TECHNICAL REPORT

Market Research Needs Assessment: Understanding Health Care Improvement Information Needs of Key Stakeholders in the Uganda Health System

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Acronyms

AIDS	Acquired immune deficiency syndrome
ASSIST	USAID Applying Science to Strengthen and Improve Systems Project
CUG	Closed user group
DHO	District Health Officer
EMTCT	Elimination of mother-to-child transmission
GHeL	Global Health eLearning Center
HC	Health center
HIV	Human immunodeficiency virus
HMIS	Health management information system
ICT	Information communication technology
IEC	Information, education, and communication
IT	Information technology
IVR	Interactive voice response
JHU·CCP	Johns Hopkins University Center for Communication Programs
KM	Knowledge management
M&E	Monitoring and evaluation
MCH	Maternal and child health
MoH	Ministry of Health
NGO	Non-governmental organization
OVC	Orphans and vulnerable children
PMTCT	Prevention of mother-to-child transmission
QA	Quality assurance
QAD	Quality Assurance Department
QI	Quality improvement
SMS	Short message service
UNEPI	Uganda National Expanded Program on Immunization
UNMHCP	Uganda National Minimum Health Care Package
URC	University Research Co., LLC
USAID	United States Agency for International Development
WHO	World Health Organization

EXECUTIVE SUMMARY

Introduction

In an effort to generate country-wide learning for initiatives that support and institutionalize improvement interventions in Uganda, the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project seeks to share knowledge about improvement-related strategies among government agencies and implementing partners. In order to determine the best way to share improvement knowledge, ASSIST conducted an information needs assessment with Ministry and non-governmental organization (NGO) staff working at the national and district levels of the health system from March 2014 to June 2014. Individuals interviewed included policy-makers, program managers, and health care providers. A total of 25 participants were interviewed and asked to share what quality improvement work they are currently undertaking, preferred communication tools, access to resources such as mobile phones and the Internet, and on what quality important topics they need more information for their work.

Findings

Knowledge Management (KM) Systems: Few respondents reported a KM system in place at their organization for gathering, synthesizing, and disseminating information. While some respondents said they have a resource center or library, most said new information is usually disseminated through meetings, and that information is not always synthesized or reformatted in a way that is easy to read. Some organizations are developing their own resources, such as guidelines and checklists for staff, but many said they require assistance in the form of funds to develop resources and technical guidance on drafting content.

Quality Improvement: Improvement knowledge varied among participants. Many would like basic information on it, such as its definition and examples. Participants said synthesized quality improvement information and how-to knowledge in the form of practical tools, such as job aids and case studies, would be useful for training staff on designing and implementing improvement strategies.

Existing KM Web Portal: Only Ministry of Health (MoH) employees at the national level expressed familiarity with the MoH's KM web portal (http://health.go.ug/mohweb/), suggesting that the portal is not widely used outside of the MoH. Some respondents said the portal is not regularly updated, which may be a contributing factor in why few NGO employees were aware of the website.

Internet Access: Internet access varies across the country and is more prevalent at the national level of the health system among government employees. Some respondents reported having to use their own personal resources to ensure consistent access; respondents indicated that demand for professional use has outweighed their organization's capacity to deliver that access. Internet access is almost nonexistent at the community level.

Email Access and Use: Although email is available at the national level, respondents said it is infrequently used and not the best method for disseminating information. Participants said interpersonal communication at meetings and workshops is effective for sharing information throughout their organizations.

Mobile Phone Use: Mobile phone use is common at all levels of the health system, but network coverage is inconsistent in some areas of the country. Participants reported using phone calls and text-messaging for work purposes, the use of which is dependent on personal funds for these services and network coverage in their area. Some organizations have partnerships with telecommunication companies to provide free SMS messages in closed user groups (CUGs).

Recommendations

Exchange of knowledge is an issue at all levels of the Ugandan health system, where limited access to resources, such as the Internet and email, has had an impact on how information is shared. Health

professionals seem to rely on mobile phones and interpersonal communication methods for communicating with colleagues and sharing quality improvement strategies. The following recommendations are based on the most promising communication channels for disseminating information identified in the assessment:

Mobile Network: Since mobile use is universal at all levels of the health system, the rapid and streamlined exchange and dissemination of improvement knowledge would gain the greatest utility through SMS bulk messaging. Some respondents have already noted that they use existing CUGs within their own organizations or professional networks. The greatest utility of a CUG would be in the implementation of an improvement activity, where teams at multiple sites could readily share their successful changes with counterparts at other sites. The context-based nature of this messaging would strengthen the spread of tacit knowledge about how to implement changes.

