Systematic Review on Lassa Fever Vaccine Development Efforts in Africa – 2020 to 2024

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Background

- Lassa fever's recurrent outbreaks and WHO priority status emphasizes the critical need for a licensed vaccine, which remains absent despite several candidates in development.
- West Africa records an estimated annual infection of 100,000 to 300,000 and 5,000 death.
- This review evaluates a five-year(2020-2024) landscape, synthesizing current efforts and gaps to guide future investment, with a specific focus on ensuring African leadership and inclusion in the research and development process

Methods

Literature Search (2020-2024)
- PubMed
- Scopus
- Web of Science
- ClinicalTrials.gov
- WHO Clinical Trials Registry
- AJOL (African Journals Online)

Targeted Keywords
"Lassa fever" AND: "vaccine development", "WHO R&D", "Clinical trials", "Africa", "regulatory challenges"

Inclusion Criteria
- Preclinical or clinical studies
- Involvement of African populations or institutions

Exclusion Criteria
- Research unrelated to vaccine development
- Studies on non-African populations
- Non-English articles(Limitation)

Data Extraction
- Vaccine platform types (e.g., viral vector, DNA)
- Clinical trial phases
- African country participation
- Funding sources and partnerships
- Reported outcomes and challenges

- Review process guided by the PRISMA framework
- Descriptive analysis used to summarize findings and assess the vaccine development landscape in Africa

Results

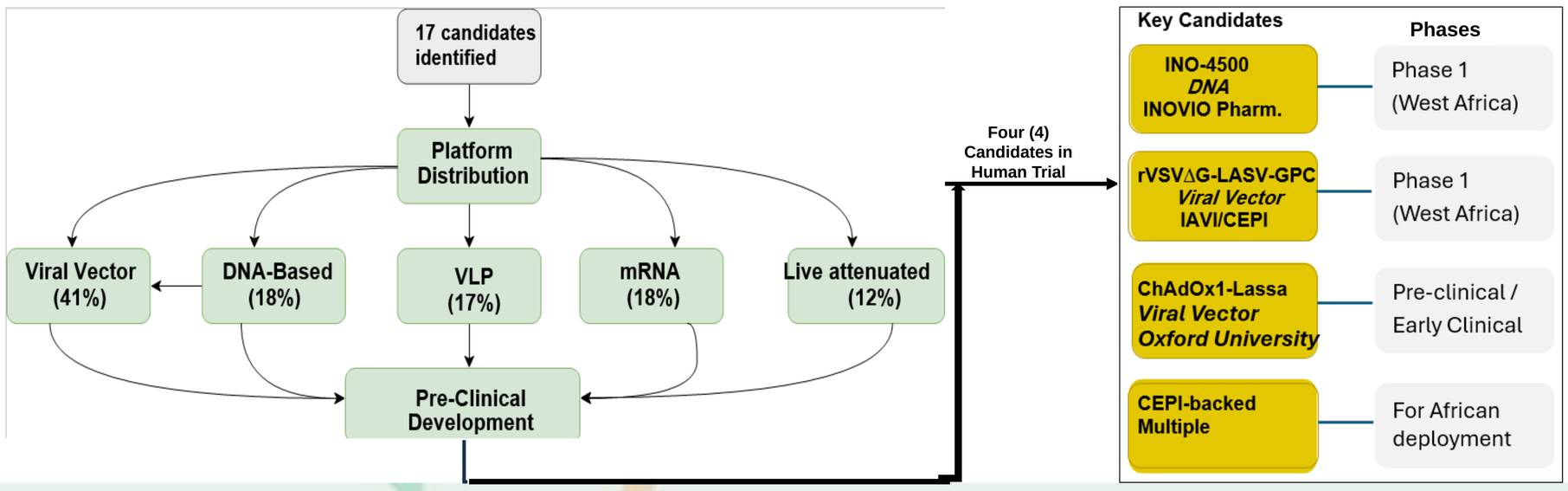
Study Selection

Records identified through database searching: (n = 1,254)

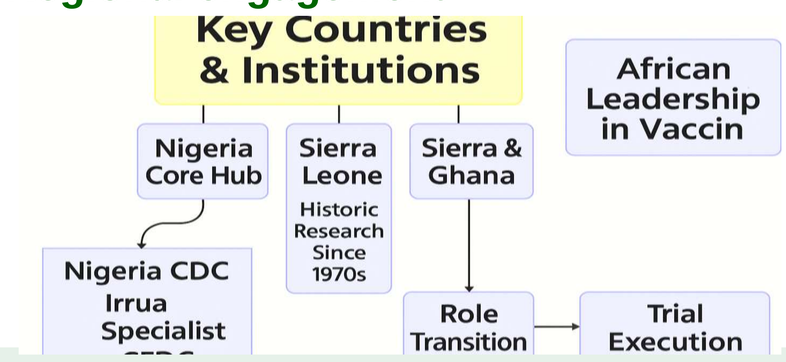
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Qualitative studies (n =30) included in the systematic review

Vaccine Candidates and Platforms(17) identified and Key candidates for human trials



Regional engagement



Challenges
- Regulatory and Infrastructure Gaps
- Financial and Sustainability Constraints
- Cultural perceptions and distrust
- Data Barriers

Strengths and Progress
- Strengthened international collaboration
- Global recognition and ethical commitment
- Improved regulatory support (AVAREF)

Conclusions and Recommendations

Conclusion
- Transformative progress (2020 – 2024)
- African institutions now leading mid-stage clinical trials in partnership with international developers.
- The focus shift from mere participation to ownership, capacity building, and preparedness for access.

Recommendations
- Enhance Regulatory Frameworks
- Increase Funding and Domestic Ownership
- Strengthen Community Engagement and Trust Building
- Strengthen African Research Capacity

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