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MALAWI

**Assessment of Information Needs Among
Health Managers and Health Service Providers
Knowledge for Health Summary Report**



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Abbreviations

AIDS	Acquired Immune Deficiency Syndrome
BCC	Behaviour Change Communication
CBO	Community-Based Organization
DAC	District AIDS Committee
CHAM	Christian Health Association of Malawi
CHW	Community Health Worker
DHO	District Health Office
DHMT	District Health Management Team
DHIMS	District Health Information Management Systems
DHIM	District Health Information Management Officer
DLC	District Learning Center
FP/RH	Family Planning and Reproductive Health
HIV	Human Immuno-deficiency Virus
HSA	Health Surveillance Assistant
K4Health	Knowledge for Health
MACRO	Malawi AIDS Counseling and Resource Organization
MANASO	Malawi Network of AIDS Support Organizations
MANET+	Malawi Network of People Living with HIV/AIDS
MIAA	Malawi Interfaith AIDS Association
MoH	Ministry of Health
MSH	Management Sciences for Health
NGO	Non-Governmental Organization
PSI	Population Services International
OVC	Orphans and Vulnerable Children
RHU	Reproductive Health Unit
SASO	Salima AIDS Support Organization
TWG	Technical Working Group
USAID	United States Agency for International Development

Executive Summary

This report presents an analysis and summary of key findings from the Knowledge for Health (K4Health) needs assessment conducted in Malawi from July - September 2009. The study used qualitative methods to determine the need for health information in HIV/AIDS and family planning/reproductive health (FP/RH) at all levels of the health system; commonly used channels for accessing and sharing information; and challenges faced by different cadres of managers and health providers when seeking or sharing information.

The study was conducted in the capital city, Lilongwe, and three districts: Salima, Nkhatakota, and Blantyre. Key informants for the study included directors, managers and health providers working in HIV/AIDS and FP/RH within the public and NGO sectors at the central and district levels. In addition, focus group discussions (FGDs) were held with health facility staff and community health workers (CHWs).

Findings show that there is a substantial **information gap** among managers and health providers working at all levels in HIV/AIDS and FP/RH. Most respondents reported that they lack up-to-date and relevant information that would help them improve the work that they do. Information that is available tends to be scattered and difficult to access. The lack of available knowledge and information is even more pronounced among CHWs who are generally trained once when they are recruited and then rarely receive additional updates. Most CHWs also reported having problems accessing new information and resources necessary for their jobs. They tend to rely on out-dated information even while new guidelines or protocols have been introduced at higher levels of the health system.

The study also reveals a number of challenges that managers and service providers encounter when **seeking information**. For instance, Internet access is available among most health professionals at the national level (headquarter level), but is generally limited at the district level to senior managers. Other district staff must seek access through Internet cafés where they have to leave their duty stations and walk for a considerable distance. Clinical staff, such as nurses, midwives, medical assistants, also lack internet access as well as the capacity to use computers and the Internet. Internet access among CHWs is non-existent.

In terms of **knowledge management (KM)**, most organizations at the central level, including the government, have Web sites; however the majority are not updated and do not offer a good platform for accessing up-to-date information. There is a need for a central data bank where information may be organized, deposited, and linked to various local Web sites. There is also a need to build the capacity of local organizations in KM to improve their documentation, storage, and sharing of knowledge and information. At the district level, many District Health Offices (DHOs) have a designated space for a library but they lack both materials and a process for sharing information at the community level. The DHO has the potential to become an important information outlet for district- and community-level health providers.

With regard to **knowledge exchange**, face-to-face communication remains the most preferred method of sharing knowledge and information as it offers an opportunity to seek clarifications. However, face-to-face interactions such as meetings and workshops are expensive to manage and may not be sustainable. Traditional information sharing resources such as radio can be utilized to provide up-to-date information to health providers and can reach health workers scattered in remote areas.

Printed materials are appreciated as referral materials following a meeting, workshop or radio program. Nonetheless, findings show that there is generally a low reading culture among most health providers which can be attributed to understaffing, busy schedules, and information that is too technical or bulky to use. Among CHWs, in particular, language was mentioned as a challenge as most materials are only available in English. There is a need to improve the delivery of content through tailored materials using simplified content and language that is suitable for the particular end user.

Professional networks, in particular the Technical Working Groups (TWGs) organized by the Ministry of Health (MoH) and National AIDS Commission (NAC), could potentially provide an effective platform for sharing information, certainly at the central level. One of their key functions is to share information with their network members but they tend to lack capacity in organizing, managing, and exchanging knowledge. Because many TWG members are NGOs and have offices at the district level, strengthening the capacity of these groups could also enhance information sharing at lower levels.

Finally, **new technologies** may have a role in Malawi for supporting knowledge exchange. Findings confirm that ownership of mobile phones is common among managers and health providers. Most providers, even at the community level, have a mobile phone with SMS capability. Although calling is the most used feature, most study respondents are satisfied with SMS as a means of sharing information that is short and instructional. Although consistent network access and air time costs were mentioned as challenges, mobile technology offers an information sharing opportunity worth exploring. Using mobile phones to access the Internet could grow with time as mobile network companies strive to improve their network service provision.

