



GOVERNMENT OF SIERRA LEONE
NATIONAL PUBLIC HEALTH AGENCY
(NPHA)



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Strengthening Public Health Laboratories in Sierra Leone: A Call to Action to Stop Epidemics at the Source

The Challenge:

Epidemic outbreaks pose a constant threat to Sierra Leone's public health. Our current public health laboratory infrastructure limits our ability to effectively safeguard the health of our communities. The existing Central Public Health Reference Laboratory (CPHRL) at Lakka Lakka is currently hindered by dilapidated infrastructure, a lack of essential biosecurity (BSL-3), and equipment such as Polymerase Chain Reaction (PCR) machines and biosafety cabinets. This challenge limits the capacity of the lab to conduct essential tests for priority public health threats like measles, yellow fever, and polio. Consequently, we depend on analysis from neighboring countries like Côte d'Ivoire and Senegal, which can introduce delays that sometimes exceed 90 days. These delays are costly due to transportation and have severe public health consequences, such as increased hospitalizations and deaths during outbreaks. For instance, the identification of circulating vaccine-derived poliovirus type 2 in an environmental sample collected on January 5th, 2024, wasn't confirmed until March 8th, 2024, significantly hindering our ability to implement a timely response.

The Solution: A Multi-Pronged Approach to Building a Stronger Shield

The National Public Health Agency (NPHA) actively seeks support to strengthen the country's public health laboratories and safeguard public health. We propose a broad-based approach:

Establish a New Integrated Central Public Health Reference Laboratory (CPHRL) Under the One Health Platform: We aim to build a new, state-of-the-art central lab in Freetown with BSL-2 and 3 biocontainment capabilities and other essential equipment. This will enhance our diagnostic capacity to conduct critical tests and analysis in-country, significantly reduce turnaround time by 90%, and allow swift public health interventions (7 million USD).

Enhance Existing Regional Laboratories: We have developed a strategy to improve biosecurity standards at all five regional public health labs and acquire modern equipment to ensure swift response to public health threats. This will strengthen the regional testing capacities with robust laboratory networks through the hub and spoke model. An efficient sample referral system to move samples to the regional laboratories will further reduce turnaround time and ensure prompt detection and response to public health threats (2 million USD).

Invest in Advanced Diagnostic Training: Building laboratory personnel's capacity in advanced diagnostic techniques such as molecular diagnosis and sequencing is crucial for identifying different strains. This will also empower laboratory personnel to deliver faster and more accurate diagnoses (250,000 USD).



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Facilitate Mentorship Programs: We are exploring partnerships with international health organizations (WHO, US-CDC), regional laboratories (Institute Pasteur in Senegal and Ivory Coast), and educational institutions to support mentorship programs. This will provide ongoing guidance and knowledge transfer, enhancing our long-term capacity for disease detection and response and preparing us for international accreditation (100,000 USD).

The Estimated Cost: 9.4 Million USD

Conclusion:

Investing in these initiatives will directly contribute to a more robust public health system in Sierra Leone. Together, we can develop a network of laboratories equipped to stop epidemics at the source, safeguard the health of our communities, significantly reduce turnaround times for diagnoses, and ultimately save lives.

We urge you to join us in this critical endeavor. Your support will make a significant difference in protecting our nation's health.