

Reply to the author

Reply to the commentary on: Molecular epidemiological exploration of carbapenem-resistant *Enterobacteriaceae* in Africa from a One Health perspectiveNma B. Alhaji^{1*}, Matteo Mellace² and Mohamed I. A. Hassan³¹Africa Centre of Excellence for Mycotoxin and Food Safety, Federal University of Technology, Minna, Nigeria²Department of Health Sciences, University Magna Graecia of Catanzaro, Viale Europa, Catanzaro, Italy³Faculty of Medicine, Friedrich Schiller University, Jena University Hospital, Jena, Germany***Corresponding author:** Nma B. Alhaji, drnma.alhaji@futminna.edu.ng**Article history:** Received 25 December 2025; Accepted 21 January 2026; Available online 28 January 2026**Article information:** Alhaji NB et al., 2025. *One Health Microbiol. Infect.* Vol. 1, No. 1: 42-43. <https://doi.org/10.66585/ohmi.2025.1.0008>**Abstract**

Not applicable

Keywords: Africa, Antimicrobial resistance, Carbapenem-resistant *Enterobacteriaceae*, One Health, Reply**To the editor**

We sincerely appreciate the opportunity to respond to the commentary by Akinyemi and Abdelmegid [1] regarding our recently published article in *One Health Microbiology & Infection* [2]. We are grateful for their thoughtful commentary, the readers' careful attention to our work, and their insightful and constructive observations.

Despite the global prohibition of carbapenem use in food producing animals, carbapenem resistant *Enterobacteriaceae* (CRE) have emerged in livestock, companion animals, and wildlife over the past decade, particularly in Africa [3]. This raises concerns about potential spillover into livestock populations, which serve as reservoirs and transmission routes to humans through consumption of CRE-contaminated meat and milk, direct contact, and aerosol inhalation. Although CRE are increasingly reported in humans in Africa, limited data from animals and the environment suggest that these domains are reservoirs for these critical priority bacteria [4, 5].

The authors of the commentary raised concerns regarding the limited number of publications included in our study, search strategy, and regional representation of available data. We are pleased to address these points, as such a discussion will provide valuable clarification and benefit the readers. We agree with the authors that including only eight studies represents limited evidence base and may not fully capture the true epidemiological landscape of CRE in Africa. Moreover, the lack of data from Central Africa and the underrepresentation of Southern Africa likely reflects broader gaps in surveillance rather than a genuinely low prevalence.

We emphasize that our strict inclusion criteria contributed to the limited number of eligible studies. Specifically, we prioritized original research, included only

English-language publications, and focused on studies investigating CRE at the human–animal–environment interface or across at least two One Health domains in Africa. Consequently, non-English publications, review articles, and studies limited only to a single One Health domain were excluded, reducing the number of included studies. Despite this limitation, the review provides valuable insights into the molecular epidemiology of CRE in Africa. However, the reliance on a small number of recent studies may affect generalizability and introduce bias. This highlights the urgent need for integrated, multisectoral One Health surveillance systems to generate comprehensive and representative data across the continent.

The authors pointed out that *Enterobacteriaceae* is a large family of Gram-negative bacteria encompassing numerous pathogenic bacteria and they suggested that this group should have been explicitly included in our search criteria. To address this, we used the terms “*Enterobacterales*” and “*Enterobacteriaceae*” in combination with the human–animal–environment interface in various forms to ensure a comprehensive search and capture all relevant studies. Moreover, although no specific time restriction was applied during the literature search, the timeframe of the included study is clearly detailed in the result section (Tables 1 and 2) of the original article [2].

Given the increasing spread of carbapenem resistance and the lack of integrated surveillance systems in Africa, understanding the epidemiology of CRE infections at the human–animal–environment interface is crucial, as these infections pose significant threats to global health security. Our review highlighted the burden of CRE, especially *Escherichia coli* and *Klebsiella pneumoniae*, and their associated resistance genes across humans, animals, and the environment in Africa. This presents a

major food safety and public health concern, emphasizing the urgent need for One Health–based surveillance and research to mitigate CRE threats.

We thank the authors once again for their valuable contribution to this important discussion.

Sincerely,

Nma B. Alhaji

On behalf of the authors

Declarations and supplementary information

Acknowledgments: Not applicable.

Author contributions: Authors contributed equally.

Funding source: Not applicable.

Conflict of interest statement: The authors declare no conflicts of interest.

Ethics statement: Not applicable.

Data availability: Not applicable.

Supplementary materials: Not applicable.

Declaration regarding the use of generative AI and AI-assisted technologies in the writing process: Grammarly was used to check grammar and improve writing quality; the authors reviewed all edits and assumes full responsibility for the content.

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References

1. Akinyemi K, Abdelmegid S. Commentary on: Molecular epidemiological exploration of carbapenem-resistant *Enterobacteriaceae* in Africa from a One Health perspective. *One Health Microbiol Infect.* 2025;1(1):28-30.
2. Alhaji NB, Salihu A, Odetokun IA, Mohammed IG, Mellace M, Hassan MIA. Molecular epidemiological exploration of carbapenem-resistant *Enterobacteriaceae* in Africa from One Health perspective: A systematic review. *One Health Microbiol Infect.* 2025;1(1):3-11.
3. Köck R, Daniels-Haardt I, Becker K, Mellmann A, Friedrich AW, Mevius D, et al. Carbapenem-resistant *Enterobacteriaceae* in wildlife, food-producing, and companion animals: A systematic review. *Clin Microbiol Infect.* 2018;24(12):1241-50. <https://doi.org/10.1016/j.cmi.2018.04.004>
4. Manenzhe RI, Zar HJ, Nicol MP, Kaba M. The spread of carbapenemase-producing bacteria in Africa: A systematic review. *J Antimicrob Chemother.* 2015;70(1):23-40. <https://doi.org/10.1093/jac/dku356>
5. Mitgang EA, Hartley DM, Malchione MD, Koch M, Goodman JL. Review and mapping of carbapenem-resistant *Enterobacteriaceae* in Africa: Using diverse data to inform surveillance gaps. *Int J Antimicrob Agents.* 2018;52(3):372-84. <https://doi.org/10.1016/j.ijantimicag.2018.05.019>