Reviewer's report

Title: Evidence for handheld electronic medication records in improving care: a systematic review

Version: 2 Date: 2 June 2006

Reviewer: Jonathan Handler

Reviewer's report:

General
This is an article on a very important topic. Handheld EMR's are widely believed to be an important component of next generation care. Most believe that greater access to the EMR will lead to improvements in clinical care. The handheld EMR (as defined in this article) provides clinicians with an additional method for access to the benefits of an EMR. Logically then, it seems that a handheld EMR should be able to positively affect outcomes, but empirical evidence is needed to actually prove or disprove this hypothesis. This article attempts, through a systematic review of the existing literature, to clarify what is actually known about the ability of a handheld EMR to improve patient care.

The paper is well-written. The authors define the EMR clearly and broadly. The authors also clearly defined their methods, including their search strategy, in a way that would allow replication of their methodology.

The articles in this review were not only few in number (two), but very low in quality despite the requirement for randomized, controlled trials. The authors do a very nice job of highlighting the many weaknesses of the two studies that they reviewed. Both studies had very small sample sizes (3 practitioner subjects in one, and 6 practitioner subjects in another). There was no diversity in the practitioner subjects in the studies, and minimal diversity in the patient subjects. Both studies were performed in an environment of orthopedic care. In one study, the 3 practitioners were anesthetists, and in the other the 6 practitioners were house officers caring for orthopedic inpatients. There was no diversity in the type of software or hardware used in these studies. The outcome measures were soft and not patient-based -- time required for documentation, documentation completeness, and documentation correctness. The studies pre-date wireless technology, and the applicability of their results to the current day is questionable. As a result, the generalizability and utility of these studies is low. The authors reach the same conclusion, and urge further research.

Had the authors limited their search to randomized controlled studies, then this might have excluded better studies that simply were not randomized. However, as the authors note in their discussion, the set of rejected studies did not include any that were controlled but not randomized.

Although no major conclusions can be drawn from the studies that were found because of their low quality, the conclusion that the literature on this subject is lacking in well-performed studies is an important one, and supported by their findings. This conclusion has importance to those closely involved in this field, and therefore this paper should be published.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

None.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

The abstract should mention that the set of rejected studies did not include any that were controlled but not randomized.

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Discretionary Revisions (which the author can choose to ignore)
What next?: Accept after minor essential revisions

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No

Declaration of competing interests:

I declare that I cannot think of any competing interests.