Author's response to reviews

Title: Assessment of the potential impact of a reminder system on the reduction of diagnostic errors: a quasi-experimental study

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Version: 2 Date: 4 December 2005

Author's response to reviews: see over
Dear Editor-

Thank you for your comments from the three referees. We have made extensive changes to the manuscript in response. These are listed below:

REVIEWER #1: MELISSA MARGOLIS
Minor essential revisions:

We have analysed the mean differences in DEO using a two-way mixed model ANOVA. This is detailed in the methods section under ‘Analysis’ on page 14; the results are described on page 17.

Discretionary revisions:

The ISABEL system has been used in practice from 2001. The means by which similar systems can be used in the current environment and in the future are summarised on page 24 and 25.

The role of ISABEL in medical education and for training is detailed on page 25.

REVIEWER #2: ISABELLE COLOMBET
Major compulsory revisions:

1. We have deleted the use of the term ‘simulated field study’
2. We have replaced the title of the article with the word quasi-experimental
3. The main hypotheses underlying the development of the system are mentioned in order to clarify the objective of the study further (page 7).
4. The objective of the current study in the global evaluation plan for the ISABEL system is detailed on page 7; a summary of previous evaluations leading up to this study is mentioned on page 8. The extent to which the interpretation of the results from this study depends on the previous validation of ISABEL is detailed on page
22 under the Discussion section. Details of the measurement study are mentioned under the Methods section as advised (page 13).

5. Further details on the scoring system derived from the measurement study are described on page 13 under the Methods section. However, since the measurement study is a large study by itself, only a summary is provided. The main article published in the Journal of the American Medical Informatics Association (JAMIA) in 2003 is attached as supplementary material for further details for the reviewer.

6. The issue of how subjects’ suggestions in medical slang or less precise terminology is addressed in the study is described on page 13 under the Methods section. In keeping with the reviewer’s suggestion, we have added further detail on how DEO were calculated in the example of the case shown in figure 1 and 2; these are given as figure legends.

7. 24 cases were represented in the 624 case episodes. This is shown in table 1.

8. Additional tests and treatments are quite valuable, and we have provided further details on the numbers and impact of the ISABEL system on these under the Results section (page 19).

Minor essential revisions:

9. The URL is deleted in the current revision. This site is no longer accessible to users.

10. Table 1 summarises all user, case and case episode information. The legend explains the difference between case and case episode.

11. Under the heading of limitations of the study, we mention that there is no evidence based link between reduction in DEO and changes in patient outcome. However, we have examined process changes that might impact on the patient outcome according to a well-established theoretical model of diagnostic errors as published by Schiff et al. We have discussed this in detail on page 27.

12. This has been amended on page 20 (line 19).
Discretionary revisions:

13. We note there is no point 13.
14. We have added percents and a column for total number of cases for table 1.
15. Tables 3&4 have been modified to reflect standard deviation data on the table.

REVIEWER #3: PAT CROSKERRY

Major compulsory revisions:

1. We recognise the effect CDRs have on diagnostic errors; however, computerised prompting strategies may have an impact on some or even many of these cognitive biases. We have discussed this further on page 25 under the Discussion section. We have also added the reference from Croskerry P from the Annals of Emergency Medicine 2003 (ref #63).
2. The effect of reflection and rethinking on our study model is discussed in greater detail on page 25 and 26 under the Discussion section. We have also highlighted the fact that time spent on ISABEL consultation in real life can only be extrapolated from this study; this is likely to be in the order of 1 min.

Minor essential revisions:

1. We have highlighted on page 12 & 13 (Methods section) that the definition of DEO in our study was not simply an omission from the differential, but a significant omission in clinical terms. In this sense, DEO is defined in our study to be a process error.
2. The abbreviation QMR has been expanded on page 8.
3. We have replaced the term ‘clinical negligence’ with ‘clinically inadequate’ on page 12.
4. We have restructured the sentence under question (page 25)