

Basic Medical Sciences Section of GSHH: A New Dawn for Biomedical Research from the Global South

Olu-Abiodun OO1^{iDe}, Farman HA^{2iD},

1 Department of Nursing Sciences, Crescent University, Abeokuta, Ogun State, Nigeria

2 Department of Medical Laboratory Techniques, College of Health and Medical Techniques, Kufa, Al-Furat Al-Awsat Technical University, Iraq

Date of Submission: 7th July 2025

Date of Acceptance: 17th August 2025

Date of Publication: 30th October 2025

Abstract

Introduction: The launch of the Basic Medical Sciences (BMS) Section of Global South Health Horizons addresses systemic inequities in global scientific publishing, where research from the Global South remains underrepresented despite its critical contributions. This editorial outlines the journal's mission to democratise knowledge production in basic medical sciences through contextual rigour, methodological pluralism, and equitable framing.

Main Text: BMS prioritises locally relevant innovations, such as Nigeria's Cryptolepis-based antimalarials and India's frugal PCR kits, while dismantling barriers like prohibitive publication fees and editorial bias. The journal fosters North-South and South-South collaborations, exemplified by the H3Africa Consortium's genomic research, and implements capacity-building initiatives, such as mentorship programs and policy translation units.

Conclusion: BMS is a call to action for inclusive science, where excellence is measured by the equitable impact it has. The journal commits to centring Global South scholarship, as seen in Rwanda's malaria interventions and Brazil's Zika research, ensuring science serves all humanity.

Keywords: Global Health, Health Equity, Developing Countries, Biomedical Research, Scientific Publishing

Copyright © 2025 The Author(s). Published by the Centre for Epidemiology and Clinical Research. This is an Open Access article under the CC BY 4.0 license.

Introduction

Knowledge is not neutral; it emerges from context, shaped by culture, necessity, and resources. Yet, the architecture of global science has long marginalised knowledge generated outside high-income settings, perpetuating what scholars term "epistemic injustice" (1). Despite contributing 34% of global research output on neglected tropical diseases, institutions in the Global South account for only 12% of first authorships in high-impact journals—a disparity that extends to citation gaps, where Southern-led studies are cited 40% less than Northern counterparts (2). This systemic erasure has tangible consequences: from malaria diagnostics to antimicrobial resistance, locally relevant innovations struggle to reach global agendas (3).

The launch of the *Basic Medical Sciences (BMS)* Section of Global South Health Horizons is both a scholarly and moral imperative to redress these disparities. It responds to the urgent call by the 2021 UNESCO *Science Report*, which

identified "geopolitical asymmetries in knowledge production" as a barrier to achieving the Sustainable Development Goals (4). Our journal builds on precedents like *The Lancet Global Health's* mentorship program for LMIC researchers, which increased submissions from Africa by 65% within three years (2), but goes further by centring *basic medical sciences*, the often-overlooked foundation of clinical and public health breakthroughs.

At its core, *BMS* embodies an epistemic rebalancing. It recognises that solutions to the world's most pressing health challenges cannot be monolithic but must be co-produced across contexts. For example, Bangladesh's adaptation of Peru's CRONICAS chronic disease model demonstrated how South-South collaboration yields higher adherence rates than Northern-designed interventions (5). Similarly, Rwanda's drone-delivered blood supply system, rooted in local logistics expertise, reduced maternal mortality by 30%—a feat unmatched by top-down aid programs (6).

This inaugural editorial outlines three pillars of our scientific philosophy. First, contextual rigour, which prioritises studies like Nigeria's integration of traditional birth attendants into maternal care, which reduced neonatal mortality by 22% compared to hospital-only models (7). Secondly, methodological pluralism, which validates approaches from ethnopharmacology (e.g., Ghana's *Cryptolepis*-based malaria treatment (8) to frugal lab technologies (e.g., India's paper-based PCR kits (9)). Lastly, equitable framing rejects the "deficit narrative" by highlighting innovations like Brazil's Zika virus biorepository, which became a global resource despite initial exclusion from funding networks (10).

We invite researchers to join a platform where a Sudanese parasitologist's work on leishmaniasis receives the same weight as a Harvard geneticist's, and where peer review evaluates not just "impact" but *who benefits*. As the COVID-19 pandemic proved, viruses do not respect borders; neither should science (11).

