

Enhancing access to current literature by health workers in rural Uganda and community health problem solving

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Abstract:

An outreach activity, which originally targeted health professionals and student nurses in rural Uganda, was extended to the community with a focus on addressing the most prevalent diseases/health problems reported by the Health Management Information System (HMIS) of the Uganda Ministry of Health. The activity was conducted in nine districts in three years (2010-2012/13) by a team of two medical doctors, one nurse and three health information professionals including an IT person. The team implemented a project that was supported by the Elsevier Foundation as part of its competitive 'Innovative Libraries in developing countries' grant. For each district, a pre-visit was made before the main visit. The pre-visit enabled the team to meet the district health authorities, the administration of the host health unit, plan for the main visit and sort out the various issues, such as venue requirements (including mobile internet service providers). The outreach included a hands-on literature search session by participants, accessing the Internet using a mobile modem, R4L registration and a question-answer session facilitated by the medical team, which was so popular. Outreach sessions concluded by filling an evaluation form by all participants. Members of the community who were not able to read English were assisted by the facilitators to translate the questions. The evaluation comments assisted the team in improving the subsequent sessions. One of the repeated comments was the request to the team to conduct such sessions to benefit more people. Consequently, at the end of each session, the team requested the participants from both the Community and health workers to conduct similar sessions to benefit those who did not attend. Training materials used and both hard and soft copies of the presentations were left with the Head of the host health unit to use in future training sessions. In addition, the training was summarised in a periodical Digest that was distributed to over 1,500 health units in Uganda. The Digest also included abstracts from literature searches of international databases on the topical diseases/health problem. Results of the final project evaluation are summarised and the sustainability of the project outlined. This article, therefore, reports the successful implementation of the project, which other low income countries can learn from.

Keywords: Health information; health literacy; rural health information; health problem solving; community health; health information outreach.

1. INTRODUCTION

Makerere University is the oldest institution of Higher Learning in the East African region, having been established in 1922. Currently, it has about 40,000 students. Makerere University College of Health Sciences¹ library, known as Albert Cook Medical Library (hereafter referred to as the Medical library), extends its services to users from outside the University community (e.g. practicing doctors and other health workers). This is because the Medical library is part of Makerere University Library (Maklib) which serves as a National Reference library. Maklib's primary users, however, are the University students, staff (academic and non-academic) and researchers. This paper focuses mainly on outreach services to health workers (doctors, clinical officers, nurses, midwives, etc) outside Makerere University who are involved in clinical work, planning, surveillance, prevention and control of disease outbreaks and health problems, and the community in nine districts.

As set out in the Millennium Development Goals (MDGs), by 2015, all health care providers should be able to access the information they need to deliver safe, evidence-based health care with the resources available to them. The challenges of information support to rural health workers had been reported by Musoke (2000; 2001, 2007).

Health and medical practitioners in rural Uganda still face challenges of access to the basic information needed to ensure the quality of health care. Despite the vast amounts of current information available online, the cost of bandwidth remains a prohibitive factor in most cases. Consequently, many African health professionals and librarians have reported that information is available but not accessible! Hence, although there is a need to produce more relevant information in Africa, the greatest challenge is to ensure that what is available so far, can be accessed. However, the effect of mobile devices and social media on health outcomes in Uganda is yet to be studied. On the other hand, outreach activities including repackaging and information literacy have provided some practical solution to the problem as will be reported in this paper.

Initially, an outreach project was introduced as part of Musoke (2001) post-doctoral activity. The first rural outreach project was part of the Higher Education Link supported by DFID for three years (April 2002 to March 2005). The actual outreach information literacy workshops under the DFID project were conducted in 2003 and 2004 by the Medical Library and reported at the AHILA conference in Mombasa, Kenya (Musoke, 2006). The evaluation of the 2003-2004 outreach information literacy workshops indicated, among other things, the need to conduct (a) periodic workshops to keep updating health workers, and (b) workshops in other health units to benefit more health workers. Subsequent outreach activities were conducted and reported at various conferences and published (Musoke, 2009). Another request for support was presented to officials of the U.S. National Library of Medicine to conduct outreach information literacy workshops in more health units, and it was approved. Outreach information literacy workshops were then conducted in three districts in 2010 and reported at the SCECSAL conference in Kenya (Musoke, 2012). The success of the previous outreach activities and the continued demand led to further activities undertaken by Maklib. The outreach was/is based on open access concept as it promotes free access to information resources from Maklib by health units, free training/information literacy workshops and other related information support services e.g. Document Delivery Services (DDS). Such activities

