Reviewer's report

Title: A review of randomized controlled trials evaluating the effectiveness of handheld computers for data collection.

Version: 1 Date: 19 July 2005

Reviewer: Arthur A Stone

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General
Electronic capture of data in medicine is becoming more popular, so a review of handheld devices used for the collection of self-report data is appropriate. Because the authors chose to limit their review to controlled trials, the total number of articles that met their criteria was only 8, which is a very small number for review purposes. This problem is accentuated by the fact that not all of the articles provided information relevant for some of the questions addressed in the paper, yielding some questions being addressed by only a couple of articles. Nevertheless, there is some useful information here.

My major problem with the review concerns combining of two very different types of data collection accomplished by handheld computers. The first is office based data collection, which is essentially taking a paper questionnaire and shifting it to a handheld device. There are a number of questions that are relevant for this conversion and the FDA is quite interested in those. However, the current report did not go into depth about some of the more pressing problems here such as the ability of patients to review their answers with paper questionnaires versus palmtop where that is not possible. Or issues concerning the translation of 10cm VAS scales to smaller VAS scales on handhelds. This is a much deeper and richer literature than this review indicates (see some papers by Hufford and others on the topic).

The second mode of data collection is real-world end-of-day or several times throughout the day collection of data (aka, Experience Sampling or Ecological Momentary Assessment). These diary methodologies present an entirely different set of challenges and demands for both patients and researchers, and the field has received a considerable amount of attention in the last 10 years. Combining results from the one-shot, in-office data collection schemes with the extensive repeated measurements of the latter techniques is, in my view, problematic, because the demands are so different.

More generally, the topics covered were done so in a cursory manner. I think the authors carefully reviewed the 8 studies they present, but did not adequately review the broader literature where many of these issues have received extensive discussion.

A much more thorough review would be a welcome addition, but the current version does not have the depth necessary to make a significant contribution.

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

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

Discretionary Revisions (which the author can choose to ignore)
Which journal?: Too insignificant to warrant publication in BMC Medical Research Methodology

What next?: Reject because too insignificant for publication in any BMC journal

Quality of written English: Acceptable

Statistical review: No