In conclusion, K4Health is well positioned to help increase the availability, access, and use of FP/RH and HIV/AIDS information at the central, district, and community levels in Malawi. Areas where K4Health might contribute include: 1) building capacity of local networks to enhance the collection and exchange of information among members and partners; 2) working with existing information sources, such as the government and NGOs, to improve the synthesis and packaging of information, particularly for users at peripheral levels; 3) strengthening information sharing structures at the district level to provide library facilities, Internet service provision and face-to-face interactions which are mostly found at the headquarters level; and 4) exploring new technologies to increase provider access to knowledge and information.

1. Introduction

K4Health is a global KM project led by Johns Hopkins Bloomberg School of Public Health Center for Communication Programs (CCP) in partnership with Management Sciences for Health (MSH) and Family Health International (FHI). K4Health is conducting a series of country-level qualitative studies of health information needs as part of its effort to bring relevant, evidence-based information, knowledge, and best practices to health professionals in low- and middle-income countries. This document reports findings from the first of these needs assessment studies carried out in Malawi from July – September 2009.

The Malawi assessment examines the demand for, and access to, information and knowledge in FP/RH and HIV/AIDS at different levels of the health system. It also reviews the existence of professional networks, tools, technologies, and stakeholders that could be strengthened to help address the needs identified in the assessment. Results from the Malawi assessment will inform the design and implementation of in-country KM activities and information products that can improve the access and use of information by program managers and service providers, including CHWs, and can ultimately lead to improving the delivery of FP/RH and HIV/AIDS services in Malawi.

The Malawi needs assessment was guided by the following research questions:

Needs: What are the health information needs of key K4Health audiences in Malawi, particularly program managers, service providers, and CHWs from both the public sector and NGOs? How are these different audiences currently meeting their health information needs? Are there gaps that could be filled by K4Health? Are there gaps that could be filled more effectively by local groups or networks?

Networks: What professional or knowledge networks currently exist in Malawi that serves program managers, service providers, and CHWs? What purpose do these networks serve? What lessons can be drawn from these networks? Which networks should K4Health collaborate with in a formal way so as to maximize the transfer and sharing of HIV/AIDS and FP/RH information in Malawi? Is there a gap in the existing networks? How might K4Health strengthen these existing networks?

Technology and tools: What are the most promising technologies and tools for K4Health audiences in Malawi (program managers, service providers and community health workers)? What high- and low-tech channels are organizations using successfully to share information with their staff, colleagues, partners, and clients in the field? Are other technology gadgets used? If so, how are they being used? What are the success stories? What are the challenges?

Infrastructure: What level of Internet access exists in Malawi? How does Internet access vary across the country? What about mobile phone access? What issues should K4Health consider

when developing Web sites and creating other online knowledge exchange mechanisms (e.g., bandwidth, existence of Internet cafés, etc)?

Key stakeholders: Who are the key stakeholders for HIV/AIDS and FP/RH information in Malawi? What are the key health topics of interest in relation to HIV/AIDS and FP/RH to these groups? Who might we tap to become champions of our K4Health efforts in Malawi? Are there any particular opinion leaders?

2. Methodology

The Malawi study team was comprised of Simon Sikwese (Lead Researcher), Agnes Banda (Research Assistant; data collection and transcription), Patricia Kruza (Transcriber), Benard Mijoni and Sarah German (MSH/Malawi), and Piers Bocock (MSH/USA) who provided the research team with technical and administrative support. The study was carried out during the period July – September 2009.

Study Design

The Malawi needs assessment used qualitative methods to collect information in response to the above research questions. Methods included key informant interviews (KIIs) with government officials and representatives from NGOs and professional networks at the central level, and with district health officers at the district level; FGDs with district management teams, health facility staff and CHWs. A breakdown of respondents by level is provided in Table 1 below.

Structured interview guides for the KII, network interview, and FGD were designed in consultation with USAID and K4Health partner staff. The guides were then pre-tested by the study team in Malawi and revised appropriately.

Study Setting

Data were collected in the capital city, Lilongwe, and in three districts: Salima, Nkhonkhotakota, and Blantyre. In Lilongwe, data were collected among NGOs, USAID staff, the MoH and NAC. At the district level, data were collected among District Health Officers, District Management teams, NGO District Managers, health facility staff, and CHWs (**Appendix A** provides a detailed list of organizations that were included in the study).

The three districts were selected to reflect variability in terms of coverage of FP/RH and HIV/AIDS activities and presence/absence of MSH projects. Selection was also guided by consultation with key MoH officials. Salima and Nkhonkhotakota currently receive support through MSH and many other local and international NGOs, while Blantyre has better health indicators and, therefore, considerably less external support.

The map below shows the distribution of the three study districts, located in the central and southern regions of the country.



Recruitment

Convenience sampling was used to recruit interview participants. Participants were identified from the government, NGOs, and professional networks working in the areas of FP/RH and HIV/AIDS. Because this study is based on information gathered from key informants, it was important to select participants who were in appropriate positions to respond to the questions. At the government level, participant selection was guided by consultation with senior government officials in Malawi through a series of high-level briefing visits conducted by MSH staff in July 2009.

In some cases, selection of participants from NGOs and local networks was guided by conversations with directors and senior managers of these organizations. For the FGDs,

participants were recruited through contact with the district-level management teams who identified participants from the community level.

A total of 28 KIIs were planned for this study and 25 were successfully conducted. Respondents included senior-level officers, program managers, and directors from the government, local and international NGOs, and professional networks and associations. Of the 25 interviews, six were conducted among network organizations, four were conducted with District Health Officers, and one with a health facility nurse when it was not possible to convene a focus group at the community level.

Twelve FGDs were planned for this study – four in each of the three selected districts. However, due to difficulties recruiting participants in Blantyre, only one FGD was conducted as planned in this district. The remaining focus groups were replaced with individual interviews. Thus, a total of 10 FGDs were conducted among USAID staff, district management teams, NGO district managers, health facility staff, and CHWs.

The table below displays the number of interviews and focus groups at each level and the profile of respondents.

Table 1. Level and Profile of Respondents

	Central level	District level	Community level	Total
Individual interviews	20	4	1	25
Respondent profile	Program Directors; Senior Managers; Local network representatives	District health officers; NGO district managers	Health facility staff member	
Focus group discussion	1	3	6	10
Respondent profile	USAID HPN staff	District health management team; NGO district managers	Health facility staff; community health workers	

Data Management and Analysis

Participants were briefed about issues of confidentiality on the information collected and that no names would be attached to information collected. Participants were also informed that recorded data would be used for transcriptions only and would not at any time be shared.

The discussion and interviews were recorded on tape, and notes were taken to review emerging themes and patterns in the data collected. The recorded data were transcribed verbatim. A thematic data analysis was manually conducted, which systematized and structured the data under codes and themes. Data quality was managed by referring emerging themes to those identified during the note taking stage.

Challenges

The research team faced several challenges during the course of data collection. Despite these challenges, data collection was completed successfully.

- **Availability of respondents**

One of the major challenges during data collection was identifying available respondents for the FGDs. In some cases, focus groups were conducted with less than the recommended number of participants because some were too busy with patients or other engagements. In other instances, individual interviews were conducted with a single person because not enough focus groups participants could be brought together. In these cases, the FGD guide was adapted to serve the purposes of the individual interview.

- **Busy schedules of respondents**

Due to busy schedules, interviews were sometimes rushed to accommodate respondents' schedules. In very few instances, the interview was stopped midway through the process because the respondent was needed in another meeting or was called to attend to an emergency in the case of hospital staff.

- **Selected respondents delegated another person**

In a few cases, the selected respondent proposed a last minute change and proposed that a delegated respondent participate in the interview. In these cases, the interview was conducted with an alternative person who was not prepared because they were informed at the last minute.

3. Summary of Key Findings

The discussion below provides an analysis of the key themes within each of the five research questions that guided the Malawi needs assessment.

3.1. Health Information Needs

3.1.1. Types of information needed

Respondents expressed a need for information of all kinds, including technical information on FP/RH and HIV/AIDS, reference materials, best practices, and health and service statistics. They also need support to make sense of that information and apply their knowledge to program design and implementation. Professional networks need knowledge resources that can support the information needs of their members. At the community level, health providers require information and knowledge to maintain their skills and improve their delivery of health services.

"... We haven't actually as a country been able to have standardized and updated materials to use. For example, the CBDAs [community-based distribution agents] we are training, you find that our program are using the

Ministry of Health curriculum document. You find that we want to conduct a CBDA training and we are using a curriculum which was developed maybe 10 years ago which lacks a lot of information like HIV.”

– Interview, Management Sciences for Health (MSH)

3.1.2. Primary sources of information and knowledge

The most frequently mentioned sources of information include the Internet, government and partner organizations and their Web sites, TWGs, professional networks, training workshops, and face-to-face meetings. However, study participants commonly face difficulties getting reliable information from any of these sources. Except in the capital, Internet access is generally limited. In addition, local Web sites are not usually maintained, the culture of knowledge sharing in Malawi is weak, and the information sources may themselves have limited access to current content. For example, respondents frequently mentioned the government and NAC Web sites as potential sources of current information and health statistics, yet these sites are poorly maintained.

Similarly, district managers and CHWs tend to rely on the District Health Office (DHO) for up-to-date knowledge, yet they usually are disappointed because DHO libraries lack books or other materials and do not provide Internet access. CHWs face additional obstacles—they are generally located far from potential information sources and usually are not invited to training workshops or meetings where they can update their knowledge.

3.1.3. Access to up-to-date information

Findings suggest that accessing useful and up-to-date information on FP/RH and HIV/AIDS is a challenge among health providers at all levels of the health system in Malawi. Most internationally supported NGOs (e.g., PACT Malawi, MSH, ACTION AID) have better access to current information than local NGOs. International NGOs can gain access to Web sites through the intranet of their international partners or they benefit from internal knowledge sharing mechanisms that provide access to up-to-date information.

However, access to the Internet is only part of the problem. Effectively using the Internet to seek information also poses issues. Although most respondents at the central level use the Internet on a daily basis, many expressed a need to improve their capacity to seek information. A common barrier to using the Internet for accessing information is its sheer magnitude and number of potential sites to visit. Respondents at the central and district levels frequently mentioned their inability to identify the most useful Web sites for relevant information.

“...as you know the Internet is broad. It’s very difficult to go directly to a place where you actually find what you want unless if, probably I would suggest if there would be a known Web site where people could just go directly and access information concerning to what you want. Otherwise just going on

the Internet to search for information you spend probably a week without actually finding what you want.”

- FGD, Nkhotakota district management team

In some cases, information and resources exist but are not made public. Information seekers have to manually track down the information by visiting various government or partner offices. With the pressures of work, they usually give up and use the little and often outdated information they have on hand.

