Reviewer’s report

Title: Management of fever in Australian children: a population-based sample survey

Version: 0 Date: 10 Nov 2018

Reviewer: R. Oostenbrink

Reviewer's report:

The authors perform a nice study on adherence of guidelines in treating febrile children. The topic is relevant and important. The study has been well developed. The limitations of using retrospective routine data are well discussed.

I did not detect substantial flaws in the study. My main concern is how the authors draw some conclusions from their observations. I think this may be more nuanced.

As the authors use routine data, there are missing data. This may have caused several problems, as partly addressed by the authors in the discussion, e.g. that choices for diagnostic tests are better argued by clinical sx description and presence of positive signs will be better documented than its absence. However, the problem is that some indicators do not judge on positive/negative, but if the symptom has been assessed, i.e. child being checked for a rash. So what did the authors do if missing info? In the methods an explanation how to score the indicator if missing data should be included to understand it effects. In that sense I do not understand the column no of children in table 2. For items 'child being assessed for fotophobia' etc, the denominator should be 550 (i.e. all), and the adherence tells us how many children indeed scored positive/neg on it vs missing, e.g FEV 14-FEV20?? Did the authors consider sensitivity analyses on their assumptions how to score the indicators when missing data? This would be helpful.

The authors relate the adherence to indicators to quality of care. However, for fever evidence is mostly available for children 3-36mo, although most guidelines extrapolate their advices (based on this literature) to older ages. So adherence differences may merely reflect doubt on advices of guidelines rather than delivering lower quality of care? This aspect should be discussed. Next, if some advices are not being followed, what does this tell us? It might be important to consider this during new guideline development/update guidelines. E.g. guidelines for different settings should be different?

Do the authors have information on quality of care (i.e. revisits for missed diagnosis) in their observations?

I have some difficulty to apply the guidelines to the in hospital population sampling. Most guidelines are developed for ED visits fever (or literature underlying the guideline is derived from it), so what to the in hospital patients (mostly comorbid children, hospitalised for other reasons? Information on this population is needed.
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.

Unable to assess

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

No

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

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?
6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

nothing to decla

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal