

PEER REVIEW HISTORY

BMJ Paediatrics Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

ARTICLE DETAILS

TITLE (PROVISIONAL)	Educating families about the impacts of wildfire smoke on children's health: Opportunities for health care professionals
AUTHORS	Slavik, Catherine Philipsborn, Rebecca Peters, Ellen

VERSION 1 – REVIEW

REVIEWER	Dr. Simon Lenton
REVIEW RETURNED	26-Jul-2023

GENERAL COMMENTS	<p>This is a brief, well written article intended to inform health professionals about the health impacts of wildfire smoke inhalation in order to improve the health of children. In essence the article suggests mitigating exposure, adapting healthcare plans (protective actions) for those who are more vulnerable and taking a longer term view on improving indoor air quality at home and in schools.</p> <p>It would be helpful to inform health professionals about the various components of wildfire smoke and how they may be toxic (the article rightly focuses predominantly on only particulate matter). The article is intended for high income countries where air quality indices are more readily available along with N 95 respirators and potentially HEPA filters, I was surprised that the use of air conditioners (normally used to reduce temperature) were not recommended as many also filter incoming air.</p> <p>Wildfires are more common in low income countries where AQI's and filtration technologies are not available. Are there any practical low-cost strategies parents might use to protect their children in these environments?</p>
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REVIEWER	Dr. Jonathan Abel Kisii University, Public Health
REVIEW RETURNED	20-Aug-2023

GENERAL COMMENTS	<p>The viewpoint on "Educating families about the impacts of wildfire smoke on children's health: Opportunities for healthcare professionals" is timely.</p> <p>However, I have a few comments/suggestions which may benefit the authors.</p> <p>The authors assume, which I understand, that healthcare professionals are experts to educate families on this important subject. Do you think it would also be a good opportunity to train/educate healthcare professionals first/ or work together with these professionals to develop a standardized module, for educating the affected families?</p>
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	<p>The last sentence on page 4, line 53, seems to be incomplete.</p> <p>There are instances where abbreviations are used, without being fully spelled out at the first instance of use.</p> <p>In the last paragraph, the authors need to justify their proposed strategy (ies), and maybe consider discussing a multi-dimensional educational approach given their proposed strategies.</p>
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REVIEWER	Dr. Malcolm Brodrie Newcastle University, Institute of Celular Medicine
REVIEW RETURNED	21-Aug-2023

GENERAL COMMENTS	<p>I found this Viewpoint article easy to read and well written.</p> <p>It is topical and relevant to a general paediatric healthcare audience.</p> <p>The comments that I would make are:</p> <ul style="list-style-type: none"> - discussion of use of masks, the arguments here are more nuanced and complex in my opinion - these are discussed in detail in the review article that is cited (Holm SM, Miller MD, Balms JR. Health effects of wildfire smoke in children and public health tools: a narrative review. J Expo Sci Environ Epidemiol. 2021;31(1):1-20. doi:10.1038/s41370-020-00267-4) could the pros and cons and evidence be elaborated on? - some information is available, e.g. American Academy of Pediatrics guidance/fact sheet for families: https://www.pehsu.net/_Library/facts/PEHSU_Protecting_Children_from_Wildfire_Smoke_and_Ash_FACT_SHEET.pdf is it useful to also cite this in the article?
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VERSION 1 – AUTHOR RESPONSE

Reviewer: 1

Dr. Simon Lenton

Comments to the Author

This is a brief, well written article intended to inform health professionals about the health impacts of wildfire smoke inhalation in order to improve the health of children. In essence the article suggests mitigating exposure, adapting healthcare plans (protective actions) for those who are more vulnerable and taking a longer term view on improving indoor air quality at home and in schools.

It would be helpful to inform health professionals about the various components of wildfire smoke and how they may be toxic (the article rightly focuses predominantly on only particulate matter).

- We thank the reviewer for their comment. We have added a short description of the components of wildfire smoke to address this gap: “This is problematic because wildfire-smoke PM is more toxic than pollution from other sources (e.g., traffic).[3] Indeed, scientists continue to uncover the full extent of wildfire-smoke toxicity. Besides PM, smoke often contains myriad harmful substances, such as methane, carbon monoxide, nitrogen oxides, trace metals, and carcinogens.4”

The article is intended for high income countries where air quality indices are more readily available along with N 95 respirators and potentially HEPA filters, I was surprised that the use of air conditioners (normally used to reduce temperature) were not recommended as many also filter incoming air.

- We have addressed this comment with the following addition of text: “If traveling by car through smoky areas, windows should remain closed and air conditioning set to recirculation with fresh-air intake closed.”

Wildfires are more common in low income countries where AQI's and filtration technologies are not available. Are there any practical low-cost strategies parents might use to protect their children in these environments?