At the district level, respondents providing clinical services need the ability to access technical information at any moment either through the Internet or a mobile phone information network.

“...now our organization is offering ARVs and at times you are stuck whether to continue giving ARVs or not. A patient comes with a complaint and you are not sure whether it’s side effects of ARVs or not, so at times you check in the books it’s not there, now probably if there could be a Web site or direct communication with the ARV unit that will be good.”

– FGD, Nkhotakota district management team

A common challenge mentioned by CHWs is the delay in receiving up-to-date information. Information gets to them long after their colleagues at higher levels have already started using it. CHWs have no access to the Internet and are also the last people to receive updated resources. As a result, CHWs tend to use outdated information even when the national-level guidelines or protocols have been changed. This uneven distribution of information can negatively affect the quality of services.

“The most challenges that we face is mainly on the way information reaches us. Information reaches us late and we don’t have materials to disseminate the information.”

– FGD, Nsenjere Health Center

“It can also be possible that there has come new information, but our bosses don’t come to explain to us about the new information.... You find that others are using [it], and we don’t know anything.”

– FGD, Nsenjere Health Center

“We have problems with the management of STIs. In other centers they have changed the program in the management of sexually transmitted infections but for us we haven’t changed and on this we are really behind.”

– FGD, Khombedza Facility staff

3.1.4. Knowledge management at the central level

Malawi lacks a coherent KM system for managing and sharing information in FP/RH and HIV/AIDS. Although information might exist within the government or stakeholder institutions, it is scattered and difficult to locate. Relevant information about Malawi is difficult to find because there is no central location that houses current country information on FP/RH or HIV/AIDS. The NAC and the government of Malawi Web sites are seen as potential information sources by respondents, but these are rarely updated.

“Our information is a bit scattered. I think we don’t have centralized information, we don’t know ... if you really need this information, whom should you consult or whom should you contact...”

– Interview, Christian Health Association of Malawi (CHAM)

Most respondents believe there is need for a Knowledge Manager at the central level who would support information management and knowledge exchange between the government and key stakeholders and link health providers to key information sources. Although most respondents at the central level have the capacity to use Internet, not all have the ability to effectively locate information on the Internet. The Knowledge Manager would be there to link information seekers to Web sites where information can be accessed.

Findings also show there is a need to build the KM capacity within the government and the NAC. For example, the NAC was consistently mentioned as the key source of information on HIV/AIDS; however, respondents claim they do not find the support they need from the NAC because it lacks an effective system for sharing information. In fact, few respondents use the NAC or government Web sites because information has not been updated in years.

3.1.5. Knowledge management at the district level

The DHO has the potential to serve as a hub for KM for district- and community-level health providers. District management staff and CHWs tend to rely on the DHO for important health information related to their jobs; however, they usually do not find the resources they are seeking. Most DHOs have libraries with no books or reference materials. But at least the structures exist and could be developed into district centers for learning and information sharing.

DHOs also have a District Health Information Management Officer (DHIM), the custodians and managers of all health information within the DHO. The DHIM could play an important role of managing the district library and linking with the Knowledge Manager at the national level to ensure that information is readily available at all times and at the district level.

At the community level, each health facility is meant to include a Health Surveillance Assistant (HSA) among the mix of providers. HSAs are key players in the DHO efforts to reach staff in remote areas with information. However, many HSAs are overloaded because

government and NGO partners tend to rely on the same HSAs for various health delivery activities. Proper coordination is needed among partners at the district level to avoid overloading HSAs with information sharing tasks.

“...the HSAs are intermediary, so once we get the information, we need to disseminate that to the HSAs so that they can take it down to the community because they work in special areas which are difficult to reach for one person. So once you meet them in a meeting, you reach a wider community through that means.”

- FGD, Nkhotakota management team

Even with the assistance of the HSAs, providers at the community level reported that since most of them work in remote areas, it is difficult for district staff to reach them with current information resources. In addition, CHWs generally have limited access to refresher training and important information sharing meetings. Although most attended an initial training when they were recruited, only a minority have ever attended any additional courses or meetings. Thus, a central place within the district would support their efforts to seek and locate essential information.

3.1.6. Barriers to knowledge sharing

Although information access might be a problem, Malawi is also characterized by an oral culture that does not prioritize reading, and one that has a weak culture of knowledge sharing. Findings identified four contributing factors:

- **Understaffing:** Although respondents might have sufficient information on hand, they are often unable to use it because they are chronically understaffed and prioritize serving their patients rather than reading.
- **Bulky information:** Much of the available health information is too bulky to be useful. Providers do not have the time to wade through long and dense materials to find the particular piece of information they need. Most respondents, especially among CHWs, suggested that information be synthesized and summarized to highlight the important points.
- **Use of technical jargon:** In other cases, respondents do not read because the information is very technical, complicated, and difficult to understand. Most available materials are too theoretical or use scientific language not suitable for the various levels of health providers. Respondents suggested that information be segmented and targeted for the appropriate audience.
- **Lack of time and forums for knowledge sharing:** Some respondents reported that while they may want to share information, they fail to do so because of competing priorities in their work. In addition, forums for sharing information are not commonly organized due to cost and logistics.

“...often times we have that challenge of translation...you find maybe there are so many documents that are very important, you want these issues to be communicated to [service providers] but they are not in a language which [providers] can read and understand...”

