

Making the critical connection - Zambulance

Late Saturday on April 24, 2010 in Siachobe village, Zambia, a five year old boy fell ill with fever, headache and chills. The boy's parents cared for him through the night, hoping he would improve, but by Sunday morning his condition worsened. The parents carried the boy to the community health worker (CHW), the only health care provider who lived in the immediate vicinity. Even as the CHW was examining the child, the boy went into convulsions. Soon he began to vomit and convulse even more. Recognizing the danger sign, the CHW suggested that he should be immediately taken to the hospital. The family lived 12km from Popota Rural Health Centre in Choma District, Southern Province. Siachobe was not connected to the main road and rarely if ever a car passed by. It would be difficult for the parents to secure his seizing body to the back of a bicycle. Besides, being a Sunday morning and everyone attending church; the family was unable to locate an ox-cart to take the child to hospital.

Imagine what it would mean for parents of this boy to find transport to the clinic in time or risk losing their child's life. It is experiences like these that led to the introduction of Zambulance – a community based bicycle ambulance system that transports very sick patients to the next referral level. For parents from Siachobe village, men, women and children with critical conditions, the zambulance has proved to be the

difference between life and death. The Zambulance departed Siachobe at 10:25am on April 25th, 2010. The boy did, in fact, convulse en-route, but as he was being carried by the Zambulance, the journey did not have to stop. It reached Popota clinic 75 minutes later, at 11:40am, in half the time it would have taken either on foot or by ox-cart. The child was given malaria drugs and recovered.

In the words of Siachobe community health worker and Zambulance driver, Reeves Mandalela: "We reached in time, thank God."

In southern and eastern parts of Zambia, many such episodes have had a happy ending, in fact nearly one hundred of them with conditions ranging from malaria to HIV, dysentery to obstetric emergencies. Severe malaria and pregnancy complications have been the major ones transported. So, what exactly are Zambulances and how are they helping people in rural Zambia, where like in other developing settings, distance to health centre and transport costs are critical barriers for better utilization of health services?

Zambulances are bike ambulances that consist of a locally-manufactured, sturdy bicycle that come attached to a trailer bed. The trailer bed comes with a foam, vinyl-covered mattress for comfort and a canopy to protect the privacy of patients, like women in labour.



Figure 1: Ox sledge taking patient to health centre in Matua, Siavonga District, Southern Province



Figure 2: Loading an ill patient in Zambulance during training and distribution in Choma, Southern Province

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The Ministry of Health (MoH) and a number of NGOs and donors have recognized the need to provide transport at the community level and have begun placing bicycle ambulances at health facilities to assist with patient transport to higher levels of referral. Built by a local NGO, Zambikes, they are delivered alongside basic bicycle maintenance instruction and standardized log books. The log books and diaries have been designed to track patients from target CHW villoges to the Rural Health Centre in order to assess which health problems they are most likely used, as well as estimate the effect on prompt referral and treatment of health emergencies.

In order to better reach rural populations, community health workers (CHWs) were identified as a first-line of care in the National Health Strategy 2006-2011. CHWs, however, are vested with limited ability to treat patients and especially in the case of life-threatening illnesses where they are instructed to refer patients to rural health centres (RHCs) for higher-level

care. In spite of national commitment to community-based care, failure to find and/or afford transport to RHCs remains an important contributing factor to deaths in rural Zambia.

With National Malaria Control Centre (NMCC) support, and as part of its health systems strengthening efforts under the Irish-Aid funded Clover project, Malaria Consortium placed 57 Zambulances at the community level in the target districts of Southern (33 bikes) and Eastern Province (24 bikes), each costing about USD 600.

This pilot project marks the first time in Zambia that an organization has attempted to improve emergency transport links between communities and the primary health centres.

Malaria Consortium was particularly interested in improving adherence to Ministry of Health National Malaria Guidelines which recommend that suspected malaria be treated within 24

hours of onset of symptoms which are frequently undermined by long distances and transport costs to patients' families. Malaria Consortium also hoped that Zambulances would improve non-malaria outcomes, especially those related to maternal and child health (MCH).

Three CHWs were selected per district to receive a Zambulance in their communities. The CHWs were identified by DHMTs according to "activity" level, distance to health centre, and ability to ride a Zambulance and transport patients.

Topics covered in the orientation included basic bike repair and management, patient loading, log book record keeping and introduction of Zambulances to the community. Emphasis in the trainings was on use of Zambulances for emergency situations, in order to preserve the condition of the bicycle for as long as possible.

Fast facts:

- Over 100 emergency cases successfully transported to referral hospitals
- 57 zambulances deployed in Southern and Eastern province
- Log books and diaries designed by Clover to track use and type of cases