

## **Concept Note: Neonatal Transport/ Movement Device for Ghana**

### **1. Introduction**

Neonatal mortality remains a significant public health challenge in Ghana, with many deaths occurring due to preventable causes such as hypothermia, respiratory distress, and infections during transit. A critical gap in the healthcare system is the lack of safe, efficient, and affordable transport systems for neonates, particularly in rural and underserved areas. This concept note proposes the development of a low-cost, portable, and easy-to-use neonatal transport device tailored to the specific needs of Ghana.

### **2. Problem Statement**

In Ghana, many neonates require urgent transfer from home or primary health centres to higher-level facilities for specialized care. However, the lack of appropriate transport equipment, poor road infrastructure, and long distances often result in poor outcomes. Existing neonatal transport solutions are either too expensive, unavailable, or unsuitable for Ghana's terrain and resource constraints. This gap contributes to the high neonatal mortality rate, which stands at approximately 25 deaths per 1,000 live births.

In the GWMH neonates are most often carried in the hand from one point to the other, even for procedures such as going for x-ray. Neonates who are referred into the facility are usually carried in the arms by relatives or caregivers. In view of the above, a consideration is made for a standardized carrier that will enhance safety, comfort, easy for use by care givers, compatible with medical equipment and easy to clean or disinfect to help improve health outcome of the newborn.

### **3. Objectives**

The primary objective of this project is to design and deploy a neonatal transport device that:

- Ensures the safety and stability of neonates during transit.
- Is affordable and accessible for low-resource settings in Ghana.
- Is lightweight, portable, and adaptable to various modes of transport (e.g., ambulances, taxi, saloon cars).

- Incorporates essential features such as temperature regulation, oxygen support, and infection control.

#### 4. Proposed Solution

The proposed device, tentatively named "**AdikieCare Ghana**," will be a compact, modular unit specifically designed for Ghanaian contexts. Key features include:

- **Thermoregulation:** Insulated walls and a heating element to prevent hypothermia.
- **Oxygen Support:** A simple, oxygen delivery system.
- **Infection Control:** Easy-to-clean surfaces and antimicrobial materials.
- **Monitoring:** Basic vital signs monitoring (e.g., heart rate, temperature).
- **Portability:** Lightweight design with handles and straps for easy carrying.
- **Durability:** Robust construction to withstand rough terrains and frequent use.

