Reviewer's report

Title: Participation in EHR Based Simulation Improves Recognition of Patient Safety Issues

Version: 5 Date: 13 June 2014

Reviewer: Karen McKelvie

Reviewer's report:

Question posed well-defined. Methods, results and data (including figures) are well described and understandable to the reader. Author discusses limitations of the study and in paper have referred to their previous publications.

1. Discretionary Revision.
   a) Abstract - Objectives- 1st sentence: "EHR are becoming...the clinical enterprise." Word "enterprise" may be better replaced by environment.
   b) Introduction paragraph 2; last sentence: authors mention that in a 24 hour period patients generate 1800 data points. What do they mean by data points? What is their definition?

2. Minor Essential Revisions:
   a) Results - paragraph 3; last sentence: when discussing repeat takers mention that 20 participants had an interval between testing greater than 4 weeks. What was the time scale: i.e. was it between 4 weeks and 4 months. If there was a marked time between initial and retesting was there less improvement or more improvement in participants finding safety errors.
   On same aspect: 5 participants interval of less than 4 weeks: how many retook at 2 weeks? 1 week? 3 weeks? etc. Any variability

Comment: Reading this paper I wondered if reason the participants ability to identify safety issues improved was as a result of being given information on how to access data from the system and teaching them how to use functions of the EHR. Also as mentioned in the discussion, those retested being more familiar with the system and being able to navigate around more competently, as well as, being able to bring up graphs of results would also be able to detect safety issues easier or have a better understanding of how to find these.

Introduction- paragraph 2: the authors highlight unintended consequences associated with EHR may be as a consequence of inadequate training and education. The reason those "retakers" identification of errors improved is surely as a result of training they received?

Discussion - paragraph 2: I wonder if the identification of patient safety issues improved due to increased use of the system in period between tests rather than participation in the simulation as they suggest. The simulation exercise improved use of the system and thus, improved safety issues being identified. It
served the purpose of improving patient safety.

Discussion - paragraph 3: participants "degree of improvement was inversely related to baseline performance". Those who were least unfamiliar/understood the system with training were then able to use more efficiently and effectively and thus, their identification of patient safety issues increased.

Discussion - paragraph 6: wonder whether participants doing the exercise in the ICU area at terminal (adds to realism) but may have been other distractors happening within the area which may prevent the recognition rate of patient safety issues reaching 100%: thus, indicating in the real environment 100% of safety issues may never be achieved. (Other factors also mentioned in Discussion- paragraph 7)

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

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests.