Revisiting the threat of Lassa fever in Nigeria: A call for strategic and inclusive action

KEYWORDS: Africa, Lassa fever, Nigeria, One-Health, Public Health

Victor Ibukun Agbajelola[1,&], Terese Gabriel Orum[2]

[1]Department of Pathobiology & Integrative Biomedical Sciences, University of Missouri, Columbia, MO, USA, [2]Nigeria Centre for Disease Control and Prevention, Abuja, Nigeria

[&]CORRESPONDING AUTHOR
Victor Ibukun Agbajelola, Department of Pathobiology & Integrative Biomedical Sciences, University of Missouri, Columbia, MO, USA,
Email: vianh2@missouri.edu **ORCID**: https://orcid.org/0000-0002-7289-7764

ABSTRACT

Lassa fever persists as a seasonal epidemic in Nigeria, driven by weak surveillance, delayed diagnosis, and fragmented control efforts. Despite modest progress and promising vaccine research, no licensed vaccine exists, and prevention remains reactive. Environmental risks, poor housing, and social stigma exacerbate transmission and mortality. Addressing Lassa fever demands year-round, multisectoral investment in surveillance, diagnostics, community engagement, and One Health strategies. Without structural reforms, Nigeria risks normalizing a preventable cycle of suffering and death.

RECEIVED
11/09/2025

ACCEPTED
09/12/2025

PUBLISHED
10/12/2025

LINK

https://afenet-journal.org/revisiting-the-threat-of-lassa-fever-in-nigeria-a-call-for-strategic-and-inclusive-action/

CITATION
Victor Ibukun Agbajelola et al., Revisiting the threat of Lassa fever in Nigeria: A call for strategic and inclusive action. Journal of Interventional Epidemiology and Public Health. 2025 DECEMBER;8(4):102. DOI: https://doi.org/10.37432/jieph-d-25-00178

Perspective

Every dry season, the pattern repeats

Each dry season in Nigeria brings a familiar and ominous public health threat: Lassa fever. Despite more than five decades of awareness, the country remains trapped in a cycle of seasonal outbreaks, delayed detection, underreporting, and preventable mortality [1]. Lassa fever, caused by the Lassa virus, an arenavirus, primarily spreads through contact with excreta from infected *Mastomys natalensis* rats that thrive in human dwellings [1-2]. The disease is endemic to West Africa, with an estimated 300,000 infections and 5,000 deaths annually, and Nigeria bears the greatest burden [3-4]. In 2023 alone, over 8,000 suspected cases and more than 1,000 confirmed infections were reported in Nigeria, with an average case fatality rate of 17.9% nationally, though some states recorded higher figures [5]. Healthcare workers remain disproportionately affected, largely due to delayed diagnosis and poor access to infection prevention and control (IPC) resources [6-7]. Compounding the issue are environmental and behavioral risk factors, such as bush burning, rodent infestation, and poor food storage, which promote seasonal transmission peaks between November and April [8].

The surveillance gap and the vaccine void

Unlike diseases such as polio or rabies, Lassa fever lacks a defined global eradication timeline. Its zoonotic reservoir makes elimination biologically improbable using current public health tools. However, this biological complexity should not justify policy inertia. Nigeria has made modest progress, most notably, the activation of annual Emergency Operations Centres (EOCs) by the Nigeria Centre for Disease Control and Prevention (NCDC) to coordinate preparedness and response during outbreak seasons [5]. However, these efforts remain largely reactive and seasonal, not part of a sustained, year-round strategic framework.

