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Responding to the WHA 76.2 Call: Improving Access to Integrated Emergency, Critical and Operative Care (ECO) in Ethiopia through State-of-the-Art Innovations in Digital Technology

Fitsum Kifle[1*], Yared Boru[1,2], Binyam Kifleyohanes[1], Peniel Kenna[1,3], Gelila Mengistu[4,5] and Katie Iverson[6]

[1]*Department of Network for Perioperative and Critical Care, Addis Ababa, Ethiopia*

[2]*Department of Emergency Medicine and Critical Care, Alert Hospital, Addis Ababa, Ethiopia*

[3]*Department of Surgery and Anesthesia, College of Health Science, Defense University, Bishoftu, Ethiopia*

[4]*Department of Medical Services, Ministry of Health, Addis Ababa, Ethiopia*

[5]*Department of Emergency Preparedness and Response, WHO, Addis Ababa, Ethiopia*

[6]*Department of Surgery, University of Medical College of Wisconsin, Froedtert Hospital, Wisconsin, USA*

Introduction

The Seventy-Sixth World Health Assembly (WHA 76.2) has emphasized the need for global efforts to enhance Emergency, Critical, and Operative care (ECO) services as part of universal health coverage [1,2]. This call to action extends to member states urging them to prioritize the strengthening of their health systems based on their unique national contexts and priorities.

In the past Ethiopia, a low-income country located in East Africa, has made significant strides in improving access to primary and referral healthcare [3]. The government has implemented initiatives such as the health extension program, which has expanded access to essential medical services in rural areas. Ethiopia has recently demonstrated progress in improving surgical care through the establishment of specialized centers and increasing the number of healthcare professionals [4].

Despite the progress made, Ethiopia still faces several challenges in its healthcare system. These include gaps in emergency surgical capacity, limited private and public partnerships, inadequate disaster response systems, and insufficient critical care capacity [5,6]. Additionally, there is a need to increase the availability of surgical care to meet the needs of the country [4,7]. Hospital overcrowding and lack of throughput, in addition to unsatisfactory wages and job conditions for clinicians further compound these issues [8-10]. It is important to note that these challenges may not be due to a lack of resources, but rather a lack of coordination in identifying gaps, allocating resources appropriately, and monitoring progress. For instance, while there may be a considerable number of ambulances in the capital city of Addis Ababa, home to 5.5 million people, the accessibility and utilization of these services are limited. Currently, there is no organized system for requesting, dispatching, and receiving pre-hospital emergency services. This highlights the need for coordinated real-time innovations that leverage data and technology to improve the efficiency and accessibility of healthcare provision, including ambulance services. Addressing these challenges will not only align with the WHA 76.2 ECO resolution but also enhance the overall healthcare system in Ethiopia.

The Hospital Emergency Assistance and Response Tracking System (HEARTS) project is a locally designed project which stems from the recognition of these challenges faced by Ethiopia's healthcare system. HEARTS's, primary objective is to improve emergency response and patient care by enhancing communication and coordination among hospitals, emergency services, healthcare providers, and patients. The HEARTS project leverages cloud-based mobile web applications to streamline processes and enhance the effectiveness of emergency response systems. By placing the patient at the center of the target, HEARTS aims to ensure timely and appropriate care resulting in improved patient outcomes.

***Address for Correspondence:** Fitsum Kifle, Department of Network for Perioperative and Critical Care, Addis Ababa, Ethiopia, Tel: +251919829203; E-mail: fitsum@n4pcc.com.*

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Description

HEARTS: Project description, progress-to-date, and future plans

HEARTS is a web-based application that connects the user, or patient, with appropriate healthcare services during an emergency. For example, someone involved in or witness to a road traffic accident would open the HEARTS application on their phone, choose the closest or most appropriate hospital in the area and request an appropriate emergency transportation device. This is akin to the way one would request a ride-based application (RIDE, Uber, Lyft) for transportation. The user would then be contacted by the dispatch center to ensure the appropriate matching of transportation and hospital services. This would then allow for efficient and individualized pre-hospital emergency services to be coordinated in order to expedite care and optimize the patient's outcome.