Several platforms offered by entities such as Switchboard and Frontline SMS have already created and nurtured successful mobile-based communities of health professionals in similar care environments. For example, Switchboard works with national telecom companies to offer services such as free calling networks, nationwide phone registry, and bulk text messaging to organizations working to strengthen health worker capacity.

While the MoH has instituted a moratorium on eHealth piloting, the development of a CUG among providers and improvement science could be seen not as a new eHealth intervention, but as a supplement to leverage existing CUG networks among key stakeholders and implementers.

Existing KM Web Portal: To increase coordination and understanding of improvement guidelines, the existing KM portal needs content development and management improvements. The KM portal should be a one-stop shop for the MoH's improvement-related resources that can be accessed by audiences with low-bandwidth and/or intermittent Internet access. The involvement of the Quality Assurance Department and the ICT Department within the MoH will be integral to successful convening of stakeholders (including multiple tiers of MoH offices, donors, implementing partners, and community-based organizations) to contribute to a body of improvement knowledge for the MoH. The use of bulk email to an opt-in subscription list (e.g., MailChimp, iContact) for new content could help to generate demand.

Print and Electronic Resources: Practical and synthesized print and electronic resources, such as job aids and checklists, offer a useful approach for disseminating quality improvement information to service providers, technical advisors, program managers, and policy-makers. These resources will assist with providing basic information on quality improvement and how-to guides on implementing quality improvement strategies in an easily digestible format. Working with the MoH and quality improvement partners, ASSIST can provide technical support in developing these resources and disseminating electronic versions through the KM portal and print versions through face-to-face sessions as part of a blended learning activity.

Blended Learning: A blended learning activity involving a materials-based curriculum and face-to-face instruction would strengthen key competencies for improvement science and implementation. As a part of the compilation and dissemination of MoH QI materials, ASSIST plans to integrate these materials into a QI training curriculum for health professionals across the health system. The development of a QI training curriculum could be tailored for online and offline use depending on audience need, while other facets of the blended learning activity can be fulfilled by internal and external technical assistance. Additionally, an interactive voice response (IVR) system could reinforce learning by sending a series of questions based on the review of the materials recently completed by the user, where the user selects an answer choice and is informed if their selection is correct or not. IVR allows for information to be sent via SMS messages or pre-recorded voice messages, allowing eLearning users to reinforce course lessons without requiring the use of a smartphone.

I. INTRODUCTION

The objective of the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project is to improve the quality and outcomes of health care and other services by enabling host country providers and managers to apply improvement science approaches at the facility and community levels. ASSIST uses knowledge management (KM) as a key strategy to complement improvement interventions by enabling a process of learning about what is effective to improve health care. ASSIST's KM strategy also seeks to connect facility-based sites participating in improvement efforts to generate and spread that learning within the improvement effort and beyond to the larger health system.

In an effort to generate country-wide learning but also support and institutionalize improvement activities in Uganda, ASSIST is exploring KM mechanisms to share knowledge about improvement-related strategies among government agencies and implementing partners. In order to determine the best medium for sharing improvement knowledge, ASSIST conducted an information needs assessment with ministry and non-governmental organization (NGO) staff working at the national and district levels of the health system. Individuals interviewed included policy-makers, program managers, and health care providers.

The needs assessment explored health information needs related to quality improvement, what quality improvement work participants are currently undertaking, and preferred communication tools.

A. ASSIST Uganda

The mandate for the ASSIST Project in Uganda is to improve service and competencies in the following areas of care: HIV and AIDS; safe male circumcision; prevention of mother-to-child transmission (PMTCT) of HIV; maternal, neonatal, and child health; family planning; and orphans and vulnerable children (OVC). Addressing the need to institutionalize and scale up improvement strategies nationally, ASSIST Uganda has also been tasked with operationalizing a national quality improvement strategy put forth by the Ministry of Health (MoH) to improve the ability of health care managers and leaders to support improvement activities as well as work with private-sector implementing partners for the purpose of improving the quality of care in private facilities in accordance with MoH standards and guidelines.

