Re-Emergence of Anthrax in Nigeria: Lessons for Biological Threat Reduction

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GLOBAL CONFERENCE ON BIOLOGICAL THREAT REDUCTION

CICG Conference Center
Geneva, Switzerland

28-30 October 2025

World Organisation for Animal Health

Outline

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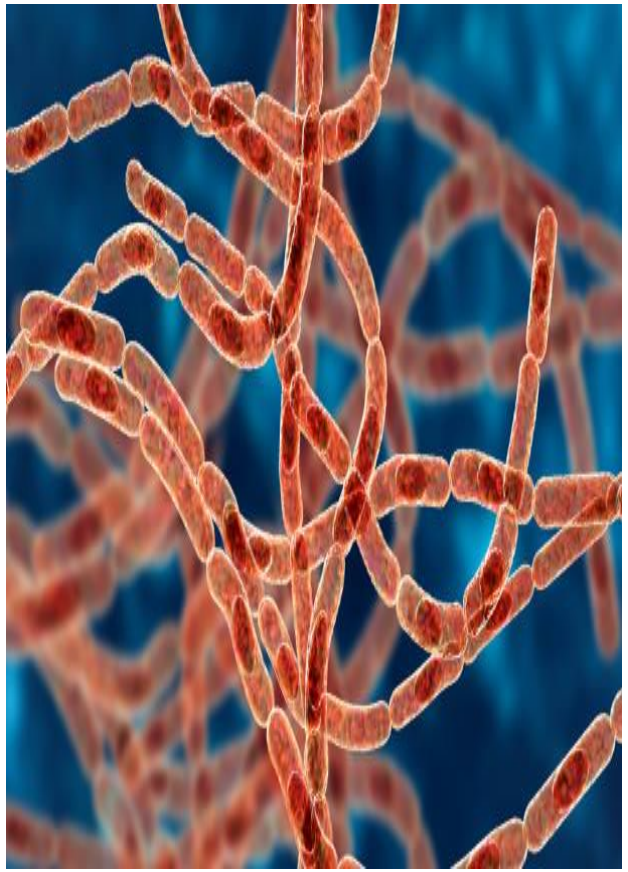
Background



- Anthrax is an acute zoonotic bacterial infection caused by Bacillus anthracis
- It survives in the soil, wool, or hair of infected animals and the environment for decades: complicating eradication efforts
- One of the most lethal weapons used worldwide as agents of bioterrorism

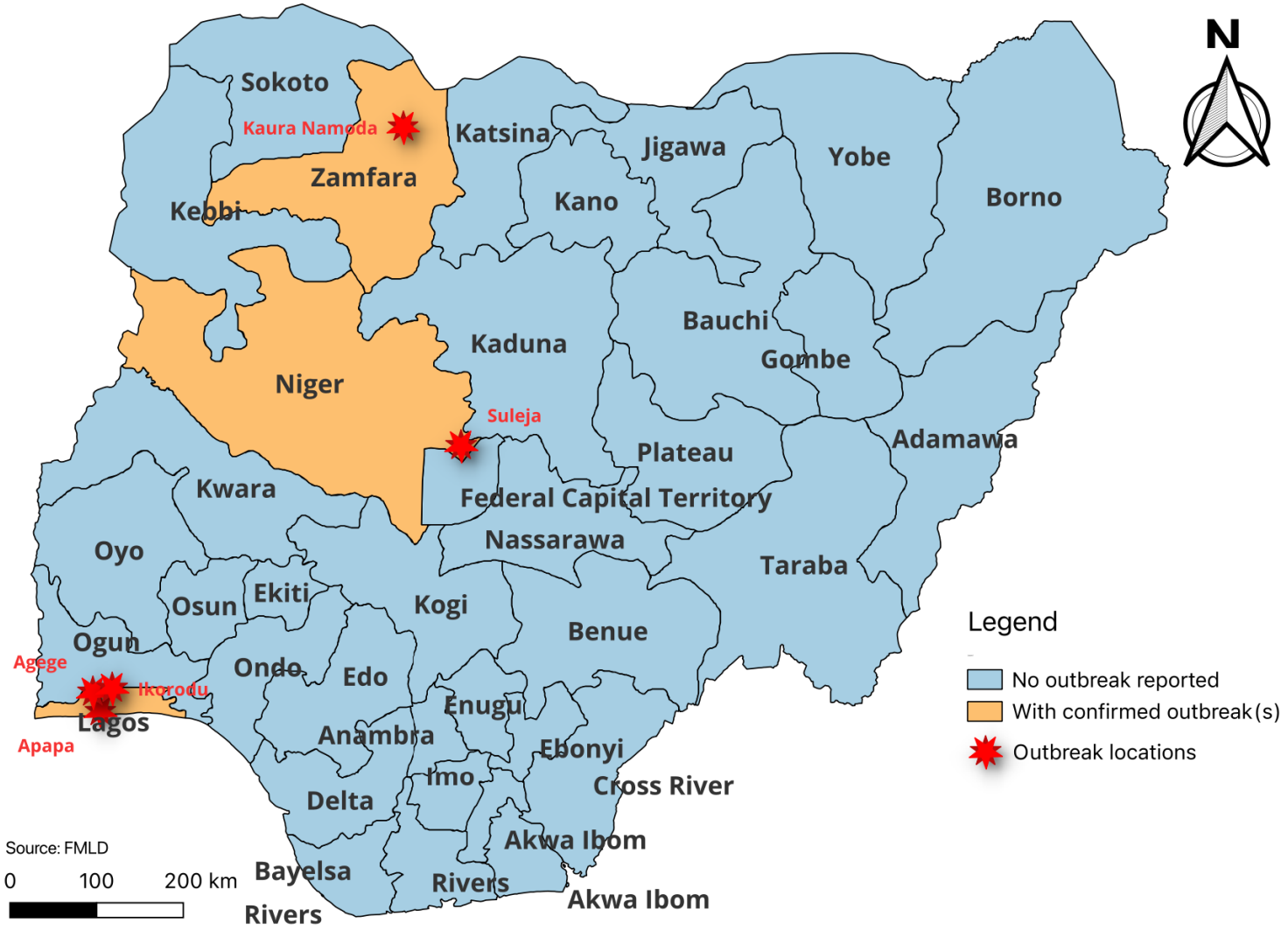
Background Contd...

