Reviewer's report

Title: Prospective, randomized evaluation of a personal digital assistant-based research tool in the emergency department

Version: 1 Date: 1 August 2007

Reviewer: Stephen Lapinsky

Reviewer's report:

General
This manuscript describes a small randomized study comparing a PDA research data collection system with a conventional paper system. This study contributes to the literature in the field - few similar studies have been performed, as reviewed by the authors in their discussion. The major criticism of the study is the self assessment of time for data entry, as discussed by the authors. While comparison with a paper system is important, but increasingly data collection is being performed directly onto a laptop. PDA's may (or may not) offer advantages over such systems.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)
None identified

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

1. The term "enrollment" is used throughout the manuscript. I noted with interest that this is the U.S. spelling, "enrolment" is used elsewhere. However, I believe that what the authors are referring to is "research data collection". Enrollment implies entering the patient into the study.

2. Sample sizes were based on detecting a 60 second difference in data entry times (based on ref 5). Surely this would depend on the total data entry time? (ie. 6 minutes versus 60 minutes). No mention is made of baseline times for paper or PDA being assessed.

3. Was the consent obtained (under section "Patient Enrollment") for this PDA/paper study, or for the larger pulmonary embolism study?

4. How were data errors identified? Was this a manual check, single, duplicate?

5. The sentence in Results, "Hence the reported mean total data-gatehring time . ."
does not appear to be very relevant.

6. Ref (4) "Parsonal" should be "Personal"

7. Figure 3 adds nothing to the paper and should be deleted.

Discretionary Revisions (which the author can choose to ignore)

1. Little mention is made of software development, usability testing, piloting and training. Optimization of the software would obviously have a significant impact on the timing of data entry, the major study outcome measure. For example, with more sophisticated software "nonsense" values and missing data could be eliminated.

2. Did any technical malfunctions occur, eg. Hot-Sync problems, battery failure, loss of PDA, etc?

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, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests.