



## Establishing a rural motorcycle ambulance referral service in Zambia

**Project Location:** Zambia - Muchinga, Northern and Luapula Provinces

**Project Start Date:** November 2016

**Project Duration:** Two weeks

### Introduction:

The Clinton Health Access Initiative (CHAI) in Zambia with funding from Swedish International Development Cooperation Agency (SIDA) is implementing a health system strengthening programme to reduce maternal and newborn mortality in 14 districts in Northern, Muchinga and Luapula provinces. The programme aims to strengthen four key health system weaknesses: the skills of providers through training and mentorship; the availability of equipment in facilities; the use of data to improve service delivery and the improvement of the referral system. The fourth strategy aims to expand and strengthen government systems by procuring and deploying motorcycle ambulances and Land Cruisers at the district level and facility level for the emergency transport of mothers and children from their communities to health facilities.

As of October 2016, CHAI had procured 28 eRanger motorcycle ambulances. Two eRangers have been deployed per target district. In addition, 17 Land Cruisers have been procured to support the mentorship activities and, in certain cases, to function as ambulances.

### Methodology:

In order to ensure that the vehicles were placed within a managed system, a four-day Transport Management System (TMS) training programme was delivered from 14th – 17th November with the support of Transaid. The training covered:

- Operational Management
- Financial Management
- Fleet Management (including planned preventative maintenance)
- Health and Safety
- Human Resources
- Key Performance Indicators (KPIs)

The participants included three CHAI Provincial Coordinators, three Ministry of Health Provincial HR Managers, 14 District representatives responsible for transport (in practise these individuals were either District HR Managers or District Clinical Officers) and the CHAI M&E Technical Advisor. It was also determined that the Ministry of Health drivers of the newly procured Land Cruisers should attend the training. At the start of the training, the participants were asked to explain their expectations. These expectations were grouped into the following themes:

- To be better able to manage transport in an efficient way and be accountable for managing transport

- To learn about vehicle and maintenance planning
- To develop an emergency transport system
- To develop a protocol for placement of the new eRangers

Throughout the training, the Transaid team taught the participants about a series of transport management tools which were provided in both, hard and soft copy to each of the trainees. These tools included:

- 4x4 Driving Basics
- 7 Day Transport Schedule
- Daily Defect Check Sheet
- Crash Incident Report
- District Operational Plan
- eRanger Monitoring Form
- eRanger Motorcycle Ambulance Guidelines
- eRanger Service Information
- Maintenance Summary Sheet
- Period Movement Schedule
- Period Transport Report – KPIs
- Period Transport Report – Narrative
- Transport Management Manual Overview
- Vehicle Information Sheet
- Vehicle Inventory
- Vehicle Operator Record

The Transaid team also worked closely with CHAI to develop bespoke Monitoring, Evaluation and Learning (MEL) tools and approaches to support the programme.

### Outcomes:

To monitor the efficacy of the eRanger scheme, a series of options are open to CHAI and the Ministry of Health. Process indicators (such as TMS KPIs) were taught to the participants to assist reporting regarding the way in which vehicles are being managed. Output indicators will illustrate increases in facility-based delivery. Impact indicators such as improvements in health condition or reductions in maternal morbidity may be harder to execute and thus, were considered outside of scope for this assignment.

It was agreed that the District Transport Managers would utilise two tools to report data to the CHAI Provincial Coordinators on a monthly basis. These would be a Transport Management Reporting Tool and an eRanger Monitoring Tool. The Transport Management Reporting Tool is designed to enable calculation and presentation of the following Key Performance Indicators (KPIs):

- **Distance travelled (Km)** - To determine the average, minimum and maximum distances travelled by the eRanger
- **Fuel Consumption (Kms per Litre)** - To monitor the amount of fuel used by the vehicle and to determine the running cost per km (see below). This KPI is calculated by dividing the distance travelled over a specific period by the fuel consumed during that same period.