The MoH's push for institutionalization and optimal implementation of improvement standards could be facilitated by an accessible health care improvement information repository that facilitates knowledge exchange and learning across different sectors. Current structures to house the country's health care improvement information are not available. Therefore, the need for a comprehensive health care improvement information resource aligns with ASSIST Uganda's aim to scale up improvement activities and ensure the government's ownership of these quality improvement initiatives.

B. Objectives

The objectives of the study were the following:

1) To understand current information needs in quality improvement knowledge (tools, guides, change packages, case studies, training materials, video clips, etc.) tailored to Uganda;

2) To identify design, format, and delivery preferences for print and digital resources;

3) To learn about current infrastructure and capacity for communicating and implementing quality improvement;

4) To assess needs for a KM web portal and knowledge exchange forums.

II. METHODOLOGY

A. Study Design

The needs assessment involved key informant interviews with participants at two government agencies (Ministry of Health and Ministry of Gender, Labour and Social Development) and NGOs involved in scaling up improvements in HIV-related services. The interview guide included questions on each participant's job responsibilities, the role and mission of their organization, whether they work on quality improvement projects, preferred communication channels, knowledge-sharing patterns and barriers, access to electronic resources, and interest in a web portal on quality improvement. The guide was pre-tested with two MoH officials and one NGO respondent, none of whom were included in the list of participants. Based on the pre-test results, corrections were made to improve question clarity and flow. The final interview guide is in the Appendix.

B. Team

The Johns Hopkins Bloomberg School of Public Health Center for Communication Programs (JHU·CCP) in collaboration with University Research Co., LLC (URC) led the needs assessment, with JHU·CCP staff in Uganda managing the local approval process and conducting of interviews.

US-based staff from JHU·CCP included Tara Sullivan, Rupali Limaye, Naheed Ahmed, and Sidhartha Deka. ASSIST staff in the US was comprised of Lani Marquez (URC), Edward Broughton (URC), and Sarah Smith Lunsford (EnCompass LLC).

Staff based in Kampala, Uganda, included Esther Kaggwa (JHU·CCP), Cheryl Lettenmaier (JHU·CCP), Alex Kakala (URC), Esther Karamagi (URC), and Humphrey Megere (URC). Esther Kaggwa oversaw the hiring and management of two research assistants who helped with conducting interviews and one researcher who coded interviews and was involved in data analysis. The URC-Uganda team worked with the MoH to identify study participants.

C. Study Sites

As the study included staff from the national- and district-level ministry agencies and NGO respondents from the eight study districts (Kampala, Mubende, Hoima, Mbarara, Jinja, Busia, Gulu, and Mbale), interviews were held in the respective offices of the participants.

D. Study Participants

The study used purposive sampling to identify and recruit participants. In order to glean the most relevant information, we had to include individuals who would provide the most pertinent information, which could not be done without input from the MoH. The Quality Assurance Department (QAD) at the MoH selected government participants based upon their involvement in HIV/AIDS programs or quality assurance initiatives. In addition to MoH input, guidance from URC and JHU·CCP informed the inclusion of eight MoH headquarters personnel, seven MoH district/regional hospital personnel, two Ministry of Gender, Labour and Social Development personnel, and eight implementing partners. At least one representative was selected from each of the main departments at MoH headquarters, with the exception of the Child Health Department. To select the MoH district/regional hospital personnel, the MoH QAD team identified districts based on their experience with quality improvement. The goal was to include districts that had considerable experience (or strong partner activity) in working on quality improvement as well as those with little experience. District Health Officers (DHOs) and regional referral hospital directors were also interviewed. The eight implementing partners were selected from large donor-funded projects in Uganda, based on input from URC and the MoH QAD. Many of the individuals interviewed were either quality assurance coordinators or individuals responsible for overseeing quality assurance (QA) in these organizations.

E.　Data Analysis

Team members drafted a code list based on themes present in the interview guide and as well as emerging codes from the initial review of transcripts. Next, three team members coded interviews in Atlas.ti, revising the code list as necessary to incorporate additional themes. The remaining transcripts were then coded using the revised code list, and outputs for each code were examined for recurring sub-themes and relevant quotes. Emerging themes included participants' implementation of quality improvement strategies, challenges to quality improvement, and resources needed to facilitate adoption of quality improvement activities.