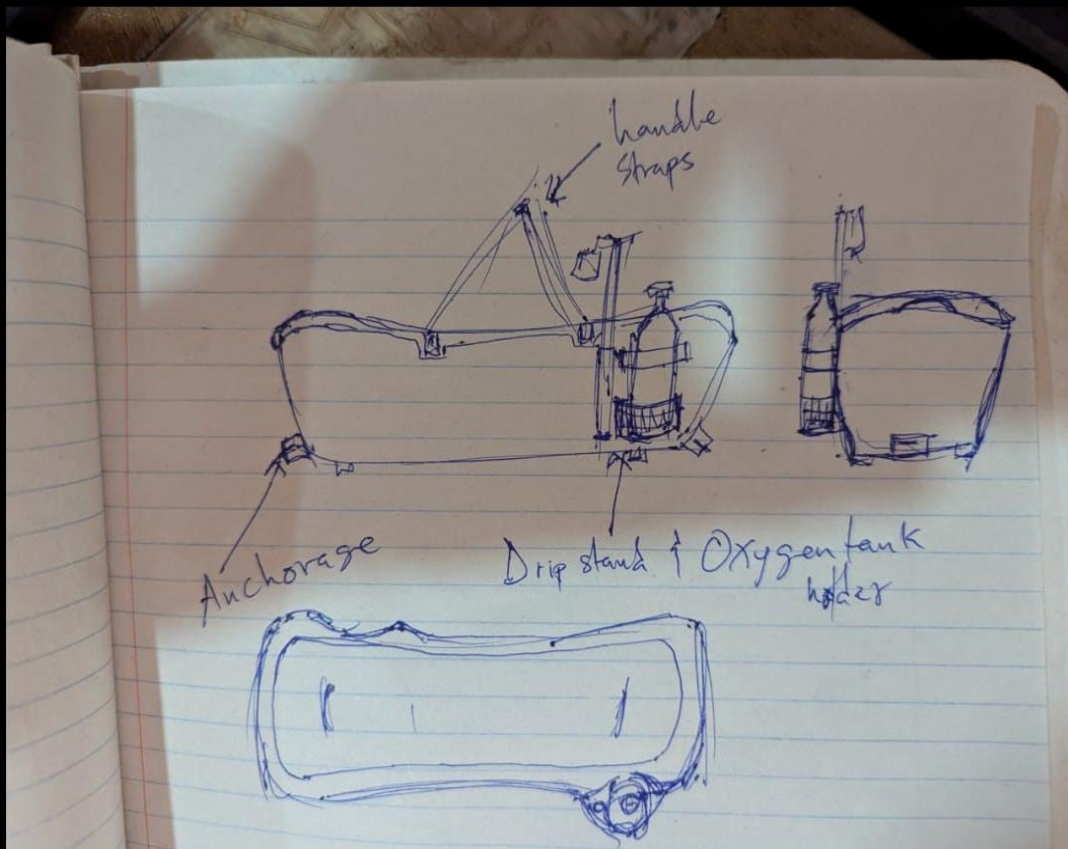
#### 5. Target Beneficiaries

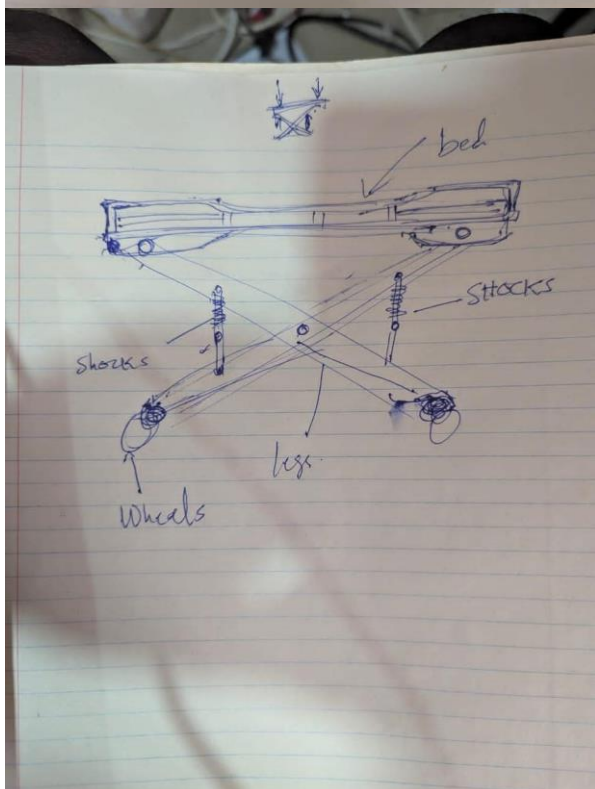
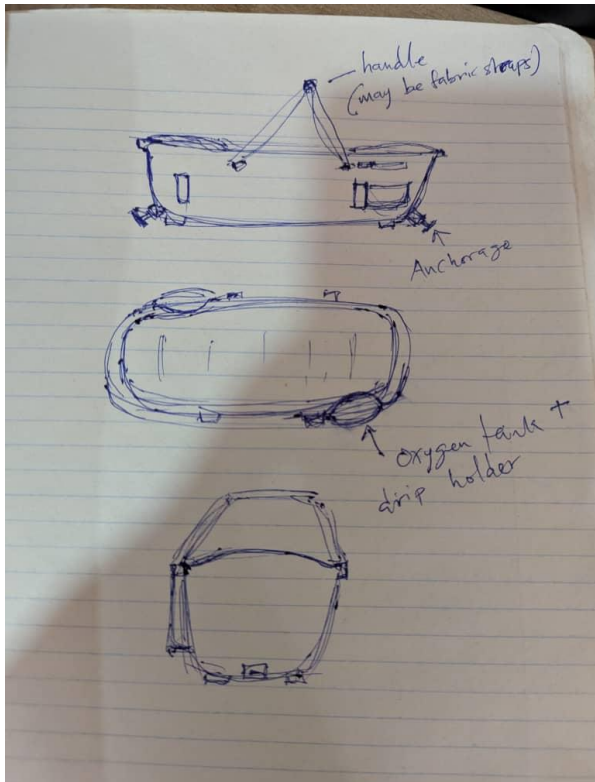
- Neonates requiring emergency transport in rural and urban Ghana.
- Healthcare workers, including midwives, nurses, and community health workers.
- Families in remote areas with limited access to healthcare facilities.

#### 6. Implementation Plan

- **Phase 1: Research and Development**  
Conduct needs assessments, engage with local healthcare providers, and prototype the device.
- **Phase 2: Pilot Testing**  
Deploy prototypes in select health facilities and communities (e.g. Kwame Anum, Kojo Ashong) to gather feedback and refine the design.
- **Phase 3: Production and Distribution**  
Partner with local manufacturers to produce the device at scale and distribute it through government and non-governmental channels.
- **Phase 4: Training and Awareness**  
Train healthcare workers and community members on the proper use of the device.