- WOAH classifies anthrax as a priority transboundary animal disease and potential biothreat
- The U.S. CDC classifies Bacillus anthracis as a Category A bioterrorism agent: the highest threat level
- The last reported outbreak on anthrax in Nigeria was in 2004

Methods

- **Study Design:**
  A mixed-methods outbreak analysis combining quantitative epidemiological review and qualitative policy evaluation
- **Data Sources:**
  Extracted data from surveillance and field investigation records (July 2023–Jan 2025)
- **Analytical Approach:**
  Quantitative: Descriptive analysis of case distribution, and case fatality rate
- **Framework Applied:**
  Findings interpreted using the One Health Systems Resilience and Biosecurity Framework, aligning with WOAH's 2025 Biological Threat Reduction priorities

2023 - 2025 outbreak locations in Nigeria



Outbreak Figures of the Anthrax Outbreaks in Nigeria: 2023-2025

2004

First occurrence of the disease in the country

2023

- **Niger (1): July 16**
  - Index case – farm
  - 35 cases, 23 deaths
- **Lagos (2): July 25**
  - Abattoir: 3 cases
  - Farm: 10 cases, 9 deaths

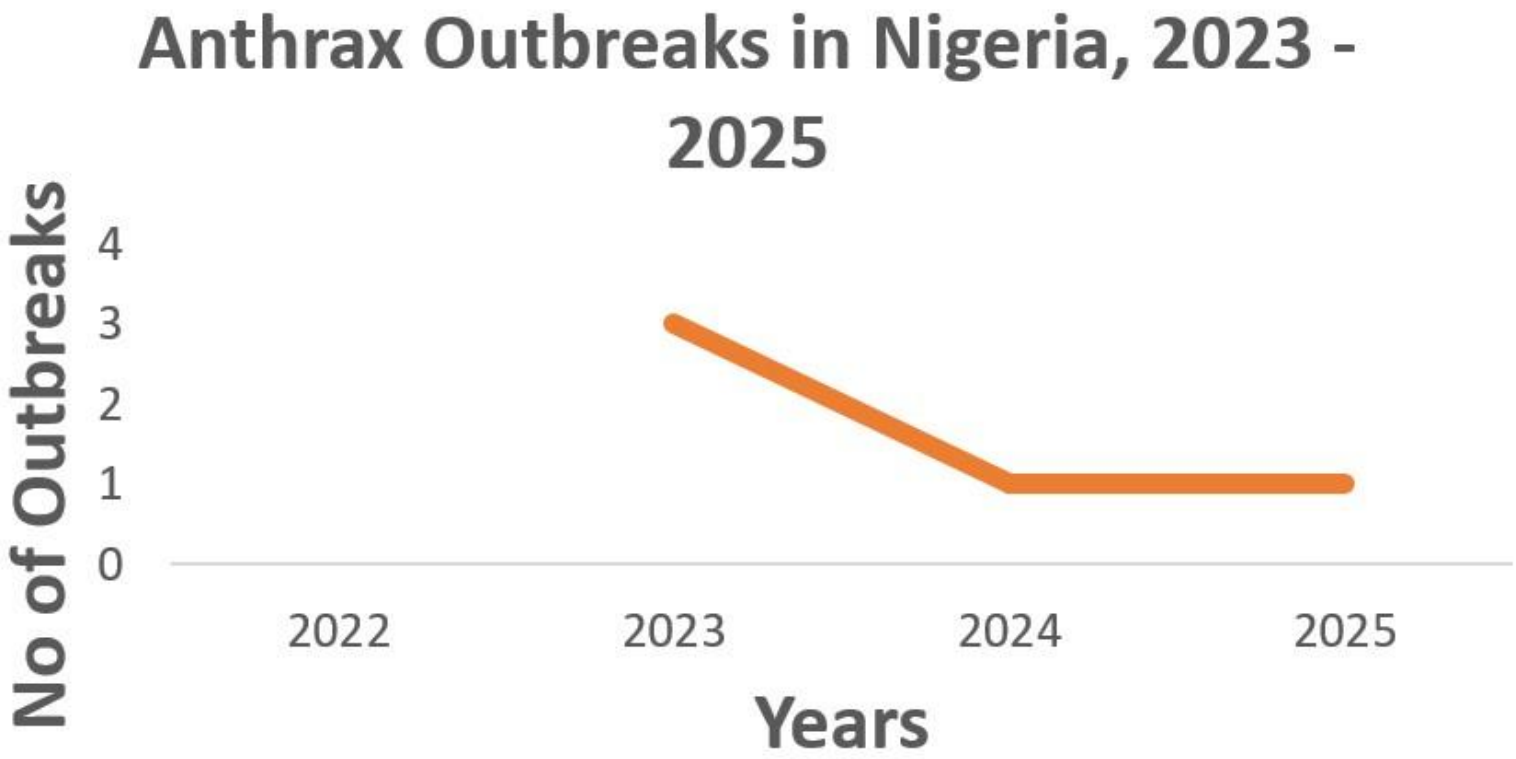
2024

- **Lagos (1): Jan 17**
  - Farm: 5 cases, 4 deaths

2025

- **Zamfara (1): Jan 9**
  - Farm: 1 case, 1 death

Decline in the outbreak figure per year (2023 - 2025)



Outbreak Response

Immediate actions taken

1

National Technical Working Group (One Health) and Emergency Operations Centres Established

2

Prompt outbreak investigation initiated.

3

Promoted safe carcass disposal and early reporting

Risk Communication & Community Engagement

1

Campaigns targeted at pastoralists, abattoirs, and livestock/bushmeat markets

2

Production and distribution of Social Behavioral Change (SBC) materials in all states of Federation

3

Strengthen surveillance and disease reporting at control posts

Cross-border collaborative efforts

- Data sharing with neighboring countries before and after the outbreak
  - NVRI proactively commenced the production of vaccines when Mali ordered for vaccines around March/April
  - Nigeria and Ghana engaged in virtual meetings and data/information sharing before the Nigerian outbreak

Ring Vaccination: Purchase of 14M Doses of anthrax Vaccines

- Team supporting Lagos State during the risk-based vaccination campaign

Flag-off of the risk-based ring vaccination in Suleja, Niger State

One Health Collaboration

Veterinary, human, and environmental sectors collaborated effectively

Sensitizations at the human health facilities

Sensitization of health care workers for ease of human case detection

Collaboration with Private Veterinarians

Private veterinarians contributed to diagnostics and response

- Stakeholders sensitization in collaboration with Private Ve
- terinarians

Key outcomes

- Early reporting of suspicions enhanced