F.　Ethical Clearance

The Johns Hopkins Bloomberg School of Public Health's Institutional Review Board classified the protocol for this needs assessment as "not human subjects research" on January 13, 2014. The Ugandan MoH issued a letter of support and introduction for this assessment on March 13, 2014. An explanation of the objectives of the assessment was given to participants and their verbal consent to participate obtained before the start of the interview.

G.　Participants

A total of 25 key informants were included in the study. Table 1 provides key demographic information of the informants.

Table 1: Participant characteristics

	FEMALE		MALE		Total	
	n.	col %	n.	col %	n.	col %
Total	7	100	18	100	25	100
Age Group						
25 - 34	2	28.6	3	17.0	5	20.0
35 - 44	4	57.0	4	22.0	8	32.0
45 - 54	1	14.3	6	33.3	7	28.0
55 - 64	0	0.00	5	27.7	5	20.0
Highest Level of Education						
4-year college (Bachelor's)	0	0.00	2	11.0	2	8.0
Grad School (Master's/2 years)	7	100.0	14	78.0	21	84.0
Grad School (PhD)	0	0.00	1	5.50	1	4.0
Medical School (MD)	0	0.00	1	5.50	1	4.0
Job Function						
Policy-maker	2	28.6	3	16.7	5	20.0
Program manager	1	14.2	10	55.5	11	44.0
Technical advisor	3	43.0	3	16.7	6	24.0
Teacher/trainer/officer	0	0.00	1	5.5	1	4.00
Librarian	1	14.2	1	5.5	2	8.00
Organization/clinical institution						
NGO/PVO (local/international profit and not-for-profit)	3	37.5	5	62.5	08	32.0
Government/ministry	4	23.5	13	76.5	17	68.0

III. RESULTS

Findings were categorized into the following major themes: a) background of participants and organizations, b) resource development, c) quality improvement (QI), d) quality improvement website, e) information delivery and sharing preferences, and f) access to and use of resources. Within each theme is a series of sub-themes detailing responses to questions related to the overarching theme of the section.

A.   Background of Participants and Organizations

1.   Typical Workday

As an opening question, participants were asked to describe their typical workday. The purpose of this question was to facilitate understanding of contextual aspects surrounding their improvement work.

The majority of participants mentioned that meetings take up the majority of their time in the office. The meetings ranged from technical working groups to meetings with community members, clients, and family members of clients.

> *My typical working days are full of meetings, consultations, approval of documents, reading reports, mainly that.*
>
> Male, Policy-maker, Government

The majority of participants said their typical day involves reviewing and developing documents like reports, plans, and protocols or responding to email correspondences.

> *The office day of course it starts at 8:00 am, you are here depending on the errands you are supposed to run, we have maybe reports to write, we have things to submit or activities to work on. So basically that is what it is, writing reports or responding to some issues of different partners maybe MoH, other partners, USAID and that is what keeps us in office. But ideally we are supposed to have like 85% of our time in the field.*
>
> Male, Program Manager, NGO

Quality improvement activities were identified by one-third of the participants as a common undertaking during a typical workday.

> *We support the district QI teams to hold meetings on regular basis, monthly meetings. During those meetings, we refer to their performances and they discuss current issues in, in regard to performance in the same meetings, we give them an insight on what's happening at site. So we have some pre-prepared performance slides for the different sites and we think this is intended for continuity like sustainability that will empower the district QI team members to be able to continue.*
>
> Male, QI Director, NGO

2.   Activities from Previous Working Day

In order to place workday narratives within the context of a participant's organization, a follow-up question was asked regarding what the participant did the previous working day. Overall, there were no significant differences between a typical day and their previous workday.

Almost all of the participants attended a meeting or a workshop. About one-fourth reported reviewing budgets or accountabilities. This was in addition to other assignments, such as report writing, mentorship, and coordination.