¹ Makerere University Medical School and the Institute of Public Health (IPH) formed a College of Health Sciences in 2007/8 academic year; the former IPH is now a School of Public Health within the College.

have gone a long way to address the challenges of information access and use by health workers in rural Uganda (Musoke, 2009, 2010, 2012) as elaborated in this paper.

In 2011, there was a review of Access to health information in developing countries by HIFA and the author was one of the persons interviewed. She pointed out that a number of relevant studies had already been carried out, as well as various successful projects. The findings of such studies and the lessons learned from the successful projects need to be followed up and implemented. Successful projects should be replicated in other areas. This paper shares the experience of a successful project that can be replicated.

2. THE PROJECT GOALS AND ACTIVITIES

A team of three health information professionals from Maklib including an IT person and health workers (two medical doctors and one Senior Nursing officer) from Makererere University College of Health Sciences implemented a project that was supported by the Elsevier Foundation competitive ‘Innovative Libraries in developing countries’ grant. The project proposal was written by the author of this paper.

2.1 The project goals

The project had two goals:

- i. To improve the accessibility to, utilisation of, and ability to share relevant health information by medical and health workers throughout Uganda, particularly those working in isolated and/or remote parts of the country, who would otherwise not be able to access such information.
- ii. To empower the communities in solving medical/health problems.

2.2 The project activities

The project had five major activities, namely: identification of topical issues, problem solving through information literacy workshops, production of the Uganda health information Digest, training of librarians and evaluation. The activities are summarised below:

2.2.1 Needs assessment to identify the topical issues to be focussed on in the project district workshops

The project needed to identify topical health problem/issues in each district. To do this, it was initially planned to collect data using face-to-face interviews and questionnaires. However, the project team realised that the Health Information Management System (HIMS) of the Uganda Ministry of Health (MoH) had the needed data. After collecting data from the MoH/HMIS, the project team compared it with the most current data collected from the District health authorities and the heads of district hospitals and/or major health units. This enabled the team to identify the major health problem/diseases listed in order of importance. In most cases, the order of major health problem/diseases was the same. The data, therefore, provided the topical issues which were focussed on in each of the nine project district.

For each district, a pre-visit was made before the main visit. The pre-visit enabled the team to meet the district health authorities, meet the administration of the host health unit, distribute the invitation letters, plan for the main visit and sort out the various issues, such as venue requirements (availability of sockets/need for adaptors, projection on the wall or mobile projector screen, mobile internet service provider with best signal in the area, etc),

catering/refreshments, accommodation for facilitators and transport costs. In October 2011 during a pre-visit, the Naggalama hospital administration requested that participants be given a Certificate of attendance and the project team designed one which was given to all participants since then.

Although the visit date was agreed in advance with the district health authorities and the host health unit, there were instances when a competing health related activity was held on the same day as the outreach visit in the district. Such activities were set usually by the Ministry of Health making it difficult for the district authorities to say no to their bosses, which resulted in fewer participants attending the already planned outreach workshop. This was the case in Bushenyi district (1st year) and Wakiso district (3rd year).

2.2.2 Problem solving and Information literacy workshops

Nine districts were visited in the three years of the project by a team of qualified health and information professionals who conducted practical information literacy workshop sessions. Separate workshops were conducted for the health workers and the community. The health workers' Continuing Professional Development booklets were signed and credited for three hours after training.

Districts visited in the first year were: Mpigi, Bushenyi and Mayuge, while in the second year, Rakai, Luwero/Nakaseke and Mukono were visited; and in the third year Masaka, Iganga and Wakiso were visited. All the planned nine districts benefited from the project.

