**Reviewer’s report**

**Title:** Decision Support During Electronic Prescription to Stem Antibiotic Overuse For Acute Respiratory Infections: A Long-Term, Quasi-Experimental Study

**Version:** 1  **Date:** 08 Feb 2017

**Reviewer:** Samantha Rowbotham

**Reviewer's report:**

This article builds on a previous study examining the impact of a clinical decision support system on antibiotic prescribing within a Veterans Affairs system. This article examines the impact of discontinuing the CDSS on concordant prescribing for one class of antibiotics, comparing this to prescribing of antibiotics for which the CDSS was continued, as well as to the prescription of antibiotics for which the CDSS was not in place. The findings provide good support for the efficacy of the CDSS in reducing discordant antibiotic prescribing, with effects maintained over the period of time that the CDSS is in place (but not sustained following withdrawal of CDSS). I believe that this paper is well designed, and despite being quasi experimental employs adequate controls, and makes an important contribution to the literature.

I would suggest the following minor amendments to strengthen the paper:

1. **Abstract:**
   a. Within the abstract it is not clear what 'pre-withdrawal' and 'post-withdrawal' refer to (this does not become clear until the introduction) - it would be useful to clarify this

2. **Methods**
   a. Make it clear which statistical inference tests you have used to compare pre- and post-withdrawal

3. **Results**
   a. Page 9-10, line 181-184: The information on amount of concordant/discordant prescribing is repeated in the following section on CDSS withdrawal. I would recommend removing the discussion of concordance following withdrawal from lines 181-184 to avoid this redundancy.
b. Page 10, lines 190-197: Recommend being more consistent in reporting of p-values report to 3 d.p. and drop the leading 0 (as the total cannot exceed 1). So for example on line 190 it would be p=.002 and on line 192 it would be p=.008. You should report exact p-value for all results regardless of whether sig or non-sig.

c. Throughout results you make repeated references to the same tables (e.g. 'Table 2' after every sentence reporting a result. If one table contains all the results for a section just refer to it once near the start of the section.

d. Page 10, line 203: change 'azithromycin, average usage' to 'average use of azithromycin'

e. Page 11, line 215: 'Observed' used twice in same sentence - remove one of these

4. Discussion

a. Page 11, lines 221-226. The second and third points you state as demonstrating effectiveness of CDSS are actually all part of one point. The second point (about lack of significant difference for azithromycin between the two time points) only makes sense when considered in relation to third point (the fact that there was a difference for the antibiotic that for which the system was withdrawn). I would amend to say that the effectiveness was demonstrated in 'two' ways and rephrase lines 222-223 to read something like: 'Second, while there was no significant difference...between the pre- and post withdrawal systems, concordance decreased when CDSS was withdrawn...'

5. Other points

a. Just a query - is 'discordant' prescribing the best word or does 'non-concordant' work better?

b. Table 1: Be consistent in use of d.p. - Age range for first two columns is to 1 d.p. (20.0-93.0; 23.0-90.0) but 0 d.p. for the third (20-93)

c. Table 3 appears to contain entirely redundant information - with all data in this table already reported in the text and or Table 2. I would remove table 3 or combine with Table 2 to reduce redundancy. You should also provide exact p-values in the tables.

References:

a. Check consistency of referencing format, particularly journal names (e.g. for refs 6, 15, 17, 18, 22, 28)
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

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Please indicate the quality of language in the manuscript:

Acceptable

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