

# RIDERS LIBERIA

EXPANDING HEALTH ACCESS WITH CONNECTED TRANSPORT SERVICES





"Aeris assisted our riders by providing GPS systems that were water proof. They walked us through their application till we became masters of it. We now know exactly how many kilometers our motorcycles travel, where the motorcycles have been, and what the drivers were up to. Their devices work in hard Liberian terrain and proved effective in areas where the network is poor and during the long and deplorable Liberia wet season. The key aspect is that all this is done at an affordable cost."

Kama Bakannah, Monitoring and Evaluation Coordinator, Riders Liberia

In the 15 years that have passed since Liberia emerged from a civil war, the country still is recovering from the near total destruction of its infrastructure. Roads need repairs, schools need upgrades, and the health system is



trying to recover from losing 242 of its 293 health facilities. Health care workers were slow to return after the war. leaving far too few doctors and nurses to serve the country's 4.85 million people. Adding to the healthcare situation is the fact that much of the country is rural, with few good roads, especially during the rainy season. Efforts to rebuild and re-populate health care facilities have been further depressed by low budgets, remote locations, and the challenges of allocating limited funds to competing priorities. This slow pace of rebuilding is similar to other countries attempting to recover from the damaging effects of war, compounded by challenging, often hostile geographies to overcome. The outbreak and rapid spread of the Ebola virus in 2014-2015 brought the health crisis in Liberia to the attention of health agencies worldwide.

Despite the availability of effective treatments for AIDS, TB, and other diseases in some parts of the world, many rural African patients are lacking access to these health options. This access gap exists largely because health workers in developing countries often struggle to reach infected individuals or villages. Many people are unaware of their infection or have limited access to care. Many more do not have the resources (financial or mobility) to gain access to the services they want and need. And many times, the country itself cannot handle either the requirements of a healthcare system or the financial burden of one.

## REMOTENESS AND ACCESS ARE THE PROBLEM

In rural Liberian counties, access to health care services average about seven miles away from many villages, with nearly 60% of the population living more than a two-hour walk from any clinic. Of these facilities, fewer than half have all of the five basic prerequisites of a clinic, which include a trained healthcare worker; basic infrastructure, as in electricity and a water pump; and basic equipment, such as stethoscopes and a refrigerator. To gain access to many basic services, such as disease testing or prescription fulfillment, many Liberians would have far to travel as no other available access to these services and treatments exist.

Even though Liberia is about the same size as Virginia (about 103K sq. kilometers), working in-country is a challenge under any circumstance. Much of Liberia is tropical rainforest, and its infrastructure still is underdeveloped. Mobility options change with the weather. There are many areas without reliable access to cellular connectivity. Furthermore, remote regions in Liberia have been at the epicenter of the Ebola virus and other disease outbreaks, such as tuberculosis (TB) and HIV, Lassa fever, malaria, measles, and yellow fever.

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## THE ADDED BURDEN

A major gap in health services in rural Africa is the almost total failure of ordinary transport. Without reliable transport for health services to reach outlying villages, for example, some bad things can happen. Children don't get immunized and suffer or die from elementary diseases that were controlled long ago in most of the developed world. Women fail to receive help or a facility is too far away, leading to increased maternal and / or child mortality rates, which are extremely high in Africa.

And testing for conditions such as Ebola, HIV/AIDS, and TB can take so long that many patients die before the result is even known, possibly infecting others while they wait, thereby contributing to the spread of contagious diseases.



#### Specimen Transport and Fleet Management: The Two Sides of Healthcare Delivery Services

To overcome some of the issues presented by remoteness and limited access, Riders Liberia runs a national medical transport service, using 74 motorbikes, 60 couriers, and five technicians, with 302 pick-up locations, thereby connecting all health care centers to the main laboratories in the country. The system transports an average of 3,500 samples per month, and peaked at more than 5,050 samples during the height of the Ebola outbreak (2014-2015).

### Specimen Transport

The Riders' mandate ensures that specimens collected from patients at health centers or clinics are transported to laboratories. The group's fleet of motorcycles, with specially trained drivers, transport samples in specially designed containers to laboratories. Once tests have been completed, the results then are sent from lab to clinic (via email or mobile phone) for follow-up with the patient. This process enables and supports faster diagnosis, specific resultoriented medical interventions, and the ongoing monitoring of rural patients.

