Improving Home Based Care Through Mobile Phones in Malawi

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Abstract: Most people struggling with AIDS in rural Malawi receive care at home by families or volunteers. Malawi’s health care system is inadequate and would struggle to cope if there is an increase in AIDS patients reaching hospitals. Improving home based care is therefore a viable option required to limit premature mortality for AIDS patients. The extensive coverage of mobile phone networks and the versatility of mobile phones provide an opportunity to strengthen referral system between health centres and care volunteers. The Evangelical Association of Malawi through its HIV/AIDS department supported by Tearfund UK is implementing a mobile phone pilot project aimed at improving home based care provided by volunteers in the southern part of Malawi. A mid term evaluation of the pilot reveals the need to take into account cultural and traditional realities in the community and need to be adaptable if dynamic opportunities of this technology are to be fully harnessed. This paper shares some of the findings.

1. Justification of the Project

The Evangelical Association of Malawi through its HIV/AIDS department supported by Tearfund UK is implementing a mobile phone pilot project aimed at improving home based care provided by volunteers in the southern part of Malawi. The pilot project was implemented against the following background. Malawi has been experiencing high rate of HIV/AIDS infection and prevalence now standing at 12.2%. Many rural people ill from AIDS often find hospitals are far and do not have enough doctors, nurses, beds and medicine. Home Based Care volunteers or family members provide the bulk of care for people living with AIDS. However, these primary care givers and community volunteers often lack the skills, and equipment to provide adequate care. In many cases volunteers walk long distances to take care of patients. Many volunteers are themselves poor and in many instances share the little they have with the PLWHA (People Living With HIV/AIDS). On the health delivery side, Malawi has seen a drain on its health professionals. Many rural hospitals lack adequate human resources and health outreach programmes have been curtailed due to limited resources. The scale of HIV/AIDS has put further strain on an ailing health delivery system.

Prior to the pilot, a feasibility study was carried out by Accenture Partnership Development in two potential sites served by Nkhoma hospital and St. Martin’s hospital. The study found that:

- The extensive coverage of mobile phone network was confirmed.
- Existing practices of community phones meant that there was a precedent in some remote parts of Malawi.
- Rural hospitals and health centre staff interviewed confirmed that lack of communication hampered referral systems especially in remote parts.
The overall study confirmed that the project was generally feasible but the following dependencies needed to be looked at: i. Community acceptance was critical especially of women using mobile phones; ii. improved mobile communication was not a silver bullet, it had to be implemented within a basket of other support to those requiring care; iii. favourable economic environment required to ensure financial viability of the project and promote motivation for care volunteers who themselves are poor.

The essence of the pilot was to see how in practice information and communication technology (ICT) could contribute to increasing the quality of service that health care workers and volunteers provide for people living with AIDS. It is posed that better equipping of the community volunteers with effective communication mode enables to access virtual support from trained staff and increase their capacity, improve the quality of community care and increase motivation through income generating capabilities.

2. Design of the Project

2.1 Objective of the Project

**Overall Goal of the pilot:** To contribute towards improving the level of home based care provided to poor families in rural Malawi.

**Specific pilot objective:** To successfully field test a 12-month mobile technology project as an effective means of strengthening referral system between rural home based care and health centers in two pilot areas of Malawi.

**The specific outcomes** are: a. Improved communication leading to improved quality of care for PLWHA; b. Financially sustain the volunteers’ use of mobile phone as an income generating activity; c. Mobile phone technological solution effectively reduces identified dependencies; d. Develop a video and print documentation for information share and recommendations for scale up after mid-term evaluation.

2.2 Project Implementation

The pilot was designed as follows:

Two mission hospitals (Nkhoma and St. Martin’s) serving rural communities were selected as key pilot areas. Each project area had two main sites and each main site consisting of 5 village sites. This brings the total village sites to 20. Each village site has 5 volunteer care givers (100 volunteers in total) and each care giver oversees 10 patients (totalling 1000 patients for the pilot). The pilot was to be coordinated by a project manager seconded to EAM with support at participating hospitals as well as structures at village level. Further support for the pilot was planned to be provided by Celtel (mobile phone provider) and Tearfund’s HIV/AIDS Unit in Southern Africa.

Volunteers would use the phones to contact health centres and hospitals if they needed to refer patients without having to travel the long distance to hospitals themselves by foot or paid transport. Through the same phones, health staff could offer immediate real time advice to volunteers about what to do with a patient who deteriorates or to confirm whether a doctor was available. Using the same phones, the volunteers could use the phones to raise income by allowing business and private calls to the rest of the community.

Communication infrastructure: The proposed mobile phone technology is based on GSM technology which is an open digital cellular technology suitable for the proposed project as it supports fast voice and text communication. Project proposed community phone handsets per participating village (Figure 1; fixed in one location and covering a 45 min radius of volunteers’ work). The community phone on Celtel (now Zain) mobile network will allow for business calls. Health referral and support calls will use a restricted numbers (at no charge) and business/family will be open for general use at a fee. Mobile phone handsets will be made available to volunteer supervisors, health centres and hospitals participating in the pilot. The village level phones were to be solar powered.