Table 1: Health workers and community members who participated in the Information literacy workshops in the nine project districts

| Project year | District | Venue | Health Workers | Community | Total |
|----------------------------------|---------------------------|---|-----------------------|------------------|--------------|
| 1st year: 2010 | | | | | |
| September 24 th | Mpigi (Central) | Mpigi Health Centre IV | 51 | 36 | 87 |
| November 8 th | Bushenyi (Western) | Bushenyi Health Centre III/ Katungu Mother's Union Hall | 48 | 44 | 92 |
| November 24 th | Mayuge (Eastern) | St. Francis Buluba District Hospital | 36 | 84 | 120 |
| Total - 2010 | 3 districts | | 135 | 164 | 299 |
| 2nd year: 2011 | | | | | |
| January 13 th | Rakai (South Western) | Kalisizo hospital | 62 | 73 | 135 |
| April 8 th | Luwero/Nakaseke (Central) | Nakaseke hospital | 79 | 60 | 139 |
| October 31 st | Mukono (Central) | Naggalama hospital | 35 | 40 | 75 |
| Total - 2011 | 3 districts | | 176 | 173 | 349 |
| | | | | | |

| Project year | District | Venue | Health Workers | Community | Total |
|----------------------------------|--------------------|-------------------------|-----------------------|------------------|--------------|
| 3rd year: 2012 | | | | | |
| January 11 th | Masaka (Central) | Masaka hospital | 75 | 69 | 144 |
| October 4 th | Iganga (Eastern) | Iganga hospital | 66 | 83 | 149 |
| February 6 th | Wakiso (Central) | Wakiso Health Centre IV | 58 | 46 | 104 |
| Total - 2012 | 3 districts | | 199 | 198 | 397 |
| | | | | | |
| Grand total | 9 districts | | 510 | 535 | 1,045 |

Generally, the number of participants kept increasing from the first to the third year as a result of better mobilisation and addressing issues encountered during the project implementation. As summarised in table one above, 510 health workers and 535 community members making a total of 1,045 trainees participated in the project in three years.

At the end of each session, the team requested the participants from both the Community and health workers to conduct similar sessions to benefit those who did not attend. This was welcomed by many. At Mayuge, for example, the medical superintendent requested for the slides used by the facilitators, and in the spirit of open access, the project team left the soft copies of the slides (ppt) for the hospital to use in future information literacy sessions for both the health workers and the community. In the 2nd and 3rd years, some participants made similar requests. This meant that the information literacy sessions conducted in the districts had a multiplier effect.

The information literacy sessions started with demonstrating how to access current information resources and how to continue after the workshop by doing literature searches from the Internet (using a wireless modem where other internet facilities were lacking) or requesting for document delivery (DD) from Makerere University Library. Participants were then taken through a hands-on step by step literature searching using the identified topics/health issues as keywords. Copies of back up print literature search and DD forms were given to all participants as a hand-out; they were also shown an online version of the form available at Makerere University library website. The health information literacy session were very interactive as the facilitator led the discussion and asked questions to the participants who suggested more topics which the project team used to search literature so that demonstrations were made in real time and showed how current literature was accessed. For the health workers' session, the health professionals then presented the topical issues focussing mainly on current diagnosis and management using available facilities in the health units to make it feasible. While for the community session, the focus was on early signs and symptoms of diseases/health problems and their prevention. This was followed by a question-and-answer session on any health topic, and this session was very popular among participants. After each workshop, every participant filled an evaluation form as reported in section 2.2.5. Finally, the visit concluded by checking whether the health unit was registered for Research for Life (R4L). In most cases, however, the connectivity was still a challenge although the mobile modem had made a difference.

The first year activities were reported in the Digest vol. 14 no. 3 Sept-Dec. 2010; while that of the second year were reported in the Digest vol 15, Sept-Dec 2011; and the third year activities were reported in vol 16 and 17.