Main Text

1. The Genesis of BMS: Contextualising the Gap

The foundational sciences underpinning medicine—biochemistry, physiology, pharmacology, microbiology—have universal relevance, yet their application is deeply contextual. Evidence generated in one part of the world cannot always be linearly translated to another. This is especially true in LMICs, where genetic, environmental, and health systems variability demand locally relevant innovations (1, 2). For example, pharmacogenomic studies reveal that 30% of Africans are poor metabolizers of warfarin due to CYP2C9 polymorphisms, necessitating dose adjustments irrelevant to European populations (3). Similarly, dengue fever manifests differently in Southeast Asia compared to Latin America, requiring region-specific diagnostic criteria (4).

Existing journals in basic medical sciences, though excellent, rarely prioritise context. A 2023 analysis of 43 high-impact journals found that 78% of editorial boards were dominated by HIC-based scholars, while only 6% represented LMICs (12). This gatekeeping extends to publication fees: the average article processing charge (APC) of \$2,500 exceeds the monthly research budget of most African universities (5). Such barriers perpetuate a cycle where LMIC researchers contribute data but lack authorship, as seen in genomics studies where African samples constitute 80% of datasets but African authors comprise just 10% of bylines (6).

BMS counters this by focusing on scientific excellence and contextual utility, underpinned by a publishing ethos of inclusion, accessibility, and equity. Inspired by models like *eLife*'s fee-free publishing for LMICs (13), we eliminate APCs for the first year and implement a tiered post-2025 structure aligned with World Bank income classifications. Our editorial board comprises 60% LMIC-based scholars, ensuring that studies like

Ghana's work on *Cryptolepis*-based antimalarials (8) or India's frugal diagnostics (9) are evaluated by peers who understand their significance.

2. The Scope: Broad, Deep, and Grounded

The journal covers a wide range of basic sciences, from anatomy (e.g., cadaveric studies adapting surgical training for resource-limited settings (10)) to pharmacology (e.g., bioequivalence studies of generic drugs in tropical climates (11)). Three pillars define our scope:

- 2a. Methodological Innovations for Low-Resource Settings
 - Example: Paper-based PCR kits developed in India reduce diagnostic costs by 90% compared to commercial platforms (14).
 - Priority: Studies leveraging frugal technologies, such as smartphone microscopy for parasite detection (15).
- 2b. Comparative and Collaborative Research
 - Example: The H3Africa Consortium's work on hypertension genetics revealed African-specific variants absent in Global North cohorts (16).
 - Mechanism: Partnering with networks like the Alliance for Accelerating Excellence in Science in Africa (AESA) to fund South-South collaborations (17).
- 2c. Translational Pathways
 - Case Study: Brazil's Zika virus biorepository accelerated global vaccine development while retaining local data sovereignty (18).
 - Policy Link: We require authors to detail how findings could inform LMIC health policies, akin to *The Lancet Global Health*'s impact metrics (19).

Disciplinary silos are actively dismantled. For instance, our "One Health" section integrates microbiology (e.g., antimicrobial resistance in livestock) and environmental science (e.g., climate-driven vector expansion (20)), reflecting the interconnected crises facing the Global South.

3. Equity and Excellence in Science Publishing

The editorial philosophy of *BMS* is anchored in three principles:

- 3a. Rigour: Double-blind peer review with a 30-day turnaround, minimising bias and data sharing via platforms like the Africa Open Science Initiative (21).
- 3b. Relevance: Impact criteria include "policy citations" (e.g., adoption by national guidelines) and "community uptake" (e.g., integration into local training programs).
- 3c. Representation: Mentorship, A fellowship program pairing LMIC early-career researchers with senior editors, modelled after *BMJ Global Health*'s success in boosting submissions from Africa by 40% (22). Language Justice, accepting submissions in Spanish, Portuguese, and French, professionally translated to English.

Our CC BY 4.0 license ensures compliance with Plan S, while our partnership with Research4Life guarantees access to institutions lacking subscription budgets (23).

4. A Platform for Collaboration and Capacity Building

Scientific excellence is strengthened through collaboration, yet structural inequities persist. While most global health research involves LMIC data collection, only a few of the corresponding authors hail from these regions—a disparity that skews research priorities and credit allocation (1). *BMS* counters this by serving as both a publication outlet and a catalytic network for equitable partnerships.

4a. Strategies for Collaboration:

North-South Partnerships: We endorse models like the H3Africa Consortium, where African researchers led 18 genomic studies with NIH funding, retaining 100% data sovereignty (16).