> *Yesterday I worked here in office, I had accountabilities to work on, and then I have mentorships running around, so I had to coordinate that, the logistics for the EMTCT mentorships, that are running and also I had to work on the accountabilities for last week's activities and of course I had*

to submit in budget's for next week activities... next week we are having a safe male circumcision camp, and I support the SMC motion. So that's what I did, worked on the budgets, worked on accountabilities, monitored and coordinated the mentorships and then submitted the accountabilities for last week's activities.

<div align="right">Female, Program Manager, NGO</div>

3. Job Function

Each participant described a wide range of roles and responsibilities. The most frequently mentioned work responsibilities included quality improvement, finance, budgeting and accountabilities, human resources, and the provision of medical care.

More than half reported being involved in quality improvement work, such as accreditation, policy writing, training, supervision/coordination, and implementation of quality improvement processes.

So as part of Senior Management, I oversee the quality improvement activities in 13 districts and work hand in hand with the M&E department to ensure that the part and roles and functions of quality improvement are taken care of. So partly as a manager, because I am working as a director of quality improvement, I give advice to the part of the organization, as to what strategies we should put in place to ensure quality improvement activities happen at the primary source, that is, at facility level, through the district structures, mainly the district health office.

<div align="right">Male, QI Director, NGO</div>

I make sure I assess the accreditation criteria, make sure, I [coughs] ensure that those [sites] that have been assessed as compliant remain as fully compliant and those that may be partially compliant or non-compliant are supported to improve, and what I have also done, which is expected of me, is to develop those criteria and continue and continue as a system which I do and in terms of focus on technical assistance every so often to these other facilities that need our help.

<div align="right">Male, Technical Advisor, Private/Not for Profit</div>

Some said they are involved in budgeting, finance, and accountability. Others indicated involvement in other administrative functions beyond finance and budgeting, such as human resources and overall facility management functions.

I also deal with human resource issues, the way the department is structured I do not have a personnel officer so I do almost [all] personnel work. That one, that's why you see like now the health workers, will come with their complaints and I do that, in order to send them to the district personnel. So you will see, that is quite consuming you have got the analyses, the staff you have and you see the gaps, see their performances, see their appraisal, have they been appraised or not like that.

<div align="right">Male, Program Manager, Government</div>

I carry out day-to-day running of the hospital, making sure that all the services that my patients need all there, making sure that people are there to man the services, make sure the hospital is running fairly well. ...I have another assignment, now this appointment now is for Finance. As MoH looks at me as an administrator, the ministry of finance looks at me as an accounting officer. Now this accounting Officer's role attracts a different kind of appointment. And in the appointment letter there's a leg of job description which you must do, and you are liable to any loss of funds in the institution. So you take responsibility to every resource which is handed over to the institution and that means, you must give financial reports and accountability on a quarterly basis.

<div align="right">Male, Administrator, Government</div>

About one-fourth said they provide health services. Among these participants, almost all work for the government.

> *And then after that I also go and review some of the patients who are under my care who have been consulted or who have been sent.*
>
> <div align="right">Male, Administrator, Government</div>

4. Organizational Goals and Objectives

Participants were asked to describe the goals and objectives of their organizations. Similarities were observed across government and non-government institutions in terms of health care improvement work.

Almost every participant said that one of their organization's objectives was to provide, enhance, and support quality improvement of health care services.

> *We are supporting 13 districts. So at district level we are on a daily basis, at most preferably on monthly basis, we give support to the district QI teams to things, through the areas which they feel they need improvement.*
>
> <div align="right">Male, QI Director, NGO</div>

In general, quality improvement objectives were mentioned in connection with general health care services. A handful of participants said their improvement work was related to specific health conditions or improving quality of health services for specific populations, such as children, adolescents, or women.

> *Actually our goal is to have a healthy and fulfilled life in every HIV infected and affected child and in their family…to provide a quality family, centered pediatric adolescent health care education and clinical health.*
>
> <div align="right">Female, Technical Advisor, NGO</div>

A little more than one-third stated that the primary goal of their organization is to deliver the minimum national health care package (UNMHCP) to the Ugandan population regardless of the nationality of patients.[1] The package was described in a variety of different ways, but in general it covered prevention, treatment, and disease surveillance.