32 – Proceedings of M4D 2008, Karlstad University, Sweden
2.3 Organisational Structure
The organisational structure was designed to provide a comprehensive communication solution both for project management as well as to strengthen referral systems. At the village level the volunteers would cease to be isolated from the main health delivery system as is the case in many parts of Malawi. The organisational structure is depicted in Figure 2.
3. Highlights of the Mid Term Review

3.1 Highlights of Findings

The mid term evaluation looked at a number of dimensions of the pilot including validating possible socio, economic and technological risks identified at project design stage. For the purpose of this paper the aspects of the review dealing directly with quality of patient care as well as income generating capacity of partners have been highlighted. The results are for the St. Martin’s pilot site only.

a. Has improved communication led to improved quality of care for PLWHA?

The results have been mixed. On one hand, the pilot has seen more people progressively using the phones to seek medical support. On the other hand, more calls are for business related communication rather than health related communication. Two main reasons account for this: first, there has been an increase in the number of mobile handsets in the community following government of Malawi lowering tariffs on handset imports. Secondly, families and individuals due to stigma still wait until their illness becomes critical before using the phones. In addition, the participating hospitals are fee-paying hospitals; therefore some families may hesitate to refer cases to hospitals so as to delay paying medical bills.

b. Has the project been able to provide financially income to sustain the volunteers’ use of mobile phone as an income generating activity?

From April to August 2008, the first half of the pilot, a total of MKw 174,841.73 (GBP 670.00) was generated by 9 sites. Table 1 below shows the trend of the usage. There has been a slight upward trend of usage except August where results show a sharp decline. This coincides with the increases in mobile handsets in the project area.

Table 1: Monthly Airtime Utilisation and Estimated Income Generated

<table>
<thead>
<tr>
<th>CBO</th>
<th>Loc.*</th>
<th>Phone No.</th>
<th>Airtime Usage (Units)</th>
<th>Total Amount Generated (MK)**</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mwalembe</td>
<td>N</td>
<td>05100377</td>
<td>0.35 52.58 56.23 61.33 8.49</td>
<td>226.72 49,311.60</td>
<td>28</td>
</tr>
<tr>
<td>Ilyoni</td>
<td>M</td>
<td>05100371</td>
<td>0.15 27.3 41.47 63.84 17.40</td>
<td>150.16 32,659.80</td>
<td>19</td>
</tr>
<tr>
<td>Mkuli</td>
<td>M</td>
<td>05100375</td>
<td>0.08 36.95 44.96 36.85 16.31</td>
<td>135.15 29,395.13</td>
<td>17</td>
</tr>
<tr>
<td>Lusakumwe</td>
<td>M</td>
<td>05100374</td>
<td>1.65 32.78 36.25 3.84 0.00</td>
<td>74.52 16,208.10</td>
<td>9</td>
</tr>
<tr>
<td>Mkadabwi</td>
<td>M</td>
<td>05100373</td>
<td>0.39 0.3 19.92 34.77 3.59</td>
<td>58.97 12,825.98</td>
<td>7</td>
</tr>
<tr>
<td>Chwalo</td>
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<td>05100372</td>
<td>0.39 15.8 17.15 11.56 0.14</td>
<td>45.04 9,796.20</td>
<td>6</td>
</tr>
<tr>
<td>Ilyoni II</td>
<td>M</td>
<td>05100379</td>
<td>0 0 38.31 1.57</td>
<td>39.88 8,673.90</td>
<td>5</td>
</tr>
<tr>
<td>Chikomwe</td>
<td>M</td>
<td>05100376</td>
<td>0.15 7.77 17.43 11.25 2.87</td>
<td>39.47 8,584.73</td>
<td>5</td>
</tr>
<tr>
<td>Mwanyama</td>
<td>N</td>
<td>05100378</td>
<td>0.09 0 24.65 9.22</td>
<td>33.96 7,386.30</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>3.25 173.48 233.41 286.40 59.59</td>
<td>803.87 174,841.73</td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td></td>
<td>0.36 19.28 25.93 31.82 6.62</td>
<td>89.32 19,426.86</td>
<td></td>
</tr>
</tbody>
</table>

* Location: N = Nkope H/C, M = St Martin’s Hospital.
** Amount Generated varies between a markup of K70.00 and K85.00 above the cost price of K140.00/unit

3. Wider Learning for the future

The key lessons of the pilot to date are that complimentary support for volunteers are still required for their work to be effective. In addition, low community acceptance means that increase in phone usage will be low especially without an appropriate social marketing
approach to increase profile of the phones. There is also a need to explore opportunities to provide incentives for community to use the phones for health related calls. Allowing cost free access to pre-logged hospital numbers is an option.

On the whole, the project offers valuable lessons for the next phase of the pilot.

![Figure 3: A mobile phone run by the volunteers.](image)

**References:**