Reviewer’s report

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

Version: 1 Date: 15 November 2005

Reviewer: Pat Croskerry

Reviewer’s report:

General:
Overall, this is a useful study and has potential benefit for patient safety in general and specifically for the continuing work on CDSS development.

---

Major Compulsory Revisions: two major points need to be addressed.
1. Prompting strategies such as that described here appear to provide a useful adjunct to clinical decision making and should ultimately prove beneficial. However, the majority of diagnostic errors occur through cognitive biases. (Graber, Franklin, and Gordon: Diagnostic error in internal medicine. Arch Intern Med. 2005 Jul 11;165(13):1493-9). These have been termed CDRs (cognitive dispositions to respond), and a number of them probably arise through prevailing ambient factors that may be situationally unique, physician specific, or patient specific. While the authors acknowledge this point in the discussion, referring to ‘missed data or red herrings’, they don’t sufficiently explore this. In the real clinical world, where uncertainty is greatest (emergency medicine, family medicine) clinicians appear to be extraordinarily vulnerable to CDRs. The ‘promting strategy’ that ISABEL uses here does not have the capacity to deal with the potential impact of these CDRs (although future iterations of it might). The CDR problem appears core to diagnostic error (Croskerry P. Diagnostic failure: A cognitive and affective approach. In Advances in Patient Safety: From Research to Implementation. AHRQ Publication Nos. 050021. 2005;Vol 2 pp 241-254. Agency for Health Care Research and Quality, Rockville, MD.) and should be addressed in this discussion. The issue is also addressed in an earlier paper that appears relevant to the discussion but is not cited here (Croskerry P. Cognitive forcing strategies in clinical decision making. Annals Emerg Med. 2003; 41:110-120).

2. The second issue involves the actual process of using ISABEL: what would happen if a control group of physicians were simply directed to take an additional 7 minutes to reflect on their first assessment, and then add/delete diagnoses in the second iteration? There is a literature that suggests that such a reflective process may improve the quality of clinical decision making (see (e.g.): Mamede and Schmidt The structure of reflective practice in medicine. Med Educ 2004; 38: 1302-8), especially for complex cases, and that incorporating some sort of metacognitive step might well improve things overall. Again, this is important and relevant and should be discussed.

Parenthetically, the time involved to use this adjuntive strategy for decision making is not insignificant -7 minutes is a fairly long time in frontline medicine.
---

Minor Essential Revisions:
1. Although it will be well understood what the authors mean by a DEO, I'm not sure the failure to consider a diagnosis on the differential could actually be labelled a ‘diagnostic error of omission’. Also, the label 'error' is now considered by some to be a folk term, a little archaic and inappropriate.
2. All acronyms should be defined at their first usage in the text. For example, QMR appears unannounced on page 7.
3. The term ‘clinical negligence’ on p13 should be softened. Given the gold standard was the opinion of two pediatric consultants, it probably doesn’t constitute negligence in the generally understood usage (and certainly not in the legal sense)- it should be changed to something like 'clinically inappropriate/insufficient/inadequate/questionable'
4. Although the overall quality of writing is high throughout the paper, the sentence that begins 'Since it remains...' on page 24 is cumbersome and probably should be fragmented.

What next?: Accept after minor essential revisions

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

Statistical review: Yes

Declaration of competing interests:
I declare that I have no competing interests