Author's response to reviews

Title: Utilization of the PICO framework to improve searching PubMed for clinical questions

Authors:

Connie Schardt (connie.schardt@duke.edu)
Martha B Adams (martha.adams@duke.edu)
Thomas Owens (thomas.owens@duke.edu)
Sheri Keitz (sheri.keitz@duke.edu)
Paul Fontelo (fontelo@nlm.nih.gov)

Version: 3 Date: 20 April 2007

Author's response to reviews: see over
Thank you for your comments and review of our article, *Utilization of the PICO framework to improve searching PubMed for clinical questions*. We have reviewed the comments and made appropriate revisions to the manuscript. The following is a summary of the major revisions:

**References**: The numbering of the references is incorrect after reference 5. This was the result of a typographical error. The references have all been reviewed and the numbering corrected.

**Questions and study designs**: We added discussion about the 3 questions and which study designs are required to the Methods section. See Figure 2.

It is usual convention to express precision as percentages and with confidence intervals: Changed to percentages.

Editorial edits were completed, including rearranging paragraphs and consistent abbreviations.

**Statistical analysis**: We calculated 95% confidence intervals for the precision for each question using a lower boundary of zero. The 95% confidence limits were overlapping, suggesting no statistical difference between the groups. Although there were no statistical differences between the groups, there may be a trend toward improved precision with the PICO search screens. See Table 2. We noted that it was never our intent to achieve statistical significance, rather to explore possible difference between the search screens.

**Sample size**: We did address the small sample size in the discussion. “Third, as this study was designed as a pilot for a larger study, the sample size was small and may not have been adequately powered to show a significant difference.”

**Literature review**: We reviewed the literature again and added several references. We appreciate reviewer Coiera calling attention to additional important literature in this area. However, some of those studies, authored by Westbrook and himself, addressed a different question related to the utility of online retrieval systems (in general) to improve the quality of answers to clinical questions. Our question focused specifically on the PICO framework, as a tool to increase the precision of search strategies in PubMed.

**Weak study design**: Our intention was to be comprehensive in identifying potentially relevant articles, not to test inter-rater reliability between the reviewers. We agree with the reviewer that the ultimate purpose of a search is to directly improve patient care. However, this study was intended to look at the actual search process with the intermediate measure of precision. Improving the search strategy and the retrieval of
information is an important step towards improving the quality of answers to clinical questions. We have clarified this in the discussion.

Finally, we disagree with the reviewers contention that findings are only worthy of publication if the results achieve statistical significance. We believe there is value in publication of results that describe new methods as well as report trends worthy of further study.

Connie Schardt
Martha B. Adams
Thomas Owens
Sheri Keitz
Paul Fontelo