### Fleet Management

To maintain health services. Riders Liberia also runs a related but independent project to address multiple transport challenges. This work involves fleet oversight for vehicle / motorcycle preventive maintenance, as well as transport management for entire fleets operated by organizations, such as the Liberian Ministry of Health, which, along with motorbikes, includes ambulances and trekking vehicles. Additionally, the Riders' program includes training in vehicle selection and usage, driver safety classes, and planning and budgeting for long-term, on-going success.

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## TRACK AND MONITOR: AERIS ENABLES SUCCESS

Riders Liberia had looked at several options to assist with its transport logistics, but the especially challenging nature of operating in Liberia precluded off-the-shelf solutions from being able to address their needs. Aeris' interest in social impact projects led it to work closely with Riders to implement a solution that met Riders specific needs and the challenges of operating in Liberia. For example, Aeris worked with Riders to ensure the tracking device selected would be able to withstand road dust, wet weather, streams, and a multitude of additional obstacles. Additionally, both the tracking device and service had to be affordable.



Aeris and the Riders team tested the Aeris Mobility Platform for more than a year and a half to ensure that it would be able to track Riders' motorcycles across Liberia's challenging geography. Aeris also has helped the Riders team to configure the system to ensure it met their needs, and has supported them with troubleshooting issues until the Riders team felt comfortable with the entire deployment.

The Aeris solution is uniquely optimized for a poor connectivity environment and includes sealed, weather-proof tracking devices that can withstand the transport hardships through tough, very often wet, terrain. Incorporating Aeris SIMs enables the tracking devices to connect through multiple carriers, improving the device's tracking capabilities. The Aeris solution facilitates predictable budget-reducing costs, enables more robust reporting to program sponsors and donors, and improves health outcomes as a result of a reliable transport system.

This IoT solution enabled the efficient utilization of Riders' resources as it provided healthcare services to approximately 80% of the population in Liberia and an early-warning system for disease outbreaks. This program also provided assurance to the Liberia Ministry of Health and international donors that funds were being used appropriately.

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"Aeris IoT has helped Riders for Health Liberia to effectively serve its mandate in transportation of reportable priority diseases under the Integrated Disease Surveillance and Response (IDSR) program in Liberia. The mere fact that we can see what the drivers are up to helps in improving their road safety by providing input into rider training. Also, seeing the assets reduces theft. We have not experienced any motorcycle theft since the Aeris partnership! Which is great!"

Ngwarati Mashonga, Program Supervisor and Executive Director



## IMPACT

As of September 2017, more than 50,000 samples had been transported by Riders, covering a total of more than three million kilometers (1.86 million miles). Before Riders, only 25% of samples in Liberia reached a laboratory within 24 hours. Today, that number has increased to almost 80%. Additionally, 90% of Liberian specimens, covering all 15 counties, now are transported to laboratories by motorcycle. The service enables rapid diagnosis and prompt medical intervention, thereby helping to reduce illness and epidemics. The Riders / Aeris collaboration will result in a fleet tracking system that further improves public health response in Liberia.

Today, Liberia's development and implementation of a comprehensive, flexible specimen transport system that can be fully integrated into Liberia's public health system provides hope and vision as a model for long-term success.

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#### ABOUT RIDERS FOR HEALTH LIBERIA:

Riders grew out of a humanitarian impulse from within the worldwide motorcycle community—as our name suggests.

The first Riders system was in place in Lesotho in 1991 by then mainly following the charity model, followed by social entrepreneur approach to national scale operations in Zimbabwe (1993, where systems were developed that are integral in replications that followed thereafter) and Nigeria (1999). Gambia (2002), Kenya (first 2003 and then 2007), return to Lesotho 2008, Malawi (2011) and, most recently, Liberia (2015) were added in turn. For more info, contact Riders at www.riderslr.org.

#### **ABOUT AERIS:**

Aeris is a pioneer and a leader in the market of the Internet of Things with a proven history of helping companies unlock value through connected technologies. We strive to fundamentally improve business performance by dramatically reducing costs, accelerating time-to-market, and enabling new revenue streams. Built from the ground up for IoT and road tested at scale, the Aeris Fusion IoT Network<sup>™</sup> and the Aeris Mobility Platform span the IoT technology stack—from global connectivity to application services.

Visit www.aeris.com or follow us on Twitter @AerisM2M to learn how we can inspire you to create new business models and to participate in the revolution of the Internet of Things.

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