

Author's response to reviews

Title: Reducing Ultraviolet Radiation Exposure Among Outdoor Workers: State of the Evidence and Recommendations

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Author's response to reviews: see over

RE: Ms. 7412111431324070

Reducing Ultraviolet Radiation Exposure Among Outdoor Workers: State of the Evidence and Recommendations

Response to Reviewer Comments

REVIEWER ACG Comments:

General

This is a well-researched review of an important field in skin cancer prevention. The study could be strongly improved with more interpretation of findings and a more proactive attempt to ‘kick-start’ new research in the field.

- 1) Page 2 – this is an issue for the editors and the authors – it appears that 1/3 of the manuscript is devoted to the Community Preventive Services Guide – has not this review already been published? Is there more new valuable information that could be provided instead?

Response: *Actually, very limited information from the Community Guide review of skin cancer prevention programs in outdoor occupational settings was published in the previous articles (Saraiya et al. 2003; Saraiya et al. 2004). In addition, the authors believe that more detailed coverage of that body of research will be useful to scientists in the environmental/occupational health fields. We provided these two articles to the Editor with our initial submission to allow the Editor to evaluate the extent of overlap: in the 2003 article, there were only 136 words in a table about the outdoor worker studies review, and in the 2004 article, 774 words were included on this topic, with no detailed reports on the studies in appendix tables. Thus, most of the information in this article is new (unpublished) and the information on methodology will be new to many readers. In addition, we have now added information to the article about two new, important intervention studies published since the Community Guide review was completed.*

- 2) While the authors cannot fully describe sun exposures in every specific workplace, they should briefly describe different work scenarios and how exposures might occur or changes in the workplace can be made. They have reviewed postal workers, construction workers, ski patrols, etc. However if one is considering a comprehensive approach to workplace safety, other issues should be considered: these include seasonal outdoor workers (high risk because of intermittent exposure and little organizing capacity), workers in unions vs. non-unions, workers in Federal agencies, self-employed (small farms) vs. employee-driven workplaces.

Response: *We have now raised these issues in the Conclusion.*

Major Compulsory Revisions

- 1) Again, the editors and authors should agree on the best strategy for summarizing the evidence-based review previously written. – a) keep intact; b) delete altogether; or c) discard the methodology (refer to the earlier study) and go right to the brief results of their review? (preference)

Response: *See response to comment #1 in “General” issues above.*

- 2) This reviewer would argue that responses to the following questions would be more important than fully re-reviewing a previously written report. Useful new, brief paragraphs should summarize:
- a) Based on what was learned from the evidence review which lists almost all studies as fair, what can be done to improve the design and evaluation of future studies?
Response: *Recommendations have been added under the section on “Interpreting conclusions from the evidence review and important research and practice considerations.”*
- b) What do the authors consider to be the key parts of an ideal sun protection strategy at a large outdoor workplace?
Response: *We agree that this would be an interesting topic for an article, but have limited our recommendations to areas that appear to emerge from the available epidemiologic, descriptive, and intervention research reviewed in the paper. There has not been systematic analyses of the effects of different program components on employees. As this reviewer pointed out in comment #2 (General; above), there are so many important features of outdoor occupations and work settings that an outline of the ‘ideal’ sun protection strategy would require more than a brief paragraph.*
- c) For occupational health and cancer prevention experts, the authors should provide guidance as to the next steps needed to provide hats, shirts, and sunscreen to at least outdoor unionized workers for starters, should this include state and federal legislation? Union-management contract language and enforcement?
Response: *In response to this reviewer’s last “Minor Essential Revision” (below), we have included reference to available resources on these topics. For the same reasons noted in “b)” above, we feel that a brief paragraph would not adequately answer these questions. We agree that this is both an interesting and important topic for a separate article.*

Minor Essential Revisions

- 1) Page 1 – All of the numbers in paragraph 1 should be updated to reflect numbers from 2007.
Response: *These statistics have been updated using the most recent statistics available.*
- 2) Page 2 – While the authors correctly describe the link between outdoor work and NMSC, they do not discuss studies that suggest a possible protective effect of outdoor work and melanoma.
Response: *We have added some literature on this point but we hesitate to conclude that outdoor work is protective.*
- 3) Page 3 – There are a couple of points that seem self-evident.—Employees who predominantly work outdoors receive much more sun exposure than other who work only part of their time outside. – This sentence and the first sentence in this paragraph can be deleted.
Response: *These changes have been made as suggested.*

- 4) With a very shifting workforce, it is possible that outdoor workers are no longer spending many years in their occupations – this should be further confirmed with other work studies and ones done since 1995.

