

## 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

<b>TITLE (PROVISIONAL)</b>	Barriers and facilitators when seeking healthcare for septic children in Ghana: a single center qualitative study of patient caregivers and emergency department clinicians
<b>AUTHORS</b>	Denny, Vanessa Appiah, John Adabie Nadkarni, Vinay Dassah, Ebenezer Gyimah Mensah, Ebenezer Kwabena Adjei, Timothy Amisah, Justicia Nettey, Gustav Owusu, Larko Woods-Hill, Charlotte Wolfe, Heather James, Ebor Jacob Ruhama Acheampong, Princess

### VERSION 1 - REVIEW

<b>REVIEWER NAME</b>	Teresa Kortz
<b>REVIEWER AFFILIATION</b>	United Kingdom of Great Britain and Northern Ireland
<b>REVIEWER CONFLICT OF INTEREST</b>	No
<b>DATE REVIEW RETURNED</b>	26-Jun-2024

<b>GENERAL COMMENTS</b>	<p>Overall: An excellent and well-written manuscript on an important topic. This qualitative study conducted in an emergency department in Ghana identified barriers and facilitators to sepsis care for children by interviewing caregivers and frontline providers. The authors conducted a thematic analysis and identified three major domains: barriers to seeking healthcare, facilitators to accessing care, and strategies for enhancing access to healthcare.</p> <p>I note that the authors have responded to a prior review thoroughly and the result is a strong manuscript. I have a few, mostly minor comments below.</p> <p>Abstract Minor</p> <ul style="list-style-type: none"><li>• Page 2, line 50-52. Suggest adding “sepsis” to the first line for clarity: “Delays in time-critical interventions and access to hospital interventions worsens sepsis outcomes in LMIC.” Consider rewording the second phrase for clarity; morbidity and mortality are not presenting to the hospital. Consider: “Morbidity and mortality in children with sepsis</li></ul>
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	<p>presenting to Ghanaian hospitals high.”</p> <p><b>Introduction</b></p> <p><b>Major</b></p> <ul style="list-style-type: none"> <li>• Page 3, lines 33-37. The second aim regarding sepsis protocol implementation does not seem to be addressed in the results section or in the discussion. The major domains identified relate to health-seeking and access to care. In review of the interview guide for providers, there are no questions specific to a sepsis protocol or protocol implementation. Please either include the data for the second aim, remove or reword it.</li> </ul> <p><b>Minor</b></p> <ul style="list-style-type: none"> <li>• Page 3 line 24. Suggest making the statement “availability of transportation” for clarity.</li> </ul> <p><b>Methods</b></p> <p><b>Minor</b></p> <ul style="list-style-type: none"> <li>• Page 4, line 34. Please include a citation (Goldstein) for sepsis definition using SIRS criteria.</li> </ul> <p><b>Results</b></p> <p><b>Major</b></p> <ul style="list-style-type: none"> <li>• Figure 1, The Consolidated Framework for Implementation Research. Were any Inner or Outer setting facilitators identified? Consider including provider and caregiver knowledge in addition to education/training in the Framework. From the results and the included quotes, resource availability, staffing, and information management were also identified as barriers, but did not appear in the Framework. Please include these for a more comprehensive Framework.</li> </ul> <p><b>Discussion</b></p> <p><b>Major</b></p> <ul style="list-style-type: none"> <li>• Page 12-13, limitations section. Was anything done to mitigate these limitations? What is the potential effect of these limitations on the results and conclusions? Is there a potential for bias?</li> </ul> <p><b>Minor</b></p> <ul style="list-style-type: none"> <li>• Page 12, line 3-7. Typically, the discussion starts with a summary of the key study findings. As I understand it, the key findings are stated at the end of the first paragraph in the Discussion. I recommend starting the discussion with the sentence “The interviews highlighted the perceived importance of financial burden...”</li> </ul>
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<b>REVIEWER NAME</b>	Amelie Von St-Andre
<b>REVIEWER AFFILIATION</b>	United Kingdom of Great Britain and Northern Ireland
<b>REVIEWER CONFLICT OF INTEREST</b>	No
<b>DATE REVIEW RETURNED</b>	21-Jul-2024

<b>GENERAL COMMENTS</b>	The authors addressed the majority of the issues raised by the reviewers and the manuscript reads much better. It adds important information on
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health care systems issues in Ghana and how this impacts the management of pediatric sepsis.

There are only minor revisions I would suggest, mostly related to the discussion.

#### Abstract

page 2, line 43: the majority of the necessary interventions for overcoming gaps in sepsis management are well established larger health systems issues and so I cannot quite agree with this conclusion: "This qualitative needs assessment informs the development of targeted strategies to collaboratively address gaps in sepsis management." Consider rephrasing along the lines that the study describes major healthcare systems deficiencies that render sepsis management challenging in these settings.

