**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.