Reviewer’s report

Title: Effect of enhancing audit and feedback on uptake of childhood pneumonia treatment policy in hospitals that are part of a clinical network: a cluster randomized trial

Version: 0 Date: 03 Jul 2018

Reviewer: Arianna Means

Reviewer’s report:

Abstract

1. The term "rate" is used frequently to describe associations that do not appear to be in fact rates.

Introduction

1. The introduction could use 1-2 sentences explaining what audit and feedback is, and what evidence already surrounds audit and feedback as an implementation strategy, beyond mention of the systematic review calling for more research in this area.

2. Might do with some light editing throughout for clarity. For example, "The WHO responding to this new evidence made the first major revisions to the childhood pneumonia guidelines for many years in 2013." Should likely be "The WHO responded to this new evidence in 2013 by making the first major revisions to childhood pneumonia guidelines in many years."

Methods

1. Line 56: it would be helpful to clarify what you mean by "had a diagnosis of pneumonia" given your thorough overview of different pneumonia definitions in the introduction (i.e. provider clinical diagnosis, irregardless of signs/symptoms).

2. You might consider adding the "specific pneumonia feedback sheet" and the "comprehensive performance report" templates into the Appendix, so readers can understand what the mechanisms of action for the enhanced intervention might be. Or, at least provide an example of that the "action plans" provided might have entailed.

3. Page 11, line 9: Should briefly mention what new guidelines say in terms of when it is appropriate to switch to IV antibiotics for children admitted with non-severe pneumonia
4. Data analysis: Why not conduct analyses separately for correct classification and correct treatment? This seems important for understanding how the intervention influences these very different clinical behaviors.

Results

1. Page 15, line 21: It would be helpful to explain what you mean when you talk about the proportion of children that were referrals, or presented with wheeze. These might seem arbitrary to people without clinical knowledge of pneumonia.

2. Primary outcome: There are several denominators used (1087, 1212, 1030, 1068). Please explain why different denominators are used for assessing % of correct cases classified and % of cases correctly classified and treated, or specify it is of complete cases.

3. Primary outcome: Although the reader could back calculate from the numbers you provide, please include the % of correctly classified cases that are thereafter correctly treated (i.e. denominators of 615 and 742).

4. Page 16, line 19: Looking at overall trends, performance primarily declined in the standard feedback arm during the last 3 months of the study. I would not imply that performance "steadily declined" in the standard feedback arm throughout the paper, because Figure 2 indicates that there might have been something else going on during month 7 in the control group. Was the dramatic decrease observed at this time attributable to certain facilities specifically? If so, you could consider a line chart by facility (with color coding by arm) to make this point.

5. Secondary outcome, Line 59: In the methods section, it is implied that this variable (switching from oral to injectable abx) might be a proxy for provider confidence in the new guidelines, while in the discussion it states that this variable is proxy for treatment failure/outcomes.

Discussion

1. Line 55: This is a great explanation for why the trends in control arms might have been observed. Do you know if either of the two staff rotations occurred during month 7? If so, did they occur across both intervention and control arms? This might be worth mentioning.

2. Page 19, line 41-47: You discuss differences in trends between classification and treatment as distinct outcome variables (not a combined variable), which was not presented in the results.

3. What are the overall implications of your study: would you suggest that enhanced audit and feedback be implemented in conjunction with the roll out of new guidelines? In your
final sentence you say you recommend "evidence based strategies", does this now include enhanced audit and feedback, in your opinion?

Table 2

1. It is unclear what "Paediatric admission record used during admission" means. Can you clarify what this variable is or rephrase?

Table 3

1. Combined outcome of correct classification and treatment. Do you have the ORs for each outcome separately? This would likely be interesting to see if the intervention has an effect on one component of the outcome (diagnosis vs. treatment vs. both), as compared to the other. This may be important for teasing apart the effectiveness of the intervention, as stated above.

Figure 2

1. Same as above, it could be impactful to include percent of patients correctly classified and treated separately, perhaps within a stacked column bar chart.

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