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SPECIAL ARTICLE

Results from 2011 for the transport*MY*patient program for overcoming transport costs among women seeking treatment for obstetric fistula in Tanzania

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ABSTRACT

Background: The Comprehensive Community Based Rehabilitation in Tanzania (CCBRT) Disability Hospital program transport*MY*patient was launched in 2009 to address transport costs, which are a major barrier to patients accessing CCBRT health services. The initiative uses mobile phone technology to transfer funds to cover transport costs. *Methods:* Data were reviewed for fistula patients using the transport*MY*patient scheme in 2011, noting region of referral. Average costs of using the scheme were calculated and the location of "ambassadors" by region was recorded. *Results:* Between 2005 and 2009, CCBRT repaired approximately 170 fistulas annually, increasing to 286 in 2010 and 339 in 2011. In 2011, the transport*MY*patient initiative transported 166 fistula patients from almost all regions in Tanzania, accounting for 49% of total repairs. *Conclusion:* The increase in referrals to CCBRT during 2011 as a result of the transport*MY*patient program shows that transport costs are a real barrier to accessing care. Analysis of geographic referral data informs outreach and community sensitization initiatives, concentrating on regions of low referral. The use of mobile phone technology to transfer funds represents an innovative means of overcoming a major barrier to healthcare access for patients in low-income countries.

1. Introduction

Obstetric fistula is caused by prolonged obstructed labor without prompt medical intervention and represents a near-miss maternal death [1]. Obstructed labor is one of the major causes of maternal death in Tanzania [2]. The underlying causes are related to poverty and lack of access to emergency obstetric care—in particular, cesarean delivery [3]—as well as lack of decision-making power; transport; trained, skilled personnel; and the necessary health facility infrastructure and referral systems.

In prolonged obstructed labor, the pressure of the fetal skull against the bones of the pelvis causes ischemic pressure necrosis of the intervening soft tissues, resulting in a hole (fistula) forming between the bladder and the vagina (vesicovaginal fistula) or between the rectum and the vagina (rectovaginal fistula). In addition to urine and/or fecal incontinence, most women with fistula also experience stillbirth [3–5]. Obstetric fistulas lead to chronic medical, social, and psychological morbidity unless the women reach a health facility for surgical repair and rehabilitation.

It is estimated that approximately 4 million women currently live with obstetric fistula and that a further 50 000–100 000 are newly affected each year [6]. In Tanzania, it has been estimated that there are between 1200 and 3000 new cases of obstetric fistula annually [4,7]. People with disabilities, including obstetric fistula, are among the poorest and most marginalized in the world. Transport costs may pose major barriers for patients accessing treatment [4], even if the health care itself is provided free of charge.

Tanzania is a large East African country of 365 900 square miles (945 087 km^2), divided into 26 regions in 2011, with an estimated population of 43.2 million. The size of the country means that women may have to travel large distances to reach a facility for fistula repair [7], with the costs of transport often prohibitive.

The Comprehensive Community Based Rehabilitation in Tanzania (CCBRT) Disability Hospital introduced the transport*MY*patient scheme at the end of 2009 to overcome the issue of travel costs [8]. Prompted by an article in *The Economist* highlighting the potential uses of mobile phone technology [9], the initiative uses mobile "banking" to address the logistics of fund distribution to cover transport costs for patients with identified conditions such as obstetric fistula.

Initial support by the UNFPA facilitated the building of an "ambassador" network, covered transport and treatment costs for women with fistula, and helped to develop hostel lodgings for patients

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awaiting surgery. The initiative was supported by both UNFPA and Vodacom Tanzania during 2011.

The ambassador network was established at the beginning of 2010 by a CCBRT outreach team identifying healthcare professionals, community workers, and non-governmental organization staff who could serve as case finders and refer patients to CCBRT for surgery.

*1.1. How the transport*MY*patient initiative works*

Having identified a potential fistula patient, the ambassador contacts the CCBRT coordinating office, where referrals are screened to ensure that symptoms are compatible with obstetric fistula.

Transport funds required to bring the patient to the Disability Hospital in Dar es Salaam are then transferred via Short Message Service from a CCBRT phone to the phone of the ambassador. The transfer uses Vodacom's M-PESA technology ("M" denotes mobile; "PESA" means money in Kiswahili). The ambassador collects cash from their local M-PESA agent (of which there are more than 6000 in Tanzania), buys the bus ticket, and ensures that the patient gets on the correct bus. Ambassadors receive an incentive of 10 000 Tanzanian shillings (TZS; equivalent to US $6 or €5) for each patient who arrives at CCBRT with the correct transport receipts. This covers their personal costs of getting to an M-PESA agent and dealing with the logistics of transport arrangements. Once the patient arrives in the central bus station in Dar es Salaam, she is transferred to the CCBRT Disability Hospital by hospital vehicle or taxi.

The original target for 2010 was to transport 60 patients to CCBRT via transport*MY*patient; the target for 2011 was to improve upon the 2010 figures.

2. Materials and methods

Data were collected and reviewed from an Excel (Microsoft, Redmond, WA, USA) spreadsheet detailing fistula patients using the transport*MY*patient scheme in 2011, noting the region of referral, the ambassador making the referral, the cost of the bus ticket, and other costs (ambassador incentive, and hospital vehicle or taxi for collection and transfer). Average costs of using the scheme were calculated and the location of ambassadors by region was recorded.

3. Results

3.1. Impact of the transport initiative

Between 2005 and 2009, CCBRT repaired approximately 170 fistulas annually. Following the launch of transport*MY*patient at the end of 2009, 129 obstetric fistula patients attended CCBRT via the initiative in 2010, increasing to 166 in 2011. This accounted for 45% of the total 286 fistula repairs in 2010 and 49% of 339 repairs in 2011. The number of fistula operations carried out in 2010 represented a 65% increase compared with the number in 2009; the number in 2011 represented a 27% increase compared with the number in 2010. Fig. 1 shows the impact of transport*MY*patient on the total number of fistula repairs performed by CCBRT from 2005 to 2011.

3.2. Region of referral and location of ambassadors

Fig. 2 shows the region of referral for fistula patients using the transport*MY*patient initiative during 2011. Of the 26 administrative regions in Tanzania in 2011, 1 comprises Dar es Salaam region, 3 are found on Zanzibar, and 2 are located on Pemba Island. Thus, patients were referred from 18 of the remaining 20 mainland regions in 2011 to the CCBRT Disability Hospital in Dar es Salaam for fistula repair. There were no referrals from Manyara, Kilimanjaro, Dar es Salaam, Zanzibar, or Pemba regions.

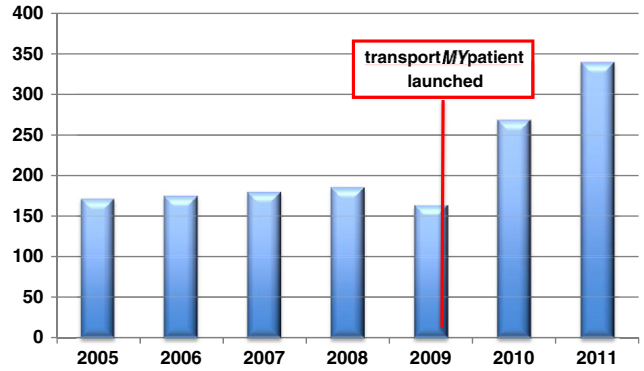

Fig. 1. Impact of the transport*MY*patient initiative on the total number of fistula repairs performed by CCBRT between 2005 and 2011.

By the end of 2011, 253 ambassadors had been recruited and were present in all regions, with the exception of Zanzibar. Fig. 3 shows the distribution of ambassadors at the end of 2011; some were recruited and trained toward the end of the year, so their effect on case finding may become evident only during 2012.

Broadly speaking, there were 4 patterns of ambassador density versus referral activity: regions with large numbers of ambassadors and large numbers of referrals; regions with lower numbers of ambassadors but good numbers referred; regions with ambassadors but few patients referred; and regions with low numbers of ambassadors and few referrals.

*3.3. Costs for transport*MY*patient*

Analysis of transport costs indicated that the average cost of 1-way patient transport to Dar es Salaam was 44 322 TZS ($28 or €22). When the ambassador incentive was added, together with taxi or hospital transport from the main bus station to the Disability Hospital and money for food on the journey, the travel costs increased to 74 322 TZS ($47 or €37).

4. Discussion

The transport*MY*patient initiative surpassed the initial target set for 2010, and there was a further increase (27%) in obstetric fistula referrals via the scheme in 2011. The numbers of patients using the scheme seem to account for the recent increase in referrals for fistula repair, indicating that transport funds are a real barrier to accessing care. The scheme depends not only on the availability of money to cover transport costs but also on identifying women with obstetric fistula via the ambassador network, in addition to the logistics of transferring funds effectively.

A strength of transport*MY*patient is the efficiency of money transfer, with the ambassador able to collect cash from an M-PESA agent within a short time of requesting transport costs. This requires a well-managed call center to ensure an efficient response, in addition to reconciliation of transport receipts to ensure accountability of transferred funds. CCBRT has a free number for the call center and is currently recruiting a second call center receptionist.

In 2011, patients were referred via the transport*MY*patient scheme from 18 of 20 mainland regions to the CCBRT Disability Hospital in Dar es Salaam for fistula repair. There were no referrals from Manyara, Kilimanjaro, Dar es Salaam, Zanzibar, or Pemba regions. It is likely that patients from the north of Tanzania were referred to Bugando Medical Centre in Mwanza, Kilimanjaro Christian Medical Centre in Moshi, and Selian Hospital near Arusha—all of which perform fistula repair. During 2012, discussions have been held to forge partnerships with the latter 2 hospitals, using the transport*MY*patient scheme to transport patients to their nearest center. The lack of referrals from Dar es