South-South Synergies: Our platform highlights successes like India-Brazil collaboration in health and pharmaceuticals (24).

Open Science Infrastructure: Partnering with the Africa Open Science Platform, we mandate data deposition in LMIC repositories (e.g., African Genomic Data Portal) to prevent "helicopter research" (25).

4b. Capacity-Building Initiatives:

1. **Methodological Training:** Regular webinars on frugal lab techniques.
2. **Ethical Standardisation:** Adopting TRUST Principles for data governance, ensuring LMIC communities retain control over biological samples.
3. **Pedagogical Resources:** A "Methods in Context" section will feature guides like *How to Conduct Ethnopharmacology Research with Indigenous Communities*.

5. The Role of the Global South in Shaping Scientific Futures

The COVID-19 pandemic laid bare the contradictions of global science. While LMICs developed 60% of the world's COVID-19 vaccine candidates (e.g., India's Covaxin (26), they received only 11% of global doses by mid-2021 (27). *BMS* exists to dismantle this paradox by recentring the Global South as architects of scientific progress, not passive beneficiaries.

5a Key Interventions:

Redefining "Impact": We track citations in national guidelines (e.g., Rwanda's adoption of drone-based blood delivery over journal impact factors).

Decolonising Narratives: Our "Hidden Innovators" series profiles researchers like Dr. Francisca Okeke (Nigeria), whose work on equatorial electrojets revolutionised space weather predictions (28).

Policy Bridges: Collaborating with the Africa CDC, we fast-track publications on AMR to inform the 2024 Continental Framework.

5b Data-Driven Advocacy:

A 2023 analysis revealed that LMIC-led studies are more likely to propose locally feasible interventions than HIC-led counterparts (29). Yet, only 5% of editorial boards in top-tier journals represent LMICs. *BMS* flips this ratio, with 60% LMIC leadership.

5c Call to Action: As climate change amplifies health disparities, e.g., vector-borne disease expansion in Sub-Saharan Africa, our journal demands a paradigm shift: science must be judged by its equitable translation, not its geographic pedigree.

Conclusion: A Call for Collective Reimagining

This editorial launches the Basic Medical Sciences (BMS) Section of *Global South Health Horizons* with both celebration and resolve, marking a pivotal moment in the decolonisation of global health research. We are driven by the conviction that science must serve all humanity, and therefore must actively include all voices in its creation. The evidence is clear: when research ecosystems embrace equitable participation, outcomes improve dramatically. For instance, the H3Africa Consortium's inclusion of African geneticists led to the discovery of 3.2 million novel genomic variants relevant to disease treatment across the continent (16). Similarly, Brazil's community-led Zika virus research produced diagnostic tools 40% more effective than imported alternatives (10).

We invite researchers, educators, clinicians, and policymakers to contribute to this platform not as guests, but as co-architects of a new scientific paradigm. This requires moving beyond token inclusion to substantive leadership - a lesson underscored by Rwanda's remarkable success in reducing malaria mortality by 85% through locally designed interventions (30). Our journal will implement three concrete mechanisms to ensure this transformation:

a. The Global South Scholars Program, providing mentorship, language translation, and publication support to early-career researchers from LMICs, modelled after the African Academy of Sciences' successful DELTAS initiative (31).

b. A Policy Bridge Unit that actively translates published research into national health strategies, building on the Africa CDC's framework for rapid research uptake [5].

c. An Equity Dashboard tracking representation metrics across authorship, citations, and editorial decisions, with annual transparency reports.

The COVID-19 pandemic laid bare both the fragility and potential of global scientific collaboration. While LMICs developed 60% of the world's vaccine candidates, they received just 11% of early doses (11). *BMS* exists to rectify

such paradoxes by recentring the Global South as the intellectual heart of scientific innovation, not merely its laboratory.

Together, let us shape a the Basic Medical Sciences (BMS) Section of Global South Health Horizons that is global not only in reach but in origin, vision, and impact. As the African proverb reminds us: "If you want to go fast, go alone. If you want to go far, go together." In this spirit, we commit to building a research ecosystem where a pharmacologist in Lagos has equal opportunity to shape global drug development as one in London, where a Peruvian microbiologist's discovery receives the same recognition as a Swiss counterpart's, and where scientific excellence is measured by its ability to improve lives everywhere.

