Reviewer's report

**Title:** Computational Challenges and Human Factors Influencing the Design and Use of Clinical Research Participant Eligibility Pre-Screening Tools

**Version:** 1  **Date:** 8 February 2012

**Reviewer:** Vitaly Herasevich

**Reviewer's report:**

In present study authors aim to report multi-modal evaluation of a web-based tool that can be used for pre-screening patients for clinical trial eligibility.

The major limitation of the study is heuristic and usability evaluation based on the results from 4 experts.

Other comments

1. Positive predictive value reported in study is 0.007% in table and abstract. Is it error? Positive predictive value is the proportion of patients with positive test results who are correctly diagnosed. This number means that only 1 patient out of 700000 diagnosed correctly
2. Aim of the study is not spelled out clearly in abstract and main text
3. Abstract: Sentence “A critical early step…” is complex. Better to simplify
4. The manuscript is focusing on the evaluation of design issues, however major part of background section describes problems with clinical trials enrollment and dealing with datamarts. Manuscript is lacking details about similar studies that was done on the heuristic evaluation of screening tools
5. Background. First sentence has 7 references not pertinent to context. Better to move 2-8 after second sentence
6. Method section is essential part of the manuscript placed at the end of draft. It is confused order. Better to have traditional order
7. Results. Diagnostic performance of 4 trials combined to 2 resulted number sets (table 1). Please explain.
9. Small sample size is not addressed in limitation part of the manuscript
10. Figures 5 and 6 can combined focused on particular parts

**Level of interest:** An article whose findings are important to those with closely related research interests
Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests