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### ***Simple ICTs reduce maternal mortality in rural Uganda.***

## **A telemedicine case study**

Von Maria G. N. Musoke

*The Rural Extended Services and Care for Ultimate Emergency Relief (RESCUER) project was launched in March 1996, on a pilot basis, in Iganga district in Eastern Uganda. The project helped empower a network of Traditional Birth Attendants to partner with the public health service centers to deliver health care to pregnant women. This resulted in increased and more timely patient referrals as well as the delivery of health care to a larger number of pregnant women.*

A study was carried out in July 1999 to investigate the effect of ICT on maternal health care in the project area, but specifically to find out the role and contribution of the communication component to the referral project. Midwives in primary level referral health units and in the secondary or district referral hospital, project administrators, Traditional Birth Attendants (TBAs) and some women beneficiaries were interviewed using an open ended interview schedule which produced rich qualitative data.

For various reasons, the VHF radio was the type of ICT selected to be used in the project. This included fixed base stations at the health units, mobile walkie talkies with the TBAs, and vehicle radios in the referral hospital ambulance and the District Medical Officer's vehicle. The VHF radio is solar powered, hence avoiding the common electric power shortage or surge problems.

The RESCUER project was designed to link up rural community health providers with the formal health system in a cost effective way, such that when an obstetric emergency occurs in a village, a TBA uses a walkie talkie to call for assistance from the nearest health unit. Advice on what to do is immediately relayed over the radio system. If the TBA can not manage the case, transport is dispatched from the health unit with a midwife to collect the patient. If a case can not be managed at the health centre level, the hospital is called and an ambulance is sent to transport the patient to the referral hospital.

## **Project results**

To the TBAs, the walkie talkie technology was a great source of empowerment as it improved their image and credibility thus increasing compliance with referral advice, and also facilitated their work by increasing the number of women they attended to.

To the rural midwives, the communication technology brought them closer to each other thereby overcoming isolation and effecting speedy consultation.

To the referral hospital, communication was reported to have made the work of midwives easier as they were able to know in advance and to prepare for emergencies; and to the women, communication gave them hope in critical situations.

The increased number of deliveries under trained personnel and increased referrals to health units led to a reduction in maternal mortality from 500 per 100,000 in 1996 to 271 in 1999. The RESCUER project therefore caused a change in the health seeking behaviour and reproductive outcomes in its pilot phase, which led to its expansion to other districts.

The study found out that the communication component made a significant contribution to the success of the project. However, for the project to achieve its objectives of improved referrals leading to increased deliveries by trained personnel, the communication component could not stand on its own; the other two components were important too. When transport broke down, however, it was reported that the presence of a midwife and the communication system played a big role in saving lives because the TBA or the midwife was able to radio call and consult colleagues or seniors.

## Lessons learned

Distribution of walkie talkies leaving some areas without. More funds would be required to increase the number of walkie talkies per district so that every parish gets at least two.

There was also need to install repeater stations or radio sub centres in areas where the walkie talkies can not pick existing centres. The tricycle vehicles were not strong enough to manage rural roads, and hence broke down frequently; stronger vehicles would be required.

This project also showed that there is a need for Sub Saharan Africa to adopt a multi technology approach in health to cater for different capabilities in African situations. For example, telemedicine and other high technology can be adopted at the district hospital, while simple technologies like radio can serve lower levels i.e. rural health units, TBAs, etc. The consultations made by lower units to the district hospital would ensure that they benefit from high technology.

Uganda's economy is predominantly agriculture based, and women constitute 60 - 80% of the labour force in agriculture. Hence, women's health in Uganda has vital social and economic implications to the nation. However, among the Ugandan women of reproductive age (who also form the productive sector), maternal health problems have been reported as one of the major causes of death. A project, such as RESCUER, that has reduced maternal deaths by about half in three years means a lot to the socio-economic development of Uganda. This

project should indeed be replicated in other districts in Uganda, as well as other countries with problems of high maternal mortality and poor referral systems. Donors should therefore join UNFPA to fund this worthy project.

*\*Report by Maria G. N. Musoke, Makerere University, Kampala Uganda, in: infoDev / iicd ICT Stories database (2001), [www.iicd.org/base/story\\_read\\_all?id=47](http://www.iicd.org/base/story_read_all?id=47), slightly adapted. See also World Bank IK Notes No. 40, January 2002, by the same Author, [www.worldbank.org/afr/ik/iknt40.pdf](http://www.worldbank.org/afr/ik/iknt40.pdf).*



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