Treatment of patients: Although the project proposal had included an aspect of treating patients as part of problem solving, this was only provided on request in all the three years. The project team realised that during the visits, there was very limited time for the medical team to do both the training and treating of patients; this, therefore, was an over ambitious plan and could only have been fully implemented if the number of medical team was increased! So, on request in the first year of the project, the medical superintendent of Mayuge hospital received advice/consultation from a Senior Paediatrician concerning one of the patients on the ward.

In the second year, some participants in the Luwero/Nakaseke district community session requested to make individual medical consultations with the doctors. Some pointed out that they brought questions from their community members which they wanted to ask the doctors in privacy. Consequently, the hospital administration provided a room and one doctor attended to four people, while the second one and more senior attended to eight.

In the third year, community members as well as lower level health workers from the three districts requested the medical team to allow them to make private consultations, and this was provided. In most cases, the project team left the workshop venue quite late because of the consultations.

Challenges and how they were addressed

There were a number of challenges and lessons learned during the implementation of the Problem solving and information literacy part of the project. The issues identified in the previous districts were used to improve the subsequent outreach in the next districts, for example:

Timing of health workers' training: In the first year, the project team noted that holding the health workers' session in the morning was difficult as health workers had to start with their official work, thereafter reporting for the workshop about an hour later. The late start in the morning affected the programme throughout the day leading to closing the afternoon session after 6pm. Consequently, the afternoon participants were made to wait for over an hour. After the first two districts (Mpigi and Bushenyi) in the first year, the health workers' session was moved to the afternoon, and this made it possible to start on time. The programme continued that way in the second and third years, and it made a lot of difference. However, depending on the number of participants who sought consultation with the medical team, the sessions generally ended late.

Late coming, uninvited participants and mothers with children: The challenges of late coming, uninvited participants and babies were addressed by including the following phrase in the invitation letters: *'Please bring this letter with you and keep time. Participants registration stops at 9.00am prompt'* for the community and *'2.30pm'* for health workers. *'Please do not come with a baby/child to the workshop as there are no facilities to support them'*. This continued to shape the workshop programme up to the end. Other lessons were included in each district's report.

2.2.3 Production of the Uganda Health Information Digest

Information (abstracts) was retrieved from the online databases and repackaged in print format to benefit health workers who would otherwise not access such resources. Among other things, the Digest contained abstracts on the topical issues or diseases/health problems which were identified in the districts, namely: In 2010, the topics were: malaria, coughs or colds and intestinal worms.; for 2011: malaria and children, community-acquired pneumonia and skin diseases; while 2012: The issues focussed on non-communicable diseases, namely: Cervical and prostate cancers, heart conditions, hypertension, cardiac surgery and diabetes. In addition, 3-4 articles written by Ugandan health professionals on the identified topics were included in each issue of the Digest. Reports written by the project team about the outreach workshops to the districts were part of the Digest and this helped to disseminate the project activities.

Nine issues of the Digest were produced in the project period (three issues per year) and distributed over 1500 copies per issues to all health units and health related agencies and institutions in Uganda.

During the outreach visits, the Digest mailing list was continuously updated.

As part of the project activity, the Digest was uploaded and a link from Makerere University Library website under 'Library resources' leads to the 'Uganda Health Information Digest' online.

2.2.4 Training of Librarians

Makerere University Library partners in the project were the UK based Partnerships in Health Information (Phi) who conducted workshops at Makerere University both in 2011 and 2012 to benefit Uganda's health information professionals and librarians. The focus of the 2012 training was determined by the participants of the 2011 workshop. The workshops were rated highly by the participants.

In 2012, two librarians visited UK and attended various professional meetings. The author of this paper was also honoured to give a keynote address at the 20th Anniversary of Phi, the UK partner. The author also attended the annual Qualitative and Quantitative Methods in Libraries (QQML) international conference and conducted a session on health information. In 2011, one librarian attended CILIP conference and presented a paper, attended the 10th anniversary of HINARI/R4L and various meetings in July 2011. In the first year, one librarian attended AHILA conference (October 2010) at Burkina Faso and her report was attached to the first year report.

2.2.5 Evaluation of the project

In all the nine project districts, each information literacy workshop session concluded with filling an evaluation form by all participants. Members of the community who were not able to read English were assisted by the facilitators to translate the questions. The summary of the evaluation indicated that the workshops were timely, but there were repeated requests for follow up workshops and replicating the training to benefit more districts.

