Author's response to reviews

Title: Understanding the Management of Electronic Test Result Notifications in the Outpatient Setting

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Author's response to reviews: see over
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Jigisha Patel MRCP, PhD, Series Editor
BMC Medical Informatics and Decision Making

Dear Dr. Patel,

My colleagues and I are pleased to submit our manuscript entitled, “Improving Test Result Follow-up in Electronic Health Records: Thinking Beyond Technology”. The current manuscript is a qualitative piece examining barriers, facilitators, and suggestions for improving timely management and follow-up of abnormal test result notifications in an integrated health care system using an electronic health record. We found the volume of alert notifications received was perceived as too high, and a significant percentage of the notifications received were perceived as unnecessary. Moreover, providers also often lacked the proficiency required to effectively manage their alerts in the electronic medical record. Given the current health care reform legislation and the emphasis on meaningful use of electronic medical records, we are confident you will agree that our manuscript will be of keen interest to BMC Medical Informatics and Decision Making readers.

This manuscript is part of a larger study evaluating the systems and processes affecting outcomes of electronic communication in the computerized patient record system. The research uses a mixed methods approach; the qualitative methods are detailed in a study protocol published in Implementation Science (doi:10.1186/1748-5908-4-62). The current manuscript is a follow-on to a paper entitled, “Provider Management Strategies of Abnormal Test Result Alerts: A Cognitive Task Analysis” which was published in the Journal of the America Medical Informatics Association (doi:10.1197/jamia.M3200). While the JAMIA paper addresses specific EMR interface improvements more appropriate for an informatics audience, the current manuscript addresses the barriers and facilitators to alert notification management from the perspective of the clinician, and provides suggestions for improvement that clinicians can readily adopt into their daily practice, as well as ideas for informaticians to incorporate in future HER designs.

This article is not under consideration for publication elsewhere. An earlier version of this paper was presented in abstract form only at the 2009 AcademyHealth Annual Research Meeting. All authors listed have contributed sufficiently to the project to be included as authors, and all those who are qualified to be authors are listed in the author byline; I will serve as the corresponding author for this manuscript (my contact information is on the letterhead). To the best of our knowledge, there are no conflicts of interest to disclose.

The following could be considered as potential peer-reviewers:

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Thank you for your consideration of this manuscript. We look forward to working with you to see our work published in the *Journal of General Internal Medicine*.

Best regards,

Sylvia J. Hysong, Ph.D.

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Responses to Reviewers

Reviewer 1:
1. The title is not descriptive of the study. The study is about identifying barriers to and solutions for electronic alerts to clinicians in the outpatient setting. The title should better reflect the content of the study.

   Based on your and reviewer 2’s comment (#4), we have changed the title of the paper to Understanding the Management of Electronic Test Result Notifications in the Outpatient Setting, something that is more reflective of the content, and that doesn’t over-promise and under-deliver.

Reviewer 2:
2. In the methods they write focus groups were held with personnel from backgrounds (primary care, radiology, etc.), and then they talk about PCPs. I interpreted PCPs as primary care providers, but my question is who they are. Are they only primary care physicians and nurses, or are radiology, IT and lab personnel also seen as PCPs. I appreciate clarification.

   We have added text on page 6 clarifying that PCPs refers specifically to primary care providers, which consists of physicians, physician assistants, and nurse practitioners.

3. On page 11 the authors refer to the “high volume” of alerts. In the combination with the term human factors high volume can at first glance be construed as a high sound level. It becomes later clear that high volume is about large numbers (of alerts). In order to avoid such confusion I suggest to make clear that is about a high number of alerts sitting in box that makes the providers nervous.

   We have added text at the bottom of page 8, where alert “volume” was first discussed, defining this phenomenon as “the number of alerts received by providers.” We have also replaced “high volume” on page 11 with “large number” to clarify as the reviewer suggests.

4. The title "... thinking beyond technology" promises too much. There is a suggestion how the interface might be improved, but nothing about the non-IT related problems. Do the authors harbor any ideas on that?

   We thank the reviewer for this opportunity to clarify. Although our results focused primarily on technological issues, the issue of large numbers of alerts is not a technological barrier itself; rather, it is a workload barrier that can be further addressed by many non-technological solutions. We have now also added another non-technological solution on p. 14 that was not originally discussed in the manuscript, which is simply to decide what should constitute an “alertable” event. Not only were providers receiving too many alerts, they were receiving many unnecessary types of alerts. So carefully thinking at the system level (to reflect what the institution actually
values) about which types of events truly require notification and which do not, could be an important first step.

Nonetheless, we agree that the title could use some editing. Based on your and reviewer 1’s comment, we have changed the title of the paper to “Understanding the Management of Electronic Test Result Notifications in the Outpatient Setting”, something that is more reflective of the content, and that doesn’t over-promise and under-deliver.

5. Lastly there are typing errors (I suspect that their EndNote database contains a few errors). My general advise is to check the references, including the use of abbreviations for journals. The authors are not consistent across the board.

The corrections provided by the reviewer have been made in the manuscript; references have been checked for consistency (for instance, we found two instances where journal names were not listed consistently; these have been fixed).

Editorial Requests:

6. Ethics - Experimental research that is reported in the manuscript must have been performed with the approval of an appropriate ethics committee. Research carried out on humans must be in compliance with the Helsinki Declaration (http://www.wma.net/en/30publications/10policies/b3/index.html), and any experimental research on animals must follow internationally recognized guidelines. A statement to this effect must appear in the Methods section of the manuscript, including the name of the body which gave approval, with a reference number where appropriate.

A human subjects subsection with the requested information has been added to page 5 in the methods section.

7. Please ensure your manuscript adheres to the guidelines laid out in our checklist for reporting qualitative research, found here: http://www.biomedcentral.com/info/ifora/rats.

We have reviewed the manuscript against the checklist for reporting qualitative research, have made edits where necessary, and are confident that the manuscript adheres to the RATS guidelines.

8. Please also ensure that your revised manuscript conforms to the journal style (http://www.biomedcentral.com/info/ifora/medicine_journals). It is important that your files are correctly formatted.

Per the instructions on the website, we have downloaded the BMC manuscript template and conformed our manuscript to the format prescribed therein.