> *Make sure that Uganda National minimum health care program or package is delivered to the people. It's like the core mandate really. The Uganda National Minimum Health Care Package, that's critical. We treat material TB, AIDS, (I am not saying HIV) I am saying AIDS. We treat pneumonia and all these things. That's curative we do surgery that's curative. Then preventive, e.g. we vaccinate children "you know the UNEPI"? …and to carry out disease surveillance.*
>
> <div align="right">Male, Program Manager, Government</div>

One-third mentioned objectives related to health systems strengthening, such as training staff, strengthening supply chain systems, community engagement, and supporting the health management information systems (HMIS).

> *Another one is health system strengthening. The health system is strengthened to make sure that service is delivered to the community. Now, under health systems strengthening we have human resource, for health we have HMIS, we have private sector involvement, we have supply chain management, we have laboratory service strengthening, we have QI.*
>
> <div align="right">Male, Technical Advisor, NGO</div>

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[1] The second Uganda Health Sector Strategic Plan defines the UNMHCP as a health machinery with four clusters: (i) health promotion, disease prevention, and community health initiatives; (ii) maternal and child health; (iii) prevention and control of communicable diseases; and (iv) prevention and control of non-communicable diseases.

5. Knowledge Management Staff

Very few organizations had a staff person whose mandate it was to gather, organize, and store information related to improvement.

> *No, about gathering, about health care improvement information, no we don't have him yet. It is me, right now, we just process information. We have a health care improvement team, but someone who gathers that information and actually disseminates, we don't have, and we haven't yet appointed anyone.*
>
> Male, Technical Advisor, Government

Or, if organizations had a KM person, participants did not know about that person.

> *Hmm I don't know, I don't think they have specified some body, I don't think so we are supposed to have a district quality improvement team, we have it, but now we cannot say one of the members of this team has been designated with that sort of work.*
>
> Male, Program Manager, Government

Among those organizations that did have a designated individual or individuals, a point person in a specific division or divisions typically implemented these functions. Collaboration regarding knowledge sharing between divisions was rare.

> *In the OVC unit we have the advocacy officer. Then in our department we gather when out there and put it in our shelves. Then we have the people in the IT department. They are the ones who should be able to gather these and share. They gather, keep it for themselves but someone says share with staff, or the   sub national level, then they can share.*
>
> Female, Policy-maker, Government

Almost all participants reported that it was unclear whose job it was to gather, organize, and store improvement data.

> *Not specifically one I would say, we have, there are different arms of collecting information. Like each department, those actually are roles of the head of the department but he assigns someone in charge of reporting, but our part as the quality assurance, we look around; does this department have the required guidelines, tools needed to do their job?*
>
> Male, QA Coordinator, NGO

Or, if more than one person was mandated to gather, organize, and store improvement data, coordination between KM staff was poor.

> *Not necessarily health care improvement activities because we have a fellow who is responsible…there are two, one is based in the community and one based in the office and doing that kind of work you have described. But also on our side I work with another colleague called, a technical advisor QI, so we are   responsible as part of our job descriptions to put together this good efforts of QI and then we share with the team members but also give feedback to the districts.*
>
> Male, QA Director, NGO

In addition to being unclear about the function of a KM person, not all KM point persons gathered, organized, and stored information. The scope of work of a KM person varied greatly.

> *He is the one who finally does the inventory. He doesn't gather, because it's done by the partners, he receives what they have got, tells them the procedure, process of how they should do it. He receives it through the managers and he puts it together then he sends it back. We also have quarterly reports that come to the strategic management team that can have some picture of information on what's going on and where. That's also another hub I guess on information on health. So maybe it's not one person.*
>
> Female, Program Manager, NGO

Almost all participants alluded to the fact that the KM point person was not effective at gathering, storing, and organizing improvement information.

> *(The person in charge), she is not very organized, where we have a lead person, the assistant DHO for MCH is the one who is the quality focal person. She does that, but she has not reached the effective and efficient level.*
>
> Male, Program Manager, Government

Even if a KM staff person or resource was in place, many participants suggested that resources were not regularly updated.

> *Yes, the resource center it is supposed to be there functional of gathering information, storing and even disseminating it. There are supposed to have different jobs. To get the information, you are supposed to put in your own effort to get and share it. Because if you want the web site, it's not updated.*
>
> Male, Administrator, Government

An additional barrier was limited copies of a resource.