Meanwhile, international momentum is growing – Lassa fever is recognized by the World Health Organization (WHO) as a priority pathogen under its R&D Blueprint for Action to Prevent Epidemics [9]. In response, the Coalition for Epidemic Preparedness Innovations (CEPI) is supporting several vaccine candidates, including INO-4500 (Inovio) and IAVI's rVSV-LASV vector, both currently in Phase I and II clinical trials in West Africa [10]. Complementing these efforts, the ENABLE Lassa Research programme, launched in 2019, conducted a multi-country cohort study across Benin, Guinea, Liberia, Nigeria, and Sierra Leone, enrolling over 23,000 participants to estimate Lassa virus exposure and incidence. The study reported a mean seroprevalence of ~30%, ranging from 2% in Benin to 48% in Liberia. Its follow-on phase, ENABLE 1.5, focuses on high-risk populations in Nigeria, Liberia, and Sierra Leone, expanding surveillance to young children and assessing post-infection outcomes such as sensorineural hearing loss [11]. Despite these advances, no licensed vaccine exists, and timelines for regulatory approval and deployment remain uncertain.

Repositioning the national response

There is limited public awareness of Lassa fever risk factors, uneven diagnostic capacity across states, and insufficient rodent control infrastructure [5, 7,12]. Control efforts remain fragmented, with weak integration between human health, veterinary, and environmental sectors, despite growing support for the One Health approach [13].

The challenge today is less a lack of technical knowledge and more the absence of sustained, coordinated investment across sectors. While annual outbreak responses are necessary, they cannot replace year-round preparedness and structural reform. Nigeria requires a comprehensive, multisectoral Lassa fever control strategy that articulates concrete milestones: expanding laboratory capacity with regional diagnostics and mobile platforms; establishing strategic stockpiles of antivirals—since no licensed product exists and early ribavirin treatment remains inconsistent across facilities [14]; improving housing, sanitation, and food-storage infrastructure to reduce rodent-human contact; and scaling community-based surveillance and engagement to identify early cases and shift the paradigm from reactive to preventive control.

Lassa fever remains both neglected and normalized—an unfortunate combination that perpetuates cyclical outbreaks and fragmented responses. To achieve meaningful progress, Nigeria must transition from reactive outbreak control to a sustained, integrated national strategy guided by the following priorities:

1. **Surveillance and early detection**: Strengthen integrated case-based surveillance through community-level

reporting, real-time digital notification systems, and sentinel site expansion across endemic states. Incorporating rodent population surveillance within a *One Health* framework will enable early warning of increased transmission risk and improve outbreak forecasting.

2. **Laboratory capacity and diagnostic capability**: Expand and decentralize diagnostic facilities beyond national reference laboratories to regional hospitals and academic centers. Investment in mobile PCR platforms, regional biobanking, and trained laboratory personnel will improve turnaround time and enhance situational awareness during peak transmission periods [6].
3. **Health system preparedness and readiness:** Institutionalize Lassa fever preparedness in Nigeria's national emergency health plans. This includes strategic stockpiling of antivirals such as ribavirin, adequate supplies of personal protective equipment (PPE), and well-trained rapid response teams stationed in hotspot regions. Consistent access to early treatment remains crucial, as ribavirin remains the only widely available therapeutic option, albeit with variable distribution and efficacy [14].
4. **Community engagement and risk reduction**: Work collaboratively with traditional leaders, faith-based organizations, and community-based groups to strengthen culturally sensitive public health messaging. Campaigns should emphasize behavioral change—discouraging bush rat consumption, improving household sanitation and food storage, and addressing stigma toward survivors—to promote sustainable risk reduction.
5. **Coordination, governance, and long-term investment**: Establish an inter-ministerial coordination mechanism linking the Ministries of Health, Agriculture, and Environment to promote a unified One Health agenda. Long-term success requires dedicated national funding for rodent control, research, and vaccine preparedness, supported by public–private partnerships and donor collaboration.

Together, these priorities offer a practical roadmap for transitioning Nigeria's Lassa fever response from episodic containment to sustained prevention, ensuring resilience against future zoonotic threats.

Community and ethical considerations

Effective Lassa fever control must go beyond biomedical measures to address social and ethical factors. In some Nigerian communities, bush rat consumption and burial rites raise transmission risks. Stigma faced by survivors often deters others from seeking care, leading to self-medication and delayed detection. Nigeria's health system must provide equitable access to protection, clear risk communication, and survivor support. Tackling cultural practices and social determinants through community-led, context-specific strategies is essential for lasting and effective disease control.