- **Running Cost per km (ZMK per km)** - This calculation reflects the cost of fuel and maintenance divided by the distance that the eRanger has travelled. The resulting figure reflects the overall cost (excluding depreciation) of operating the e-Ranger and allows for the determination of cost per trip information.
- **Availability (%)** - This is a measure of the proportion of time which the eRanger is available i.e. not in the garage or awaiting repairs.
- **Utilisation (%)** - This is a measure of the proportion of the time which the eRanger was available (see the KPI above) and was being utilised. Depending on the requirements of the operation this measure can be calculated based on utilised hours, half days or days for different levels of granularity.
- **Needs satisfaction (%)** - This is a measure of the percentage of instances, when the eRanger was required for a legitimate need, and was able to go and pick up the patient. It gives a measure of the extent to which the vehicle is meeting the needs of the health service and an indicator of whether more vehicles are required.
- **Safety (Number.)** - A measure of the number of road traffic crashes or near misses which the vehicles are involved in during the course of a month.

An eRanger monitoring form was designed to enable data collection relating to the efficacy of the eRanger system in terms of its contribution to improving maternal and neonatal health outcomes. The eRanger monitoring form is designed to capture community to facility transfers, inter-facility transfers, and the number of fresh stillbirths or neonatal deaths that occur, after mothers have been transported by eRanger. The eRanger monitoring form requires data to be collected from facility referral logbooks, in-patient records and delivery logbooks.

#### Placement of eRangers:

To increase the effectiveness of the eRangers, and to maximise the number of women with access to the service, careful consideration needed to be given to the location in which each eRanger is based. It was jointly decided that the placement of the eRangers should firstly maximise the opportunity to undertake referrals from facilities offering basic Emergency Obstetric and Neonatal Care (EmONC) to facilities offering comprehensive EmONC services. Secondly, the e-Rangers should transport pregnant women from large rural catchment areas to delivery at facilities with life-saving EmONC services. A final priority is to maximise the size of the population living in rural communities that can benefit from the use of the eRanger. During the TMS training, the attendees were asked to develop a series of criteria to be considered when placement of the eRanger was being decided. Each district then completed an operational plan which was designed to respond to these criteria. The operational plans were then reviewed and critiqued by the attendees. The plans included the following questions:

- Where will the eRanger be located?
- Is this a CHAI supported facility?
- How many skilled health workers are at this location?
- What is the maternal and newborn mortality rate in this location?
- What is the institutional delivery rate in this location?
- What is the skilled delivery rate in this location?
- How is the terrain in this location during the dry season (rivers, escarpments, road condition etc.)?
- How is the terrain in this location during the rainy season?
- What is the communications network like in this location?
- What kind of distances do you expect the e-Ranger to travel if based at this location?

- Who do you envisage will ride the e-Rangers (at least two riders should be trained for each eRanger?)
- What types of cases will you use the e-Ranger for?
- How many referrals do you expect the e-Ranger to undertake each week?
- Will you collect people from communities or just conduct inter-facility referrals?
- Are there any security concerns? What community structures will you use to ensure that calls are legitimate i.e. Neighbourhood Health Committees, Safe Motherhood Action Groups?

**Conclusion:** While it is too early to understand the impact of the newly established system, the process of training and the development of the 14 district operational plans provides some confidence that firstly the capacity of the districts to manage their emergency transport system has been increased and secondly that the placement and utilisation of the eRangers will serve as many target beneficiaries as feasibly possible.

**Tools Utilised:** Transaid Transport Management Manual

**Partners:** CHAI, District Health Management Teams, Provincial Health Management Teams

#### About Transaid:

Transaid is an international UK development charity that aims to reduce poverty and improve livelihoods across Africa and the developing world through creating better transport. Transaid was founded by Save the Children and the Chartered Institute of Logistics and Transport. Our Patron is HRH The Princess Royal. Transaid specializes in the following:

- Building the capacity of public health authorities to provide effective, safe and cost efficient transport management systems to promote equitable access to primary health care services.
- Developing and improving logistics and supply chain systems to enhance the delivery of medicines, equipment and relief services to vulnerable communities.
- Promoting effective partnerships to support and enhance community participation in developing sustainable transport solutions in rural areas.
- Developing and delivering transport and logistics training and qualifications for public and private sector operators.

Transaid has the capacity and reach to lead projects throughout the developing world, but is equally capable of providing niche technical assistance to large scale health systems strengthening projects. Transaid maintains strong relationships with a number of leading international organizations including donor agencies such as DfID, DANIDA and USAID, and implementing organizations such as Health Partners International, Options Consulting, John Snow Inc. and Management Sciences for Health.

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