Information from the workshop evaluation was used as part of the final evaluation of the project, which was conducted in 2013 after the project came to an end. Two aspects of the project were evaluated at the end, namely, the Digest and the information literacy workshops.

A quantitative data collection method using a one-page semi-structured questionnaire was used to conduct a post-project evaluation. The Digest evaluation questionnaire had eight questions, while the Information literacy workshop one had seven questions. The two questionnaires had some open-ended questions of 'how' and 'why'.

The findings from the evaluation of the information literacy workshops revealed, among other things, that 64% of the community leaders who participated in the evaluation applied the knowledge gained from the workshops in various ways to benefit the community, 25% applied it in the educational institutions to benefit pupils, students and their teachers, while 11% applied it in imparting IT skills to others. This was interesting as the project aimed, among other things, to demystify access to the Internet within the community.

On the other hand, the health workers reported to have applied the knowledge gained in six broad ways, with health education and promotion scoring the highest (51%) followed by Continuing professional development with 17% and management of patients (8%). All the ways in which knowledge was applied were important regardless of the scores. For example, taking the health problem solving approach forward to the community was something interesting to the project team, as it confirmed that the training was not an end in itself but a means to the end.

The information literacy workshops were rated highly in the evaluation conducted immediately after the training. Similarly in the post-project evaluation conducted many months after the training, the high rating was maintained and the various ways the knowledge gained from the workshops was shared and applied were elaborated. This agreed with Anderson & Krathwohl (2001) who pointed out that teaching or training focuses on 'Learning outcomes' and the ability of the learners to be able to retrieve, recognise and recall relevant knowledge from long-term memory and apply it by carrying out or executing a procedure. The training was, therefore, worthwhile as learners were able to remember what they learned and to apply it in various ways. This further confirmed that the project achieved its objective of training health workers and community leaders to be able to access, retrieve, use and share relevant information for life-long learning which would lead to better health care delivery and health problem solving in Uganda. The findings also agree with Miller's Pyramid of Assessment (Ramani, 2008) where a learner uses knowledge in the acquisition, analysis and interpretation of data and this was confirmed by clinical problem solving and health promotion as some health workers reported that "*the importance of national treatment guidelines as elaborated during the training has meant a lot for my clinical work*"; "*I integrated Malaria control in the Antenatal clinic Client education topics*".

Some Masaka district community participants requested the facilitators to put the workshop presentations on various radio and television stations so that more people access the information. **This was a new idea, which may form a new project.**

The evaluation of the Digest, on the other hand, confirmed that the Digest was useful and relevant to all the respondents. This was a repeated finding even in earlier evaluations (Musoke, 2006) which showed that the production of the Digest was demand-driven and its sustainability was crucial. The respondents also pointed out that the Digest enabled them to update their knowledge (55%) and in the management of patients (29%), while some had a combination of both, e.g. "*Many times the Digests have given us the current treatment, case studies, explanation and what one really needs to update as far as common conditions are*

concerned”; *“It has helped me to think outside the box for a particular patient presenting with what I read in the digest”*.

The majority of respondents (55%) reported that they applied the knowledge gained from reading the Digest in the Management of patients, while 36% pointed out that they applied it in health promotion, and 9% in writing articles.

One of the unintended benefits of the project was an updated Digest mailing list. There had been several changes in Uganda, for example, health units upgraded, new districts carved out of existing ones; hence, creating new district hospitals, Members of Parliament, etc. that necessitated a thorough revision of the mailing list before the questionnaires were mailed.

Some quotes from the evaluation forms filled by participants immediately after the Problem solving and Information literacy workshops:

“Since health services were decentralised, it is not easy to get opportunities for workshops especially those focusing on rare but important topics such as information” (Rakai hospital administrator).