- Early detection of more cases through heightened passive & active surveillance
- Enhanced laboratory confirmation capacity via PCR-based diagnostics
- Effective containment and control of the outbreak: no spill over case reported

Lessons learned

Effective risk communication and awareness drive early detection and outbreak control

Outbreak revealed gaps in coordination between public and private sectors

Policy gaps persist in vaccine stockpiling and livestock movement control

Challenges Identified

In spite of the existing policy, enforcement remains a challenge

Inadequate vaccine and cold chain infrastructure

Limited biosafety awareness observed among field responders

Challenges Identified (Contd...)

Resource limitations/Emergency contingency fund

Challenges posed by hard-to-reach/security compromised areas

Cross-border animal movement control was challenging

Recommendations

- Support for the Development of a Livestock Vaccination Policy for high-risk areas(National and Regional)
- Strengthen risk communication and multilateral collaboration
- Adopt event-based surveillance (EBS) in pastoral corridors
- Enhance border biosecurity with trained veterinary and para-veterinary officers
- Cross border collaborations should be strengthened
- Need for a policy on compensation of affected livestock farmers in the face of an anthrax disease outbreak

Implications for Biological Threat Reduction

- Recurring zoonotic outbreaks reveal the strength or weakness of a country to manage biological threats effectively
- One Health surveillance requires sustained investment in infrastructure, data integration, and workforce development.
- A coordinated One Health approach is vital to control outbreaks and reduce biological threats
- Anthrax re-emergence underscores the need to align national biodefense and health security systems with regional and global standard

Conclusions

- Nigeria’s anthrax re-emergence highlights the need for stronger One Health surveillance and coordination
- Policy-driven preparedness and sustained vaccination are vital for threat reduction
- Improved diagnostics and reporting enhance early detection and rapid response
- Building resilient One Health systems is key to long-term biological threat reduction

In protecting against biological threats, our greatest weapon is not technology, but cooperation

Acknowledgment

- Federal Ministry of Livestock Development (FMLD and NVRI
- Federal Ministry of Environment
- Federal Ministry of Health and Social welfare (NCDC)
- WOAH, WHO, FAO and other partners

World Organisation for Animal Health

Thank you

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The event is supported by funding from:

In partnership with Canada

Co-funded by the European Union

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
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UK Government