– Interview, Malawi Network of People Living with HIV/AIDS (MANET+)

“...the other challenge, you have the information but it’s huge ... you don’t know: Is this applicable to Malawi? How do I simplify this information and relate it to what I have? And how do I [pass] this information on?”

– Interview, Ministry of Health, Health Education Unit (HEU)

“...brief, easy-to-read material is what everybody goes for. These days there are so many documents that flow through your email, and you only have extra amount of hours in which to read...”

– Interview, Ministry of Health, Health Education Unit (HEU)

In contrast, one government department reported that they do in fact have access to all of the information and resources that they require. In addition to collecting information locally, they also get support in terms of information from the World Health Organization and other UN departments. Although they have this information, they lack an effective way of ensuring that this information is shared among all partner organizations and used for program planning and implementation.

“...having information is one thing and using is another totally different thing. So you can have information but you may not have the skills on how you can interpret and use it for betterment of the community, so that is what is lacking here...”

– Interview, MoH Health Education Unit

3.2. Networks

Malawi has a number of network organizations, associations and government-sponsored TWGs that could potentially play an important role in information sharing. However, these networks need considerable capacity-building support, especially in the proactive knowledge exchange. Network members are faced with a culture that does not readily share information, and one that relies almost entirely on face-to-face interaction. In addition, network activity is almost non-existent outside of the main cities of Lilongwe and Blantyre.

The most effective local networks appear to be the TWGs that are supposed to meet regularly and coordinate information sharing among key stakeholders. Although these TWGs have clearly defined terms of reference, they often do not meet as is planned due to busy schedules and lack of financial resources to cover meeting costs. In addition, they are not well marketed so that potential members are aware of and can participate in the meetings. A centrally located Knowledge Manager could work with the members of these

TWGs to source information and potentially produce various health information materials (**Appendix B** provides a list of the TWGs supported by the MoH and NAC).

Outside of the government, HIV/AIDS networks appear to be more active than those working in FP/RH, which serve more as professional unions or advocacy groups than coordinating bodies. Most FP/RH organizations tend to work in isolation with little knowledge of what other organizations are doing. Respondents emphasized the need for a well-coordinated approach among organizations working in FP/RH that would encourage information sharing and help them to improve their performance and provide standardized services and information to their clients. Most respondents reported that strengthening FP/RH networks would support this goal.

In general, HIV/AIDS and FP/RH networks in Malawi have large memberships. Members tend to look to these networks as potential sources of information and capacity building. Although the mandates of most of these networks and associations are clearly defined they do not effectively support their members due to limited resources and expertise. They tend to rely on meetings and occasional newsletters for sharing information but rarely carry out these strategies because of lack of finances. Due to limited Internet access among network members, few would access the newsletter even if it were made available electronically.

Finally, while most network organizations have created Web sites, they are not maintained or updated. In addition, most of their members have limited Internet access, so the benefit from such Web sites is minimal. For example, MANASO—one of the largest HIV/AIDS network organizations in Malawi—reported that only about 10% of its members has access to the Internet.

Similarly, few network respondents reported having access to global networks for sharing information. Although most network respondents reported a keen interest in using eLearning sites to update their skills, only those from internationally-supported NGOs had access to such eLearning programs or global networks. Few respondents reported seeking affiliation to global networks through personal initiatives.

3.3. Technology and Tools

3.3.1. Technologies for knowledge sharing

In Lilongwe and major regional capitals, the Internet and email have become the most prominent technologies used for information transfer. DHO access to the Internet and email has improved; however this is mainly limited to senior district staff. At the community level, Internet access is virtually nonexistent.

Findings also show that technology is being embraced at a fast rate among health providers and should therefore be utilized to enhance information access and sharing. Respondents from the government and donor level down to the front-line health worker are excited

about the possibility of a mobile phone-based alert system that could notify people of new health information, events, and meetings, or short public health messages.

3.3.2. *Traditional means of communication*

Outside of the major cities, the most effective communication channels are radio and face-to-face meetings. Above all, respondents prefer face-to-face communication for sharing information and introducing new ideas because it allows them to ask questions and seek immediate clarifications. Print materials then serve as reference materials and are more easily understood. Without the complementary support of face-to-face communication, print materials on their own, are difficult to understand. Professional networks and associations could provide a good platform for such types of interactive knowledge sharing; however, these groups generally lack sufficient financial resources to ensure regular meetings of their members and partners.

Print materials—including simple and short reference tools—are also important to health facility staff and CHWs to help them maintain their knowledge in the absence of Internet connections. In fact, respondents at all levels also mentioned the need to provide printed copies of reference materials to back up any knowledge gained from face-to-face or radio communications. Although this is generally the case, most organizations and government departments have limited access to printers. They tend to share printers and the cost of paper and toner limits their ability to produce large volumes of print materials.

Given the low reading culture in Malawi and lack of available materials, radio is another important means of information sharing. Radio programs on specific health topics could help provide updates with detailed information for providers at different levels. Plus radio avoids literacy barriers and can reach facility staff and CHWs more quickly than print materials.

3.4. Infrastructure

3.4.1. *Internet access*

Internet access – in terms of coverage, speed, and reliability – is improving dramatically in the major cities of Malawi. MoH respondents from the central level generally have good Internet connectivity, but reported challenges of intermittent power supply. Nevertheless, Internet and email are still their main sources of information. Outside of the major cities, however, Internet access is expensive, rare, and unreliable.