The development of the HEARTS software components is completed, and the website design has reached its final stage. Additionally, the software and the overall design have obtained a copyright and neighboring rights registration certificate from the Ethiopian intellectual property authority. The software allows for the coordination of both private and public ambulance services, ensuring patients can receive assistance throughout the city and encouraging public-private partnership. One common challenge faced by ambulance providers is the difficulty of finding healthcare facilities that will accept their patients. However, with the HEARTS availability tracking and calling system, this issue can be addressed. The system enables efficient coordination and communication between ambulance providers and healthcare facilities, ensuring patients can be swiftly transported to suitable healthcare facilities, thereby reducing delays, and improving overall patient care (Figure 1).

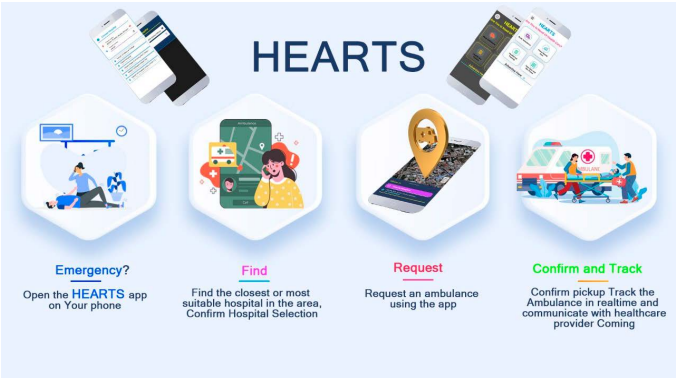

Figure 1. Process flow of HEARTS APP.

The app has several other capabilities outside of providing emergency services, including requesting home-based care, scheduling outpatient appointments, and accessing telemedicine. Upcoming features include enabling community-based healthcare surveys and conducting research aimed at improving healthcare outcomes. Furthermore, the team behind the app plans to integrate health insurance and payment systems, simplifying the process of accessing and paying for healthcare services. While the team acknowledges the importance of starting small in terms of functionality and geographic location, they have ambitious plans to rapidly scale the app beyond its initial launch in Addis Ababa to other cities and regions in the country. Ultimately, all these features will be available to users nationwide, revolutionizing the way healthcare is accessed and delivered.

Conclusion

The success of this project relies on the collaboration of various sectors, particularly the ministry of health, and international partners willing to support this initiative recognizing the potential of this innovation and technology in improving healthcare outcomes in Ethiopia and similar low-resource settings. By doing so, significant strides can be made towards achieving sustainable development goal 3, ensuring healthy lives, and promoting well-being for all ages, as well as sustainable development goal 11, making cities and human settlements inclusive, safe, resilient, and sustainable. Furthermore, implementing this project can be seen as a bold response to the global call for strengthening emergency, Critical, and Operative Care (ECO) services as part of universal health coverage, as outlined by WHA 76.2. It also has the potential to make Ethiopia a model country for other low-middle-income countries and the overall global community. Therefore, we urge all stakeholders to join hands and support these transformative endeavors, as it holds the key to a healthier and more sustainable future.

Contributorship Statement

FK contributed to the conceptualization, experimental design, methodology, project guidance, and drafting of the initial manuscript. YB played a role in experimental design and methodology description, manuscript preparation, and revision. BK provided technical support, helped with revision, and approved the final manuscript. PK contributed to experimental design, drafting, and manuscript revision. GM contributed to methodology design and provided guidance, supervision, and technical support. KI contributed to the literature review, adding context and references. They also edited and proofread the manuscript for clarity and coherence, providing technical support and advice. All authors have read and approved the final manuscript, ensuring its completeness and quality.

Competing Interest

No competing interest to declare.

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