“the workshop has brought valuable information to keep the community healthy’. ... thank you for selecting Nakaseke and Luwero districts to participate in the project and for choosing Nakaseke hospital to host the workshop... the first health care delivery is done in the community, e.g. villages and schools; hence targeting villages, schools and the lowest level local authorities is strategic and commendable as it agrees with the Ministry of health adage ‘Health is made at home’. Furthermore, to achieve the strategy ‘Prevention is better than cure’ one needs information” (Nakaseke hospital administrator).

“Once healthy, people are productive... and this contributes to the growth of the economy. Health issues should not be left to the health workers alone as community participation is important in many ways e.g. in mobilisation of people to prevent diseases, seek treatment from health units... Involving the community in a project of health information, therefore, is timely and strategic as it will have a multiplier effect... It is regrettable to report that most of the common ailments are preventable and treatable, but lack of information and knowledge by the community sometimes leads to death” (Medical Superintendent of Naggalama hospital).

“the workshop focussed on diseases and health problems affecting Iganga district... I thank you for including Iganga district in the project and for selecting Iganga hospital to host the workshop. I commend this holistic approach to solving community health problems by training both the health workers and the community. Iganga hospital has done very well as it has been able to attract various health intervention projects including funding to build the Community support centre where the workshop is held...Iganga district hosts the only Health Demographic site in Uganda. A healthy society builds a nation, and a workshop like this one has indirectly alleviated poverty by providing information to keep the society healthy... health workers and the community work as a team in addressing health problems facing the district. I am happy to receive Prof Ndeezi who was my lecturer at the Medical school. The project is in line with Makerere University motto of ‘we build for the future’ and I see this project is building Iganga district for the future. (Director of Iganga Hospital).

“Wakiso district has over 840 health workers, who could not all attend the workshop. It is therefore important that those who have attended share the knowledge gained with

colleagues, so that the outcome of the workshop is multiplied and knowledge applied in various ways... Wakiso district has some very hard to reach areas including islands where electricity is so poor, making it difficult to charge cellphones, hence cutting off communication with health workers in those areas. Thank you for selecting Wakiso to participate in the project and particularly for updating the knowledge and skills of health workers as well as the community ” (Director of Wakiso district Health Service)

3. SUSTAINABILITY OF THE PROJECT

It was pointed out in the project proposal that the Digest and related problem-solving activities will be sustained in various ways. At the time of writing the final project report, Makerere University Library had included in its current (2013/14) and next (2014/15) financial year budgets a budget line for the Digest production and distribution. By the end of the project, one Digest issue had been produced using that budget line. The Digest volume 18 number 1 that focussed on Ebola, Yellow fever and Dengue was produced and distributed using Makerere University Library funds (the last issue of the Elsevier project funded Digest was volume 17, number 3). The continuity of this supportive budgeting, however, largely depends on the following:

- the financial situation of Makerere University.
- the willingness of the Library Management to prioritise the Digest and maintain it on the Library budget. Given that a new Library Director is expected after the term of office of the current one comes to an end in December 2014, it is not certain what will happen in the future! The many competing demands and the differing interests may lead to the Digest not being on the priority list; but we hope for the best.
- the library staff interested and willing to continue compiling the Digest.

In all the above, the constant is the growing demand for the Digest from its users. This would lead to a continued struggle for fundraising to sustain the demand-driven Digest. The Ministry of Health and other stakeholders would be approached to support this project. Furthermore, writing project proposals and soliciting for financial support from Development partners is one of the ways the Digest can be sustained.

On the other hand, the training of health workers shall be sustained as part of the Maklib's outreach programme that is supported under the electronic resources training. A deliberate plan will be made to include health units in the training that has been focusing on Universities and research institutions.

The problem-solving aspect of the project which involves the community, however, will require funding to be sustained. The Project team plans to have it included in the proposals to be written for sustaining the production and distribution of the Digest as indicated above.

4. CONCLUSION

During the project implementation, it was realised that part of the project proposal, which planned to have the medical team to treat patients in addition to conducting information literacy sessions, was an over ambitious plan! However, from the interactive training of the health workers, the patients were indirectly treated as the health workers asked real clinical questions, which the team ably responded to. The programme had a session focussing on any other health topics/diseases, which went on for long, giving a chance to as many health

workers and community members as possible to ask questions. Furthermore, medical consultation/treatment was provided on request in five districts. Among other things, this highlighted the demand for qualified medical service and the difference the sessions made to the participants' lives, some of whom could have consulted a medical doctor for the first time in their lives.