Respondents from internationally-supported NGOs also reported having good Internet connections. These organizations also supply many of their staff with mobile phones to connect to the Internet in places where they can access a particular mobile phone network. In contrast, local NGOs rely mostly on local Internet providers whose bandwidth is limited to urban centers.

At the district level, the lack of computers in the DHO prevents most district management staff from accessing the Internet. In most cases, only the senior management staff may access and use the Internet. Even if computers and Internet access did exist, many district-level staff lacked the capacity to use the computer and/or the Internet.

“...nowadays you get new information mainly on the Internet, but not all computers are connected to the Internet and not all people are able to use it, not everybody is computer literate.” – FGD, Salima District Health Office

At the community level, access to computers and the Internet is non-existent. In some cases health facility staff and CHWs have not heard of the Internet. In other cases, they acknowledged that health providers who have the capacity to use and access the Internet have a better chance of getting updated information faster than the rest.

Limited Internet coverage means that access to global eLearning Web sites and online professional networks is generally restricted to managers and providers working in the central government or international NGOs.

3.4.2. Mobile phones

Mobile phone ownership is very high among all respondents. The majority of respondents in the capital reported having not one but two mobile phones (one for each telephone network), and all of their colleagues have at least one mobile phone. At the district level, about half of respondents own one mobile phone. Even among CHWs, mobile phone ownership is very common.

Most respondents believe that SMS can be an important way of sharing information that is brief and instructional. Some of the commonly used mobile phones cannot handle large amounts of information. Although network problems and the cost of air time are important challenges, findings show that SMS is an opportunity that should be nurtured. There is a growing body of evidence that demonstrates the potential of mobile communication to radically improve health care systems even in some of the most remote and resource-poor environments.¹

One of the major challenges in Malawi is the type of phone commonly used does not allow users to download large messages or access the Internet. However, partnerships with mobile phone operators can potentially provide access to cheaper phones that can connect to the Internet. Although smart phones are not common, there is a growing interest among respondents to own them in order to gain better access to the Internet. It is important to

¹ Soul Beat Africa, mHealth for Development: The Opportunity of Mobile Technology for Healthcare in the Development World, downloaded 15th September 2009

note that among the few who do own a smart phone, they often lack the capacity to actually connect to the Internet.

3.5. Key Stakeholders

The key stakeholders in Malawi for FP/RH include the MoH, donors (such as USAID and UNFPA), and the major NGOs (PSI, MSH, FHI, etc.). The MoH stakeholders include national-level policymakers, District Health Officers, district management staff, and CHWs. Stakeholders for HIV/AIDS have a similar breakdown. At the government level, key stakeholders include the MoH, USAID, NAC, and UNAIDS; the major NGOs including MSH, JHU-CCP, ActionAid, as well as Malawi-based testing groups such as MACRO.

In terms of local networks and associations, several have the potential to be influential as K4Health partners; however, all require capacity building to strengthen their knowledge sharing practices and systems. For HIV/AIDS, the most effective potential partners at the central level are the TWGs responsible for coordination and information sharing among the major stakeholders in Malawi.

In terms of reaching out to communities, three networks stand out, including the Malawi Network of AIDS Support Organizations (MANASO), the Malawi Network of People living with HIV/AIDS (MANET+), and the Malawi Interfaith AIDS Association (MIAA). MANASO is a strong potential partner because it coordinates and supports over 1,000 organizations, most of which are community-based. It has structures at the district level which can be linked to the K4Health efforts in supporting information access at the district and community levels. Most grassroots organizations travel from remote areas to look for information from MANASO, but in most cases MANASO is not able to provide the needed resources.

MANET+ is another potential partner. MANET+ supports people living with HIV/AIDS as well as organizations whose affiliates are people infected and affected by HIV/AIDS. Finally, the MIAA also has potential in that they work with groups of religious institutions that work with small grassroots, faith-based organizations.

Although there are a number of key stakeholders working in FP/RH, they tend to work in isolation, which complicates efforts for effective information sharing. Nevertheless, two TWGs organized by the government – the National Family Planning Technical Working Group and the Safe Motherhood Technical Working Group – could become important partners for K4Health in order to promote communication and coordination among FP/RH organizations. In addition, the National Organization of Nurses and Midwives of Malawi is another potential partner that could link K4Health to registered nurses and midwives across the country. This organization could also support efforts to develop District Learning Centers (DLCs) as it manages three mobile libraries that are rotated among DHOs on a three-month basis.

4. Recommendations

Improving the push and pull flow of knowledge in the health system is critical to increasing access to and use of health information for improving health services in Malawi. This means building the capacity in KM of government departments, NGOs, and professional networks at the central and district levels. Moving information beyond headquarters also means strengthening existing decentralized structures to serve as information hubs for the district and community levels. Specific recommendations for the central and district levels are provided below.

4.1. Central Level

4.1.1. National Web site

Findings show a need to establish a properly managed national Web site that houses all relevant information on HIV/AIDS and FP/RH in Malawi. A national repository of essential information and resources could greatly help managers and directors to seek and share key programmatic information. In addition, a central Web-based portal also could link to other relevant Web sites, such as the MoH and NAC sites. While Web-based information would directly benefit only people who have access to the Internet, it would reach many more indirectly. Government departments, professional networks, and NGOs would rely on the national site for reliable and current information when preparing print materials, training courses, radio programming. Additional recommendations for adapting this information for users at lower levels are included below.