> *….And because we don't have resources to send, when colleagues come over, we can say "Hey, by the way there are these books here you can take some" They don't organize. He gathers, he stores, then organizes and sends to us through mail.*
>
> Female, Policy-maker, Government

When improvement information sharing occurred, the diffusion of the information went through many levels, perhaps resulting in misinformation.

> *Information is gathered at a facility level, on a monthly basis, and sent to the coordination office i.e. from the lower level unit. Then on a monthly basis it's gathered at a diocesan office level automatically automated. They are collected in the computer and stored, then on a quarterly basis it's disseminated to the, to us and to the owners who are down, who released it. Then on the annual basis, information flows from the diocesan office to us electronically. Yeah, that's how information comes here.*
>
> Female, Technical Advisor, NGO

Only a handful of participants reported that KM within their organization was effective. These organizations typically had more than one KM person dedicated to gathering, storing, and organizing improvement information.

> *We have a whole public relations department that has different people that send information on emails, newspapers and so on; I think they are doing a good job. At least they have a department of three (3), we have a public folder that was developed by them, so each department puts in what they do, or their daily activities for example QI, are: what are they asking, what do they do, and some of their success stories. So any person at any one time can click on the package folder and access information, both in the region and here.*
>
> Female, Technical Advisor, NGO

Nearly all organizations with dedicated KM people believed that their KM process could and should be strengthened.

> *I work with a team of three other monitoring and evaluation officers. That's their descriptions. And together we work to see that we collect this information we need from all the possible places. Well we organize by saying, say by the people every month they need to send us such information. When we receive it, we gather it and then we can then analyze it so that we can make sense out of it. The sharing bit, like I said is feedback to the facilities that give us this information, then through the journal club. We want to especially share with the communities out there with the*

scientific community, by publishing our work but we still we are still coming up short, that's one area we need to strengthen ourselves in.

Male, Technical Advisor, NGO

6. Geographic Scale of Work

Approximately half of the participants work at more than one geographic level (national, district, community) of the country.

National, right from national level to the grass roots, to communities; at national level we have the mandate for we sit at the pediatric council where the executive director is represented in policy making and all that. At the district level we do health systems strengthening, one of them being sub granting and help them plan and work through. That's in all areas, we go comprehensive, and that's the mandate. We go into maternal health and other areas so that's at the district level, health system strengthening. When we come at the facility we work with them seeing the patients care and treatment. QI being part of them TB, HIV and malaria, every area you can think of. … Surgery, all of them because it's comprehensive and then still at the facility we do infrastructure, a bit of it, we were doing some renovations here and there ….

Female, Technical Advisor, NGO

Participants described the different mechanisms and structures through which their institutions operate at multiple geographic levels.

Mainly we do supervision, but we have structures at the sub national level, district and community level. For instance, we have the probation office, the community development office, we have the local council structures, we have teachers who provide education …then we also have the village committees that work with the children at grass root [village] *level.*

Female, Policy-maker, Government

Approximately one-fifth of participants revealed that their organization groups geographically adjacent districts together to form regions in certain parts of the country.

At the district, officials work at district level. And then go to, the supervision is mainly of the health facilities. Then we also go to the communities: sanitation development. Then outreaches, immunization, we go to the villages, surveillance again, we go to the communities.

Male, Program Manager, Government

B. Resource Development

Half of the participants also noted that their organization developed their own resources such as manuals, standard operating procedures, checklists, or guidelines that may assist with implementation or guidance for field-level staff and activities (at district-level facilities or community-level clinics).

In the second theme, respondents indicated that resource development was aimed toward internal use in their organizations, whether it was at headquarters or for support for district-level or facility-level activities.

We have redesigned the strategy on how to support the districts and sites. We have developed the quality management plan which entails all these other things, the indicators we shall be using, how the infrastructure of the personnel shall be, how the senior management will support the project staff.

Male, QA Director, NGO

Only a few participants said that their organizations developed information, education, and communication (IEC) materials for use by health workers, while some respondents noted that they wrote journal articles for external dissemination.

1. Resource Development Assistance

One-fifth of participants noted that funding was needed for resource development but did not specify what services they need. Some alluded to translation services or printing costs. Several other participants identified technical assistance as a need, and a few identified the need for KM mechanisms such as a web portal and exchange visits between organizations.