- We thank the reviewer for raising this important comment. We have added a short description of low-cost solutions to improve access to air quality data such as low-cost sensors (e.g., PurpleAir) and strategies to reduce exposures to wildfire smoke: “Low-cost air sensors like PurpleAir are available and accurate in measuring PM. Thus, their data can serve as useful tools to guide decision-making regarding children’s smoke exposures 2... Other effective low-cost alternatives include box-fan-systems—a box fan with an attached HVAC furnace filter—though their dependence on electricity may limit use in regions with less adequate infrastructure or frequent power outages.”

Reviewer: 2

Dr. Jonathan Abel, Kisii University

Comments to the Author

The viewpoint on "Educating families about the impacts of wildfire smoke on children’s health: Opportunities for healthcare professionals" is timely.

However, I have a few comments/suggestions which may benefit the authors.

The authors assume, which I understand, that healthcare professionals are experts to educate families on this important subject. Do you think it would also be a good opportunity to train/educate healthcare professionals first/ or work together with these professionals to develop a standardized module, for educating the affected families?

- We thank the reviewer for raising this comment. It is true that in some countries, educational initiatives and modules on the impact of climate change on pediatric health care have been launched as a part of the maintenance of certification process for paediatricians. Although a larger discussion about medical education on climate change and children’s health is outside the scope (and word limit) of this piece, we have added a short point to address this: “Any development of guidelines aimed to mitigate children’s risks to health from wildfire smoke will require substantial input and expertise from and partnership amongst healthcare professionals, public health officials, and community service providers. These points further highlight the growing need for professional development and educational training across health professions on the impact of wildfire smoke on paediatric healthcare.”

The last sentence on page 4, line 53, seems to be incomplete.

- We believe this comment may have been in reference to the quote that formed the second part of the sentence, which appeared on the following page.

There are instances where abbreviations are used, without being fully spelled out at the first instance of use.

- We thank the reviewer for bringing this to our attention. We have now introduced the abbreviations for particulate matter (PM), Heating, Ventilation, and Air Conditioning (HVAC), and Minimum Efficiency Reporting Value (MERV) prior to using the abbreviations.

In the last paragraph, the authors need to justify their proposed strategy (ies), and maybe consider discussing a multi-dimensional educational approach given their proposed strategies.

- In response to the reviewer's earlier comment, we added a short discussion about the need for this kind of educational approach: "Any development of guidelines aimed to mitigate children's risks to health from wildfire smoke will require substantial input and expertise from and partnership amongst healthcare professionals, public health officials, and community service providers. These points further highlight the growing need for professional development and educational training across health professions on the impact of wildfire smoke on paediatric healthcare."

Reviewer: 3

Dr. Malcolm Brodlie, Newcastle University, Great North Children's Hospital

Comments to the Author

I found this Viewpoint article easy to read and well written.

It is topical and relevant to a general paediatric healthcare audience.

The comments that I would make are:

- discussion of use of masks, the arguments here are more nuanced and complex in my opinion - these are discussed in detail in the review article that is cited (Holm SM, Miller MD, Balmes JR. Health effects of wildfire smoke in children and public health tools: a narrative review. *J Expo Sci Environ Epidemiol.* 2021;31(1):1-20. doi:10.1038/s41370-020-00267-4) could the pros and cons and evidence be elaborated on?

- We thank the reviewer for raising this comment and agree that this point is nuanced and evidence is still being generated. We have further elaborated on our discussion here and included some further insights from Holm et al.: "Masking is another option, but medical and cloth masks provide limited protection from smoke exposure. Clinicians should guide parents to use well-fitted N95 respirators for older children when they are outside; their use in young children has not been approved in the US and elsewhere.⁷ However, children over 2 who can communicate their comfort level will be better-protected with a well-fitted N95 respirator than other masks. Small adult-sized respirators can provide an 80% decrease in smoke exposure among children if properly fit; parents can be trained on how to do so.² Clinicians can review with parents the age, developmental status, and healthcare needs of children to inform a plan. Healthcare professionals should emphasize that actions benefit children's health, reducing respiratory symptoms like cough and wheeze.²"

- some information is available, e.g. American Academy of Pediatrics guidance/fact sheet for families:https://www.pehsu.net/_Library/facts/PEHSU_Protecting_Children_from_Wildfire_Smoke_and_Ash_FACT_SHEET.pdf is it useful to also cite this in the article?

- We thank the reviewer for this suggestion. We now cite this reference in the piece.

VERSION 2 – REVIEW

REVIEWER	Dr. Malcolm Brodie Newcastle University, Institute of Celular Medicine
REVIEW RETURNED	07-Sep-2023

GENERAL COMMENTS	Thank you for responding to the comments. It is an important Viewpoint article in my opinion.
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REVIEWER	Dr. Jonathan Abel Kisii University, Public Health
REVIEW RETURNED	08-Sep-2023

GENERAL COMMENTS	My comments are sufficiently addressed .
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VERSION 2 – AUTHOR RESPONSE

Not Applicable