4.1.2. Knowledge Manager

Study participants agreed there is a need to identify and support Knowledge Managers within the government, partner NGOs, research institutions, and at the district level in order to improve the way knowledge is managed. The role of the Knowledge Manager would be to systematically collect and regularly upload information to Web sites, to link organizations together, and to serve as resource persons for staff members. The Knowledge Manager could also support district-level structures in terms of linking them to important Web sites, sending alerts about new information for particular health providers, channeling information to lower levels, and coordinating the development of summarized content for specific health providers.

4.1.3. Professional networks

Professional networks offer a good opportunity for partners to meet and share information and best practices. Existing TWGs may be the best positioned of these groups to improve the flow of knowledge between government departments and NGOs working in HIV/AIDS and FP/RH at the central level. In addition, because many of these NGO members have offices or affiliates at the district level, the TWGs could potentially improve the flow of

information from the national to the district and community levels. To do this, however, the TWGs require capacity building to improve their own internal management, as well as help capture, organize, and exchange knowledge and information with their members.

4.2. District Level

4.2.1. District Health Office

The DHO offers an opportunity to greatly improve knowledge sharing at the district and community levels. Many DHOs are already in the process of making Internet accessible to more staff members. Most DHOs also have rooms that have been earmarked for libraries but are not yet functional. Creating a DLC within the DHO could improve access to key health information for district health staff and CHWs. In particular, the DLC would provide a central point for information sharing and learning in the district; print materials from partner organizations and the ministry; free or affordable Internet access, including access to eLearning courses; and space for training workshops or district meetings for clinical staff and service providers.

DLCs would provide invaluable opportunities for face-to-face interaction at the district level. CHWs could travel to the DHO to access guidelines, instructional materials, and other information related to service provision. District managers and clinical staff could meet, share information, seek clarifications, and develop a reading culture among one another. In addition, professional associations, networks, and NGOs working in the district could be invited to make presentations and share experiences and resources. These opportunities for face-to-face knowledge sharing at the district level are important because most managers and providers will never have the chance to attend forums at the national level.

Capacity building should be provided at the district level to ensure that essential information (e.g., new guidelines, best practices and the like) flow from the national level to the DLCs and on to community health facilities. The district information officers (DHIM) and community-based HSAs, in particular, should be at the core of this process. Information provided at the district level should be both clinical and programmatic for use by clinical providers and district management staff. Summarized information suitable for CHWs (e.g., new guidelines, instructional materials, job aids) should also be available for those who can travel to the DHO.

It is important to note that issues of bandwidth tend to limit Internet access at the district level. Currently, most districts use dial-up connections which are slow and face frequent interruptions. In addition, those using mobile phones to access the Internet have problems of connectivity due to poor mobile networks.

4.2.2. District Assembly

As a result of decentralization, the District Assembly has taken on a key coordinating role for NGOs and CBOs at the district level. Therefore, efforts to develop the DLCs should be coordinated with the District Assembly. The decentralized structure of the District Assembly offers an opportunity for partners to work together and share resources. Most of the network NGOs, such as MANASO, MANET + and MIAA, have structures at the district level. All of them work in the same area of HIV prevention through promoting behavior change, offering care and support, and impact mitigation.

4.2.3. Community information kiosks

K4Health should help the DHO create a process to ensure that CHWs are able to access the information they need to perform their jobs. This means linking all community-based health facilities to the district level structure and ensuring that all relevant information or guidelines are communicated to the community level within the shortest time possible. One possibility is to create a *community kiosk*, or mini information center, located within the health facility. This would bring key content closer to CHWs and would be useful for those who cannot travel to the DLC. Print materials available at the kiosk would include essential health information for CHWs and facility staff; the information would be a subset of what is available at the district level. CHWs and facility staff could also be sent alert messages through SMS or, for example, special radio programs that provide details of new information and guidelines so recipients can become familiar with the content prior to receiving the printed material. Creating special radio programming for providers—and making sure they have access to radios—could be an effective way to update their knowledge.

4.3. Content and Packaging

Overworked health providers lack the time to read and may be easily discouraged by the volume of information and the method in which it is presented. To promote the access and use of health information, it should be tailored for specific cadres of users so that it is relevant and useful for their particular needs. This requires creating or strengthening a process of synthesizing, translating, and packaging key content from publications, manuals, guidelines, best practices, and the like. K4Health should identify and coordinate with existing content providers that have the capability to develop, adapt, summarize, and translate easy-to-read materials in HIV/AIDS and FP/RH. Brief summaries of essential knowledge that are translated into the local language and tailored to the providers' educational level would be a convenient way for providers to update their knowledge.

4.4. Mobile Technology

The use of mobile technology for information sharing could be explored, particularly at the district level. Findings show that mobile phone ownership is very high among health providers even at the community level and that SMS is widely used. Capacity to use the Internet through mobile phone might be low, but deliberate efforts can be made to gradually promote the idea of accessing information through phones. High mobile phone ownership and demand for Internet access is a good indication that health providers are striving to keep up with technology. Disseminating information and alert messages via SMS might also be more cost-effective than using conventional communication channels. A basic SMS network could provide the following functions:

- The ability of one person in the SMS network to send an alert or question to the entire network;
- The capability to push out notifications to network members about trainings and new resources available at the DHO learning center;
- Auto-respond capability to specific keywords texted by a network member. For example, “TESTING” would give locations of HIV/AIDS testing clinics; “TRAINING” would give dates and locations of upcoming trainings; and
- Automated referral information for important health conditions. For example, keywords of specific conditions would receive referral instructions customized to that condition.

