Reviewer’s report

Title: Medication errors with electronic prescribing (EP): Two views of the same picture

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Reviewer: Christine Jorm

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Christine Jorm - Reviewer's report: Medication errors with electronic prescribing (EP): Two views of the same picture

1. Is the question posed by the authors well defined? Yes
2. Are the methods appropriate and well described? – More description of the system is needed, see below
3. Are the data sound? Yes
4. Does the manuscript adhere to the relevant standards for reporting and data deposition? Yes
5. Are the discussion and conclusions well balanced and adequately supported by the data? Some suggestions for improvement below
6. Are limitations of the work clearly stated? See Discretionary 7
7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished? Yes
8. Do the title and abstract accurately convey what has been found? See Minor 4 below
9. Is the writing acceptable? Yes

Minor essential revisions

1. The value of this paper needs to be enhanced by a more comprehensive description of the EP that was studied. This may perhaps be the subject of another paper by the team that they can reference. There is some confusion in my mind around whether the authors are assessing the functionality of the described EP, which obviously could be improved, or the occurrence of ‘errors’ eg this is unclear with regard to the discussion around flexibly dosed drugs. The authors correctly assert that “The general view is that EP will reduce errors but new technology can also introduce new types of error”, however the errors they list are surprising and thus clarification of more EP system details becomes of relevance. For instance:

• Clinically significant drug interactions being allowed including a NSAID to an asthmatic patient. A screen for known drug-drug interactions is usually a major feature and benefit of EP systems.
• Drug dose duplication – similarly, usually EP checks are in place
• What does it mean for as-required medications to “fall off the screen”?
• What happened when medications had been given but not prescribed?
• I understood the failure to put prescribe all medications on admission, but wondered how an electronic system allowed an incomplete discharge prescription.
2. The authors need to explain why they didn’t review the charts of the patients who were interviewed. That would have been a valuable exercise.
3. The manpower resource estimates need to include the analysis time for the transcribed interviews. While the research resources comparison is a great idea, I am not sure that the description given of the particular logistical difficulties are of wider value. The researcher could have been a full time staff member and funds made available to put them up in a hotel and better access to archived data arranged by the institution. This section could be omitted.
4. The record review errors described are errors of omission. It would be good to describe them that way and to make more of this difference. The study aimed to compare two different types of review and it seems that these errors of omission were detected by the detailed pharmacist record review alone. By definition, they would not be reported by the clinical staff – they hadn’t noticed! Therefore I am not sure that the summary statement that “Interviews identified all types of error identified in the notes review” can be correct. I am sure this can be clarified.

Discretionary Revisions
1. It would be good to know the rationale for the number of patients and staff interviewed and records reviewed.
2. The use of the word prospective with regard to error counting (p4) is somewhat misleading. Only observational study approaches prospective.
3. It should be noted also that record review (unlike interview) can be used to produce a frequency of error (accepting that some error types are not detectable this way).
4. The errors of omission described in the record review do make the reader want to know what electronic result systems were also present in the hospital (and its alerts and any electronic sign off system).
5. I wondered if more comment on serious or potentially serious errors should be made – the brief mention of paediatrics and anti-coagulants aroused interest. By comparison, the failure to set a limit on daily panadol tablets or treat hyperlipidaemia would not usually result in serious consequences.
6. This paper might benefit from reference to failure-modes and effect analysis (or some other error theory) – if as the authors assert (although I am not sure because of the issue of errors of omission), interview gives a comprehensive list of failure types – then this is a valuable finding and could perhaps emphasised.
7. This is a small study and while numbers are certainly not everything, it would have been good to have specifically discussed this in the paper. It is not necessarily a limitation – maybe this represents a parsimonious approach to assessing functionality or looking for failure modes.

**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