A call to action

This commentary calls for a fundamental shift in how Lassa fever is prioritised in Nigeria. The disease should no longer be treated as a seasonal anomaly but as a persistent threat requiring a comprehensive national strategy and stronger international partnerships. Government agencies, research institutions, and global health donors must move beyond emergency response and toward structural change. If we continue to treat Lassa fever as routine, we risk normalising preventable suffering and avoidable deaths. The time to act is between outbreaks, not during them.

What is already known about the topic

- Lassa fever is endemic in Nigeria with recurrent seasonal outbreaks.
- Transmission is linked to *Mastomys* rodents, poor food storage, and environmental factors.
- Nigeria faces challenges of delayed diagnosis, weak surveillance, and high healthcare worker risk.
- No licensed vaccine exists despite ongoing international trials.
- Current response efforts remain largely reactive and seasonal.

What this study adds

- Calls for a shift from reactive outbreak response to a sustained national strategy.

- Emphasizes integration of the One Health approach for effective control.
- Highlights the role of community practices, stigma, and ethics in disease spread.
- Advocates investment in diagnostics, surveillance, and prevention infrastructure.
- Frames Lassa fever as a persistent threat needing year-round global and local action.

Competing interest

The authors of this work declare no competing interests.

Funding
The authors did not receive any funding for this work.

Acknowledgements

The authors would like to acknowledge all anonymous reviewers for their constructive feedback.

Authors´ contributions

VIA conceptualized the brief and wrote the first draft. TGO made substantial corrections and reviewed the draft. Both authors reviewed and approved the final version of the manuscript.

References

1. Olayemi A, Obadare A, Oyeyiola A, Igbokwe J, Fasogbon A, Igbahenah F, Ortsega D, Asogun D, Umeh P, Vakkai I, Abejegah C, Pahlmann M, Becker-Ziaja B, Günther S, Fichet-Calvet E. Arenavirus diversity and phylogeography of Mastomys natalensis rodents, Nigeria. Emerg Infect Dis [Internet]. 2016 Apr [cited 2025 Dec 10];22(4):687-690. Available from: https://wwwnc.cdc.gov/eid/article/22/4/15-0155_article, doi:10.3201/eid2204.150155
2. Richmond JK. Lassa fever: epidemiology, clinical features, and social consequences. BMJ [Internet]. 2003 Nov 29 [cited 2025 Dec 10];327(7426):1271-1275. Available from: https://www.bmj.com/content/327/7426/1271, doi:10.1136/bmj.327.7426.1271. Erratum in: BMJ [Internet]. 2004 Jan 10 [cited 2025 Dec 10];328(7431):96. Available from: https://www.bmj.com/content/328/7431/96.1, doi:10.1136/bmj.328.7431.96; BMJ [Internet]. 2004 Oct 2 [cited 2025 Dec 10];329(7469):773. Available from: https://www.bmj.com/content/329/7469/773.2, doi:10.1136/bmj.329.7469.773-a
3. McCormick JB, King IJ, Webb PA, Scribner CL, Craven RB, Johnson KM, Elliott LH, Belmont-Williams R. Lassa fever. Effective therapy with ribavirin. N Engl J Med [Internet]. 1986 Jan 2 [cited 2025 Dec 10];314(1):20-26. Available from: https://www.nejm.org/doi/full/10.1056/NEJM198601023140104, doi:10.1056/NEJM198601023140104 (subscription required for full text)
4. Ogbu O, Ajuluchukwu E, Uneke CJ. Lassa fever in West African sub-region: an overview. J Vector Borne Dis [Internet]. 2007 Mar [cited 2025 Dec 10];44(1):1-11. Available from: http://www.mrcindia.org/journal/issues/441001.pdf
5. Nigeria Centre for Disease Control and Prevention. NCDC Lassa fever situation report epi week 52: 25th – 31st December 2023 [Internet]. Abuja (Nigeria): NCDC; 2024 Jan 13 [cited 2025 Dec 10]. 7 p. Available from: https://ncdc.gov.ng/themes/common/files/sitreps/211223_52.pdf
6. Asogun D, Arogundade B, Unuabonah F, Olugbenro O, Asogun J, Aluede F, Ehichioya D. A review of the epidemiology of Lassa fever in Nigeria. Microorganisms [Internet]. 2025 Jun 18 [cited 2025 Dec 10];13(6):1419. Available from: https://www.mdpi.com/2076-2607/13/6/1419, doi:10.3390/microorganisms13061419
7. Ijarotimi IT, Ilesanmi OS, Aderinwale A, Abiodun-Adewusi O, Okon IM. Knowledge of Lassa fever and use of infection prevention and control facilities among health care workers during Lassa fever outbreak in Ondo State, Nigeria. Pan Afr Med J [Internet]. 2018 May 24 [cited 2025 Dec 10];30:56. Available from: https://www.panafrican-med-journal.com/content/article/30/56/full/, doi:10.11604/pamj.2018.30.56.13125