While K4Health should explore these new opportunities in Malawi, it is important to support traditional communication methods as well. Face-to-face communication, print materials, and the radio are all highly valued and, among some target groups, have much greater reach than emerging technologies. K4Health should ensure that traditional means of knowledge sharing are complemented with new technologies.

5. Conclusion

The Malawi needs assessment has attempted to establish the health information needs for managers and providers who work in FP/RH and HIV/AIDS at all levels of the health system as well as commonly used channels for accessing and sharing information. Findings from this study will help shape in-country KM activities and information products that address the identified needs.

The study shows that there is limited access to relevant and up-to-date information in HIV/AIDS and FP/RH among health providers at all levels. There is also a lack of effective knowledge sharing practices and available channels (e.g., network organizations, mobile technology, Internet, and face-to-face interactions) are underutilized. In addition, available knowledge and information in HIV/AIDS and FP/RH must be collected, organized, and housed in a central electronic location accessible via the Internet. Information also needs to be synthesized and packaged in electronic and print forms to ensure it is user-friendly and relevant for different

cadres of health providers. Opportunities should be explored to use mobile phones to advance information sharing between district staff and community-level providers.

In conclusion, findings confirm that K4Health is well positioned to help increase the availability, access, and use of FP/RH and HIV/AIDS information at the central, district, and community levels in Malawi. There is great need for – and great interest in – K4Health activities in Malawi to build capacity and strengthen current mechanisms for knowledge exchange of essential health information in HIV/AIDS and FP/RH. Areas where K4Health might contribute, include building capacity of local networks to enhance the collection and exchange of information among members and partners; working with existing information sources, such as the government and NGOs, to improve the synthesis and packaging of information, particularly for users at peripheral levels; strengthening information sharing structures at the district level to provide library facilities, Internet service and face-to-face interactions which are mostly found at the headquarters level; and exploring new technologies, such as mobile phones, to increase provider access to knowledge and information.

Appendix A: Needs Assessment Interview List

Key Informant Interviews

Area	Organization	Location
RH/FP	1. Management Sciences for Health (MSH)	Lilongwe
	2. Family Health International (FHI)	Lilongwe
	3. Population Services International (PSI)	Blantyre
	4. Christian Health Associate of Malawi (CHAM)	Lilongwe
	5. FAMILI	Lilongwe
	6. Bamja La Mtsogolo (BLM)	Blantyre
HIV/AIDS	7. ActionAid Malawi	Lilongwe
	8. Johns Hopkins Center for Communication Programs (JHU-CCP)	Lilongwe
	9. Malawi AIDS Counseling and Resource Organization (MACRO)	Lilongwe
	10. Private Agencies Collaborating Together (PACT)	Lilongwe
	11. MoH/RHU	Lilongwe
	12. MoH/Health Education Unit	Lilongwe
	13. PEPFAR	Lilongwe
	14. NAC	Lilongwe
MOH	15. District Health Office (in Salima district)	Salima
	16. District Health Office (in Nkhonkhotakota district)	Nkhonkhotakota
	17. District Health Office (in Blantyre district)	Blantyre

Network Stakeholder Interviews

Area	Organization	Location
HIV/AIDS	1. Malawi Network of AIDS Support Organizations (MANASO)	Blantyre
	2. Malawi Network of People Living with HIV/AIDS (MANET+)	Lilongwe
	3. Salima HIV/AIDS Support Organization	Salima
	4. Malawi Interfaith AIDS Organization	Lilongwe
RH/FP	5. Nurses and Midwives Council of Malawi	Lilongwe
	6. UNFPA/Family Planning Association of Malawi	Lilongwe

Focus Group Discussions

Area	Organization	Location
USAID	USAID/Malawi Health Staff	Lilongwe
Salima	District: District Management Team	Salima District Hospital
	District: NGO District Managers	Salima DHO
	Community: Health Facility Staff	Khombedza Health Centre
	Community: Community Health Workers	Khombedza Health Centre
Nkhotakota	District: District Management Team	Nkhotakota District Hospital
	District: NGO District Managers	Nkhotakota District Hospital
	Community: Health Facility Staff	Nsenjere Health Centre
	Community: Community Health Workers	Nsenjere Health Centre
Blantyre	District: District Management Team	Blantyre DHO
	Community: Health Facility Staff	Ndirande Health Centre
	Community: Community Health Workers	Ndirande Health Centre

Briefing/Courtesy Meetings

Organization	Position/ title
Ministry of Health/Reproductive Health Unit	Director
National AIDS Commission	Head of Partnership and Liaison Unit
USAID/Malawi	Deputy Team Leader, Reproductive Health Specialist
PEPFAR	Global Health Fellow
Management Sciences for Health	COP

Appendix B: List of Technical Working Groups

HIV/AIDS Technical Working Groups

- Behaviour Change Interventions
- Biomedical
- Impact Mitigation
- Research
- Monitoring, evaluation, and information systems
- Mainstreaming
- Local NGO Forum
- International NGO Forum
- Young People

FP/RH Technical Working Groups

- National Family Planning Technical Working Group
- Safe Motherhood Technical Working Group