

Reviewer's report

Title: Characterization of exposures to cleaning products used for common cleaning tasks in hospitals -a pilot study

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Reviewer: Jan-Paul Zock

Reviewer's report:

This paper combines an extensive review of hazardous chemicals from cleaning products used in hospitals with a pilot study to assess occupational inhalation and dermal exposures qualitatively and semi-quantitatively, respectively. Authors conclude that common cleaning tasks in hospitals involve relevant inhalation and dermal exposure to a variety of irritant and/or sensitising chemical agents to the users. They recommend more detailed exposure assessment in future studies.

Major Compulsory Revisions

1. The paper contains many valuable data but is very long (perhaps too long) and is a mixture of a comprehensive review and some pilot studies. Authors should try to reduce the manuscript.

- Lots of information is spread over the introduction, results and discussion sections.

- Results, first part (hazardous ingredients...) is an extensive review of a number of active ingredients. Maybe this information could be summarised in Table 3.

- The presentation of the DREAM assessment (2 tables and 2 figures!) is out of proportion given the limited attention in the text.

Minor Essential Revisions

2. Introduction, page 4. In 2007 two papers were published on asthma in healthcare workers (1 from the US, 1 from Europe), both identifying cleaning agents as risk factors. Authors may wish to quote these papers as they seem relevant for the topic under study.

3. Introduction, page 7 second par. When reviewing the potential health effects of disinfectants, it could be helpful to identify irritant and sensitizing properties (instead of stating "toxic" properties only).

Discretionary Revisions

4. I am not sure whether it is appropriate to identify brand names (cleaning product manufacturers) as done here.

5. Results, page 18 first group. Floor cleaning in hospitals is often done with

bleach-containing products (but apparently not in the evaluated hospitals in Massachusetts!). Although hypochlorite is not volatile, it is highly reactive and is like to release secondary volatile exposures such as chloramines.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.