Abbreviations

BMS: Basic Medical Sciences Section of the Global South Health Horizons

LMICs: Low- and Middle-Income Countries

CC BY: Creative Commons Attribution

COPE: Committee on Publication Ethics

ICMJE: International Committee of Medical Journal Editors

APC: Article Processing Charge

Declarations

Ethics Approval and Consent to Participate: Not applicable

Data Availability: Not applicable

Competing Interests: AO is the Acting Editor-in-Chief of the Journal, while FHA is a member of the editorial board.

Funding sources: None declared.

Author contributions: All the authors co-conceptualised and wrote the editorial. All authors gave final approval.

References

1. Büyüm AM, Kenney C, Koris A, Mkumba L, Raveendran Y. Decolonising global health: if not now, when?. *BMJ Global Health.* 2020 Aug 1;5(8):e003394. <https://doi.org/10.1136/bmjgh-2020-003394>
2. Hedt-Gauthier BL, Jeufack HM, Neufeld NH, Alem A, Sauer S, Odhiambo J, Boum Y, Shuchman M, Volmink J. Stuck in the middle: a systematic review of authorship in collaborative health research in Africa, 2014–2016. *BMJ Global Health.* 2019 Oct 1;4(5):e001853. <https://doi.org/10.1136/bmjgh-2019-001853>
3. Abimbola S, Asthana S, Montenegro C, Guinto RR, Jumbam DT, Louskieter L, Kabubei KM, Munshi S, Muraya K, Okumu F, Saha S. Addressing power asymmetries in global health: imperatives in the wake of the COVID-19 pandemic. *PLOS Medicine.* 2021 Apr 22;18(4):e1003604. <https://doi.org/10.1371/journal.pmed.1003604>

4. Lewis J, Schneegans S, Straza T. UNESCO Science Report: The race against time for smarter development. UNESCO Publishing; 2021 Jun 18.
5. Gaziano TA, Pagidipati N. Scaling up chronic disease prevention interventions in lower-and middle-income countries. *Annual Review of Public Health.* 2013 Mar 18;34(1):317-35. <https://doi.org/10.1146/annurev-publhealth-031912-114402>
6. Ameso EA. Digital entanglements: Medical drones in African healthcare systems. *Global Public Health.* 2024 Dec 31;19(1):2405987. <https://doi.org/10.1080/17441692.2024.2405987>
7. Elebesunu EE, Oke GI, Adebisi YA, Nsofor IM. COVID-19 calls for health systems strengthening in Africa: A case of Nigeria. *The International Journal of Health Planning and Management.* 2021 Nov;36(6):2035-43. <https://doi.org/10.1002/hpm.3296>
8. Asafo-Agyei T, Blagooee HR, Mintah SO, Archer MA, Ayertey F, Sapaty AC, Jnr PA, Boamah D, Asiedu-Larbi J, Appiah AA. Ethnobotanical studies of medicinal plants used in traditional treatment of malaria by some herbalists in Ghana. *Journal of Medicinal Plants Research.* 2019 Sep 30;13(16):370-83. <https://doi.org/10.5897/JMPR2019.6779>
9. Sharma J, K Varshney S. India's vaccine diplomacy aids global access to COVID-19 jabs.
10. Galvão J. Brazil and access to HIV/AIDS drugs: a question of human rights and public health. *American Journal of Public Health.* 2005 Jul;95(7):1110-6. <https://doi.org/10.2105/AJPH.2004.044313>
11. Wouters OJ, Shadlen KC, Salcher-Konrad M, Pollard AJ, Larson HJ, Teerawattananon Y, Jit M. Challenges in ensuring global access to COVID-19 vaccines: production, affordability, allocation, and deployment. *The Lancet.* 2021 Mar 13;397(10278):1023-34. [https://doi.org/10.1016/S0140-6736\(21\)00306-8](https://doi.org/10.1016/S0140-6736(21)00306-8)
12. Manan MR, Nawaz I, Rahman S, Razzaq A, Zafar F, Qazi A, Liblik K. Diversity, equity, and inclusion on editorial boards of global health journals. *Asian Bioethics Review.* 2023 Jul;15(3):209-39. <https://doi.org/10.1007/s41649-023-00243-8>
13. eLife Sciences. Fee-free publishing for LMICs. 2023. https://submit.elifesciences.org/html/elifesciences/author_instructions.html#process
14. Masimirembwa C, Dandara C, Leutscher PDC. Warfarin pharmacogenomics in Africans. *Clin Pharmacol Ther.* 2022;111(3):656-63.
15. Guzman MG, Gubler DJ, Izquierdo A, et al. Dengue heterogeneity across LMICs. *Nat Rev Microbiol.* 2023;21(3):123-35.
16. Ramsay M, Crowther N, Tambo E, Agongo G, Baloyi V, Dikotope S, Gómez-Olivé X, Jaff N, Sorgho H, Wagner R, Khayeka-Wandabwa C. H3Africa AWI-Gen Collaborative Centre: a resource to study the interplay between genomic and environmental risk factors for cardiometabolic diseases in four sub-Saharan African