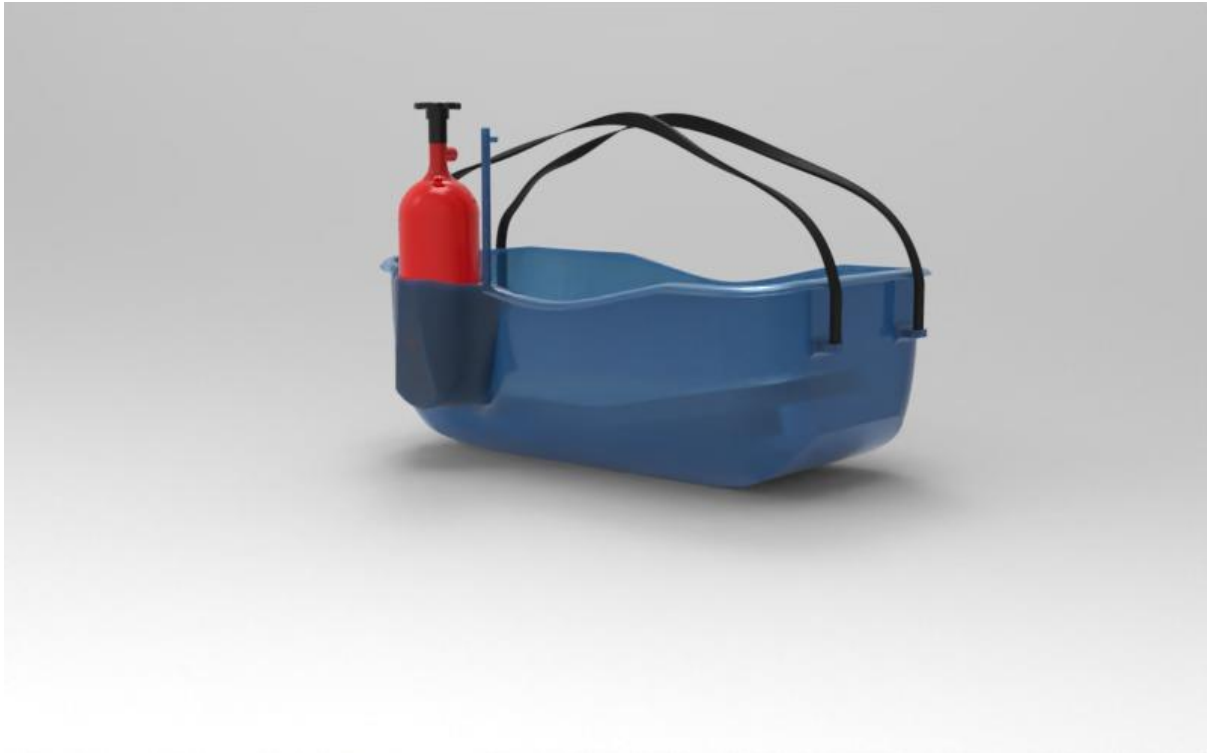
#### Prototype





### 3D Images





## **7. Expected Outcomes**

- Reduced neonatal mortality and morbidity during transport.
- Improved access to emergency neonatal care in rural and underserved areas.
- Enhanced capacity of healthcare workers to manage neonatal emergencies.
- Increased awareness of neonatal care best practices.

## **8. Sustainability**

The project will prioritize local manufacturing and community involvement to ensure affordability and long-term sustainability. Partnerships with the Ghana Health Service, NGOs, and international organizations will be sought to support scaling and maintenance.

## **9. Budget and Funding Requirements**

A detailed budget will be developed, covering research, prototyping, production, training, and distribution. Funding will be sought from grants, philanthropic organizations, and public-private partnerships.

## 10. Conclusion

The AdikieCare Ghana device has the potential to revolutionize neonatal care in Ghana by addressing a critical gap in transport infrastructure. By combining innovation, affordability, and adaptability, this solution can save countless lives and contribute to Ghana's efforts to achieve Sustainable Development Goal 3 (Good Health and Well-being).

### Next Steps:

- Secure funding for the initial research and development phase.
- Form partnerships with key stakeholders, including the Ghana Health Service, local manufacturers, and NGOs.
- Begin prototyping and testing in collaboration with local communities.

This concept note outlines a vision for a transformative solution to a pressing health challenge in Ghana. With the right support, the AdikieCare Ghana device can become a vital tool in the fight against neonatal mortality.

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