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Abattoirs as sentinel sites for One Health surveillance of Lassa fever: A literature review from a West African Perspective

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Introduction

Lassa fever, an acute viral hemorrhagic illness endemic to West Africa, is driven by zoonotic spillover from *Mastomys natalensis*, often facilitated by human animal environment interactions in rural and peri urban settings. While early warning systems are vital for outbreak prevention, abattoirs remain underutilized despite being high risk interfaces where disease transmission and pathogen amplification may occur. This review explores the potential of abattoirs as sentinel sites for One Health-based Lassa fever surveillance and early warning. This research aims to review current literature on Lassa fever surveillance systems and assess the potential role of abattoirs as integrated One Health surveillance nodes in West Africa

Methods

A scoping literature review was conducted using the Arksey and O'Malley framework. Databases searched included PubMed, Scopus, African Journals Online (AJOL), and grey literature from institutional repositories. Search terms included: "Lassa fever," "abattoir surveillance," "zoonotic disease," "One Health," and "West Africa." Studies published between 2019 and 2024 were included if they addressed surveillance, zoonotic transmission, or integrated health systems involving abattoirs.

Results

Out of 72 reviewed documents, only 6 (8.3%) referenced abattoirs in relation to Lassa fever or zoonotic surveillance. Most national surveillance frameworks lacked animal health environmental components at the slaughterhouse level. Rodent infestation and poor waste disposal practices were the recurrent risk factors identified. Promising models from Nigeria and Ghana advocated for integrated data collection and intersectoral training.

Conclusion

Abattoirs present an overlooked opportunity for zoonotic surveillance in West Africa. Embedding One Health strategies into abattoir operations could strengthen early warning systems for Lassa fever and related zoonoses. Policy and operational reforms should prioritize abattoir-based sentinel surveillance to bridge animal-human health gaps. Integrate abattoirs into national One Health surveillance frameworks. Train frontline workers,

enhance cross-sectoral data sharing, and implement routine zoonotic monitoring to strengthen early warning.