Response: *We have added a citation for a study published in 2003 which included many workers with more than 10 years of outdoor work and the associated occupational exposure to UV radiation (Vishvakarman & Wong 2003). We were unable to find data reporting on workforce trends that compare the length of time spent in outdoor occupations at present compared to past decades.*

- 5) Page 7 – What are some of the differences in the workplace and environment for transportation workers compared with construction workers.—Why are the sun protection rates so much higher? Was there any speculation on this in the study that is cited?

Response: *The authors of the study that found higher rates of sun protection among transportation workers compared to construction workers (Stepanski and Mayer 1998) speculated that the between-group differences were influenced by required clothing policies enforced by the respective companies. For example, the transportation workers were required to wear long pants and their observed leg protection was 100%. We have added text to clarify this issue.*

- 6) Page 7 – The authors should clarify whether workers in Canada are wearing clothes intentionally related to improving sun protection or is this part of their regular work garb?

Response: *The publication did not provide information on this question, but rather simply stated that respondents were asked about the frequency of the behaviors. The article reported on a sub-set of 14% of respondents to a national survey of sun exposure and protection who answered that they worked outdoors. This as a limitation of the research – we cannot provide this information as it was not in the published article.*

- 7) Page 9 – While it may be that skin cancer patients are more likely to be using sun protection, it is also possible that these are older (vs. younger) workers more predisposed to using sun protection.

Response: *A comment recognizing this possible explanation has been added.*

- 8) Page 10 – The authors make an excellent point that individual employees may be near powerless. This would be an important place for the authors to point out the need for employer responsibility in providing sun protection for their workforce.

Response: *We have included a point about this at the end of the relevant paragraph.*

A number of items to be added:

- a) The 2006 Buller studies

Response: *The Buller et al. study published in 2005 (not 2006) was mentioned in the descriptive data and we have now added it to the intervention portion of the paper. This has also resulted in a revision of the ‘work in progress’ section*

b) The 2006 Mayer et al. AJPH study

Response: *The Mayer et al. study published in 2006 has been added to the intervention portion of the paper, and other relevant references from that research group have been added to the descriptive section.*

c) At least three major unions/workplaces have developed sun protection brochures and guidelines – Laborers Health and Safety Fund of North America, US Customs and Border Protection, Department of Agriculture, Forest Service. Also, OSHA has a sun safe checklist for all workers-their website addresses could be included in a small box.

Response: *We have added reference to these guidelines in the Conclusion. The citation refers readers to the National Council on Skin Cancer Prevention's website section on Outdoor Workers; as some of the web addresses change frequently, returned error messages, etc.; and we expect that the National Council will keep its website up-to-date. Because the article is already long, we did not add a 'box' to be shown; interested readers can access the web links.*

REVIEWER JAM Comments:

General

This review paper is thorough, well-written, and well-organized. The comments and conclusions were generally grounded in the evidence.

Major Compulsory Revisions

None

Minor Essential Revisions

1) I thought that some updates should be made, even though this paper is based on an earlier evidence review. This includes updating the cancer morbidity and mortality rates in the Introduction (and other places, if applicable).

Response: *This has been done, and we have also added two new intervention studies that were published since the article was completed.*

2) Also, some recent studies that are relevant that I have been involved in should be added, and there are likely other papers that fall into this category. Mine include two observational studies of outdoor workers' exposure/protection.

a. Salas, R. et al. (2005). J of Occ and Environ Med 47; 1244-1249 (farmworkers)

b. Pichon, L. et al. (2005). Am J Prev Med 28, 374-378 (postal workers)

Response: *These studies have been added to the text and to Table 1. The Pichon paper has been linked with Lewis, Mayer & Slymen 2006 which is another report based on the same data/study.*

3) For intervention studies – the outcomes of the postal worker intervention mentioned using the Oh et al. reference has now been published

a. Mayer, J. et al. (2007). AJPH, 97, 559-565.

Response: *This study has now been added to the text and to Table 2. This has also resulted in a revision of the 'work in progress' section.*

REVIEWER JL Comments:

General

This manuscript reports the studies conducted in the area of sun protection by outdoor workers. Overall, the lengthy paper provides a summary of a small body of literature. The manuscript is divided up into two components, the first summarizes the literature and the second part, presents a summary of the evidence review of skin prevention studies of outdoor workers based on the community preventive service guide.

As with most small bodies of literature, inconsistencies conclude a lack of ability to demonstrate a conclusion based on the evidence is modeled in this manuscript. The second part of the manuscript is a review based on the US community preventive service guide. It demonstrates that it is too early to review this literature. The authors were not able to provide a definitive or even speculative answer on what areas need development and which way forward.

Response: *The newly published articles provide some examples of successful interventions, and they are now included in the review. In addition, we have provided some suggestions for future directions in the section on “Interpreting conclusions from the evidence review” and in the Conclusion.*

A rigorous analysis of the studies/data will be needed some time in the future.

Major Compulsory Revisions

None

Minor Essential Revisions

None