#### Introduction

Under "what is known", the authors mention that "Morbidity and mortality presenting to Ghanaian hospitals with sepsis is high". It would be helpful to mention those numbers, including sepsis incidence in Ghana or at the study hospital more specifically in the introduction if available, so the reader has a better understanding of the magnitude of the problem.

Page 13, line 18: The phrase "...rural Ghana - a sub-Saharan low- and middle- income country (LMIC) – sounds odd. Either delete "rural" or make a separate sentence about Ghana being an LMIC.

#### Methods

Page 14, line 32: Would say "consent to participate" instead of "willingness".

#### Discussion:

Page 11, line 42: Paragraph 1 usually summarizes the two or three main points in the article. Would rephrase and not start the discussion by citing the literature.

While the co-reviewer suggested referencing the 1994 Thaddeus paper which seems applicable despite focus on adult patients, I would also here focus on the Rudd 2018 paper (Ref #5) as it provides an excellent discussion of the contemporary challenges of pediatric sepsis management in LMICs.

Overall, the discussion could still be richer and further discuss the existing literature. As stated in my previous review, most barriers to effective sepsis care that were found in this study are not specific to sepsis but are the consequence of general health care system challenges in these settings, even if applied to patients with sepsis.

Delay in referral: In terms of improved ED management and transfer process in the SSA setting, it would be helpful to discuss the literature and available resources such as the new WHO Emergency Care Toolkit ([who.int](http://who.int)) or the ECAT tool (Bae, Evaluating emergency care capacity in Africa: an iterative, multicounty refinement of the Emergency Care Assessment Tool, *BMJ GH* 2018) and essential emergency and critical care as potential solutions for improved quality of care for the critically-ill child with sepsis. This could also help in building patients' and caregivers' trust in the referral hospital, apart from including caregivers in decision-making. Improving communication and enhancing rights of caregivers could be further discussed, especially with the existing emerging literature surrounding family centered care from Ghana, strengthening quality of care through feedback from patients in Ghana (Atinga RA. et al, *Afr J Emerg Med* 5:24–30, 2015) but also other countries in SSA.

	<p>Training: Given that house officers are the main healthcare providers in the ED taking care of critically ill sepsis patients, it is not surprising that there is lack of knowledge regarding sepsis diagnosis and management. The authors could discuss the literature on ways to increase sepsis and critical training of healthcare providers (Madeiros, Barriers and Proposed Solutions to a Successful Implementation of Pediatric Sepsis Protocols <a href="https://doi.org/10.3389/fped.2021.755484">https://doi.org/10.3389/fped.2021.755484</a>) as well as essential emergency and critical care resources.</p> <p>The issues of healthcare seeking in SSA have been well described in the described and could be discussed here to provide a more comprehensive picture. This is nicely summarized by Yaya et al "Health care seeking behavior for children with acute childhood illnesses and its relating factors in sub-Saharan Africa: evidence from 24 countries" (Trop Med 2021).</p>
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### VERSION 1 – AUTHOR RESPONSE

Dear Dr. Rohloff and Dr. Raman,

I am writing to submit our revised manuscript entitled " Barriers and facilitators when seeking healthcare for septic children in Ghana: single center interviews of patient caregivers and emergency department clinicians" for re-consideration for publication in BMJ Paediatrics Open. We appreciate the detailed feedback and have diligently revised the manuscript based on the reviewers' recommendations. We have diligently included all the details requested; however, we are now slightly over the original word limit. Of course, if the editors prefer to shorten the manuscript to bring it under the original word limit and move some of the requested added details to supplementary data, we are certainly amenable to that approach.

Our study employed qualitative methods to explore the experiences and perspectives of the caregivers and uniquely also, emergency department (ED) healthcare providers who cared for children who presented to a hospital in a lower-resourced setting in Kumasi, Ghana with sepsis or septic shock. Sepsis in children is a critical condition requiring prompt recognition and intervention, and understanding the viewpoints of those directly involved in the care process is crucial for improving outcomes and enhancing the quality of care provided. Through in-depth interviews with the caregivers and the ED healthcare providers, we identified key themes related to their experiences, challenges faced, and suggestions for improving care delivery. The insights gained from this study can inform strategies to enhance communication, optimize care processes, and improve outcomes for children with sepsis in all lower-resourced settings.

We believe our findings make a valuable contribution to the existing literature on pediatric sepsis and can inform clinical practice and policy that specifically address the most vulnerable children in a low-middle income country, in Sub-Saharan Africa. In addition, this collaborative study was done by a group of diverse scholars. We hope that you will consider our manuscript for publication in the BMJ Paediatrics Open.

Thank you for the opportunity and for considering our work. We look forward to hearing from you soon.