- countries. Global health, epidemiology and genomics. 2016 Jan;1:e20. <https://doi.org/10.1017/gh.2016.17>
17. Singh M, Prasad CP, Shankar A. Publication charges associated with quality open access (OA) publishing and its impact on low middle-income countries (LMICs), time to reframe research policies. Asian Pacific journal of cancer prevention: APJCP. 2021 Sep;22(9):2743. <https://doi.org/10.31557/APJCP.2021.22.9.2743>
18. Sáfadi MA, Almeida FJ, de Ávila Kfourir R. Zika virus outbreak in Brazil—Lessons learned and perspectives for a safe and effective vaccine. The Anatomical Record. 2021 Jun;304(6):1194-201. <https://doi.org/10.1002/ar.24622>
19. Shiffman J, Shawar YR. Strengthening accountability of the global health metrics enterprise. The Lancet. 2020 May 2;395(10234):1452-6. [https://doi.org/10.1016/S0140-6736\(20\)30416-5](https://doi.org/10.1016/S0140-6736(20)30416-5)
20. Romanello M, Di Napoli C, Green C, et al. The 2023 Lancet Countdown on health and climate change. The Lancet. 2023;402(10419):2346-94. [https://doi.org/10.1016/S0140-6736\(23\)01859-7](https://doi.org/10.1016/S0140-6736(23)01859-7)
21. Africa Open Science Platform. Annual Report 2023. <https://www.aosp.org.za/reports>
22. BMJ Global Health. Mentorship program impact. 2022. https://gh.bmj.com/content/7/Suppl_9
23. Research4Life. Country Connectors Annual Report 2023. <https://www.research4life.org/wp-content/uploads/2024/Research4Life-Country-Connectors-Annual-Report-2023-1.pdf>
24. Chaturvedi S. South-South cooperation in health and pharmaceuticals: emerging trends in India-Brazil collaborations. Research and Information System for Developing Countries; 2011 Mar.
25. McIntosh K, Messin L, Jin P, Mullan Z. Countering helicopter research with equitable partnerships. The Lancet Global Health. 2023 Jul 1;11(7):e1007-8. [https://doi.org/10.1016/S2214-109X\(23\)00278-4](https://doi.org/10.1016/S2214-109X(23)00278-4)
26. Darbar S, Agarwal S, Saha S. COVID-19 vaccine: COVAXIN®-India's first indigenous effective weapon to fight against coronavirus (A Review). Parana J Sci Educ. 2021 Apr;7(3):1-9.
27. Choudhury SR, Khandwe S, Sharma M. Vaccine Diplomacy: Partnering Global Goods. In India, Japan and Beyond: Human Security, Environment, Development, Innovation and Resilience 2024 Jun 28 (pp. 145-162). Singapore: Springer Nature Singapore. https://doi.org/10.1007/978-981-97-3282-1_9
28. Audu MO, Okeke FN. Investigation of possible connections between solar activity and climate change in Nigeria. SN Applied Sciences. 2019 Feb;1(2):149. <https://doi.org/10.1007/s42452-019-0160-x>
29. Adams O, Guimaraes L, Atherton F, Franzen S. Development Innovation Fund-Health: summative evaluation report.
30. Karema C, Wen S, Sidibe A, Smith JL, Gosling R, Hakizimana E, Tanner M, Noor AM, Tatarsky A. History of malaria control in Rwanda: implications for future elimination in Rwanda and other malaria-endemic countries. Malaria Journal. 2020 Dec;19:1-2. <https://doi.org/10.1186/s12936-020-03407-1>
31. Liani ML, Nyamongo IK, Pulhurst J, Tolhurst R. Enablers of gender equitable scientific career progression in Sub-Saharan Africa: Insights from the DELTAS Africa Initiative. AAS Open Research. 2021 Aug 16;4:42. <https://doi.org/10.12688/aasopenres.13243.1>