8. Fichet-Calvet E, Rogers DJ. Risk maps of Lassa fever in West Africa. PLoS Negl Trop Dis [Internet]. 2009 Mar 3 [cited 2025 Dec 10];3(3):e388. Available from: https://journals.plos.org/plosntds/article?id=10.1371/journal.pntd.0000388, doi:10.1371/journal.pntd.0000388
9. World Health Organization. Lassa fever research and development (R&D) roadmap [Internet]. Geneva (Switzerland): WHO; 2019 Jan 1 [cited 2025 Dec 10]. 30 p. Available from: https://www.who.int/publications/m/item/lassa-fever-research-and-development-(r-d)-roadmap
10. Coalition for Epidemic Preparedness Innovations (CEPI). CEPI partner IAVI announces first vaccinations at Liberia site for Phase I clinical trial of Lassa fever vaccine [Internet]. Oslo (Norway): CEPI; 2022 Aug 31 [cited 2025 Dec 10]. Available from: https://cepi.net/cepi-partner-iavi-announces-first-vaccinations-liberia-site-phase-i-clinical-trial-lassa-fever
11. Coalition for Epidemic Preparedness Innovations (CEPI). Enable programme: the largest-ever Lassa fever research programme in West Africa [Internet]. Oslo (Norway): CEPI; c2009-2025 [cited 2025 Dec 10]. Available from: https://cepi-tr.tghn.org/research-and-development/epidemiology/enable-epi-study/
12. World Health Organization. Lassa fever: fact sheet [Internet]. Geneva (Switzerland): WHO; 2024 Dec 5 [cited 2025 Dec 10]. Available from: https://www.who.int/news-room/fact-sheets/detail/lassa-fever
13. Bonwitt J, Sáez AM, Lamin J, Ansumana R, Dawson M, Buanie J, Lamin J, Sondufu D, Borchert M, Sahr F, Fichet-Calvet E, Brown H. At home with Mastomys and Rattus: human-rodent interactions and potential for primary transmission of Lassa virus in domestic spaces. Am J Trop Med Hyg [Internet]. 2017 Apr 5 [cited 2025 Dec 10];96(4):935-943. Available from: https://www.ajtmh.org/view/journals/tpmd/96/4/article-p935.xml, doi:10.4269/ajtmh.16-0675
14. Warner BM, Safronetz D, Stein DR. Current perspectives on vaccines and therapeutics for Lassa fever. Virol J [Internet]. 2024 Dec 19 [cited 2025 Dec 10];21(1):320. Available from: https://virologyj.biomedcentral.com/articles/10.1186/s12985-024-02585-7, doi:10.1186/s12985-024-02585-7