Reviewer's report

Title: The drivers and human health impacts of China's lead-acid battery industry

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Reviewer's report:

In this paper, the authors review the current state of lead-acid battery production and use in China. The abstract states that this is one of the first papers to combine evidence on China’s growing LAB industry with concurrent increased rates of lead poisoning.

- The review paper lacks integration of published data to demonstrate the theme of the discussion. They used a lot of non-data based publication sources as citations.
- Authors need to emphasize current gaps in the literature and what this review paper adds on.
- After reading this review paper, what does audience learn or know? What is the key message? Does this help further research or policy making?

There are some other organization issues that can strengthen the readability and implications of this paper.

- Namely, the authors need to indicate much earlier in the paper the contribution of the manuscript to the literature. The abstract indicates this is one of the first papers to synthesize evidence on LAB and, in doing so, they are contributing to the discussion about possible explanations for the rising levels of BLL in Chinese populations. Although the details of this are explicated later in the paper, it would be important to establish these basic points at the outset so as to more clearly convey the novelty of this paper. Otherwise, it is unclear why readers should be interested in this research and what it offers beyond existing literature.

- For example, before describing the health and behavior impacts, the paper could benefit from one or two paragraphs to introduce the concepts that will be discussed further in the paper, i.e., that BLLs in Chinese children are an established problem, particularly in comparison to Western countries, and that determining source of exposure in Chinese populations has important public health implications for prevention and risk reduction. As it stands now, the contribution of the paper is a bit lost without reading the abstract.

- Further, the text begins by describing why children are a vulnerable population, and then shifts immediately to discussing in the next section sources specific to China. Again, some of the text in this section, such as the first paragraph on p.5, could be used as part of a general introduction to immediately signal to the reader why this paper will focus on China in particular (section 1. already nicely explains why the focus will be on children) and why the implications for this
summary are serious and wide-reaching.

- Given the amount of text spent on describing the problem, the implications section is relatively weak. The paper could benefit from somewhat lengthier discussion of public health efforts to reduce Pb exposure and, possibly, policy efforts that could help curtail LAB production. If this section could be enhanced even slightly, it would be a bit more of a balanced discussion, rather than focusing so heavily on the problem and so little on possible solution/responses.

- Although the title of this paper explicitly focuses on “battery factories related to lead”, authors may consider including a brief discussion on other potential sources of lead exposure to provide a complete picture of lead exposure in China. Or at least give more published statistics indicating what percentage of lead exposure is due to battery factors.

Overall, this is a good paper that appears to provide a needed synthesis on the LAB industry. Clearly, lead exposure is a concern and the authors do a thorough job of depicting the degree to which this is a problem in China specifically. By providing a brief introduction to better clarify for readers the purpose and novelty of this paper, and by providing a slightly lengthier discussion of possible response efforts, this paper would be greatly strengthened.

Therefore, I recommend MAJOR REVISION