The findings from both the evaluation of the Digest and the information literacy workshops by the health workers and the community leaders were very encouraging and confirmed that the objectives of the project were achieved. The need for more training that was repeated by many respondents mean that the project team will continue soliciting for financial support to extend the project and sustain the problem-solving approach that was greatly appreciated by both the health workers and the community leaders. Similarly, the request made by respondents about the need for more copies of the Digest per health units and more issues per year also need to be addressed in future sustainability activities. The main challenge facing the Project team, therefore, is sustainability of what has been rated highly by the beneficiaries of or participants in the project.

The Project team is grateful to the Elsevier Foundation for the contribution it made to health care delivery in Uganda through funding this project. Implementing the project has been an enriching experience professionally. The problem with all health information projects is the difficulties they present in quantifying the lives saved by such a project. However, the respondents' reports on how they applied the information and knowledge gained from the training workshops and reading the Digest confirm better management of patients, informed health decision making, health promotion and health literacy, which all save lives.

At the conclusion of implementing this project, it became evident that there was need for a study to find out whether the improved access to health information via mobile devices, social media, Research4Life resources and through projects like the one reported in this paper by Maklib have had an effect on information seeking and use behaviour of health workers and health consumers, and whether the changes have had any effect on health outcomes. The author will conduct the study later this year.

The project team planned to share the experience at an international conference, and we were privileged to have had this paper selected by the Health and Biosciences Section of IFLA to facilitate the dissemination of the project and sharing of the lessons learned with the rest of the world.

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References

Anderson, L. W. & Krathwohl, D. R. (eds). (2001). A taxonomy for learning, teaching and assessing: A revision of Bloom's Taxonomy of educational outcomes: complete edition, New York, Longman.

Melssen, M. (2012). Low response rate and other factors render academic health science library system study ungeneralizable. *Evidence Based Library and Information Practice*, 7:2, 87-90.

Musoke, Maria G. N. (2012). "Outreach to rural health units in Uganda enhances access to information resources", In: Omondi, B. & Onyango, C. (Editors), *Information for Sustainable Development in a digital environment. Proceedings of XX SCECSAL*, 4-8th June. Kenya Library Association and The Law Publishers, Nairobi, Kenya. ISBN:978-9966-69-467-6.

Musoke, Maria G. N. (2010). "Reconstruction@maklib with minimal resources".
<http://www.ifla.org/files/hq/papers/ifla76/106-musoke-en.pdf>

Musoke, Maria G. N. (2010). "Access and use of information by primary health care providers in rural Uganda: a qualitative approach". *International Journal of Decision Support System Technology*, 2 (2).

Musoke, Maria G. N. (2009). "Document supply services enhance access to information resources in remote Uganda". *Interlending and Document Supply Journal*, vol 37 no 4.

Musoke, Maria G. N. (2006). "Repackaging health information to reach rural areas". In: Kiathe R. (ed), *Millennium Development Goals and health information provision in Africa: proceedings of the 10th Biennial Congress of the Association for Health Information and Libraries in Africa (AHILA)*, Mombasa-Kenya, 23rd-27th October, 2006. ISBN: 9966-7243-0-3

Musoke, Maria G. N. 2004. "Health information for all rural communities in Africa by 2015. a myth or reality". Keynote paper presented at the *Association for Health Information and Libraries in Africa (AHILA)* biennial conference, Malawi, October, 2004.

Musoke, M. G. 2001. Health information access and use in rural Uganda: an Interactive-Value model". PhD Thesis, University of Sheffield.

Musoke, M. G. 2000. "Information and its value to health workers in rural Uganda: a qualitative perspective," *Health Libraries Review*, 17 (4), 194-202.

Royall, Julia & Lyon Becky (2008). The change challenge of information-Technology infrastructure: are there positive outcomes or is everything just louder and faster? Proceedings of eHealth access to health information meeting.