In the second theme, several respondents identified the need for technical assistance from the national government (MoH and other ministries) and external organizations to help develop resources. Several sub-themes included buy-in, synthesis of resources for expedited use, and training. Buy-in or understanding of the materials by different entities was necessary for adoption by target audiences such as recipients of trainings in quality and patient safety curriculum. Assistance in training staff on recently developed materials was identified as a need among respondents.

2. Resource Adaptation

One-third of participants indicated that their organization adopted resources from the MoH, World Health Organization (WHO), and international implementing partners directly or adjusted the formatting for local use. Of these respondents, some noted that resources were contextually adapted for local use or programmatic need. Others said that MoH resources were adapted to ensure that the organization complied with national implementation standards, and some identified a need for translating these resources into local languages.

In the first theme, respondents noted that they adapted resources to fit the local context, since many guidelines and standards are developed at the national level by the MoH and implementing partners.

> *Some health professionals adapt health care information resources from elsewhere and they try to make it suit the local circumstances e.g. they might adapt a document like this and say change the cover page, text editing or the design or the language, and that comes to translation.*
> Male, Program Manager, Government

One respondent pointed out that while they were encouraged to adopt MoH tools for programmatic use, adaptation of MoH tools is not allowed.

3. Resource Adaptation Assistance

One-fourth of participants sought external technical assistance or capacity building for adoption of resources, another one-fourth of participants felt that funding would assist with adaption of these resources, and a few felt improved dissemination would encourage their staff to adopt resources for their work.

In the first theme, one respondent felt that technical assistance should come in the form of a seconded staff member, who could assist staff in learning and understanding standards of care.

> *It can be the ministry, it can be an international agency that seconds someone because truly we should work with seconded people, and they were building our capacities to adapt to certain international acceptable standards.*
> Female, Technical Advisor, NGO

Others alluded to the need for translation services, but the respondent did not connect that need to the lack of funding.

Respondents noted that translation services and easier access to resources would encourage their staff to adopt the resources and improve project implementation. One respondent noted that information needs to be tailored for different categories of staff members.

> *Finances, but also I think we need experts, to try calculate for us those things we think need to be translated in some simple languages, some of the, sometimes I think the level of understanding of*

our health care staff are not the same, and so when he knows it English it is very difficult to talk it out in the local language. And once you ask somebody to translate that what you want to pass, the message will be distorted.

<div align="right">Male, Administrative Staff, Government</div>

Others said that while guidelines from the MoH and international organizations are helpful, they are not always necessary or practical for their work. One respondent suggested a forum for discussing and agreeing upon the best way to implement policy guidelines.

Hmm (silence) well, one we may need really to agree, have a forum to discuss and agree together, do we really need to swallow this? Mark you these things usually come in project mode. We have USAID come in "Now you must do this.. You are doing it and you really feel this bit is unnecessary. To me it's not as practical as its going to happen you go to the village and it does not work. You know our cultural way of looking at things in the environment where we are does not conform very well with what sometimes we are given to do. You know, some of these things don't apply here very well. We do not have the luxury to be very systematic "step 1, step 2" If you look at the MoH documents there are very many steps, 10 steps! "Now, then do this" 10 steps? At practical level "ha, I think I have finished step 1, I think I am now on step 3" And then when they come, "why did you miss out step 5?"

<div align="right">Male, Program Manager, Government</div>

C.   Quality Improvement

Approximately one-third of participants are working on quality improvement initiatives, including collaborating with the MoH's Quality Assurance Department, leading quality improvement projects at facility sites, and providing trainings on quality improvement.

Some organizations use the peer-to-peer model in spreading quality improvement measures, encouraging high-performing facilities to visit ones that are not performing as well.

What we come up with is peer-to-peer coaching, whereby we figured out which site is doing very well in this aspect and we want the other struggling site come and visit. In a way we want them to build capacity with those who are struggling but somehow on the side of motivation with the other one who are doing well, they are being able to like their self whatever carrier, building their capacity to talk to the people and at the end of the day we are giving them some token of 25,000.

<div align="right">Male, QA Director, NGO</div>

Others provide technical training on quality improvement and financial resources to fund these activities.

At district level, we are implementing partners and we do provide technical support especially under the health sector and our part is building the capacity of health sector across all levels in the districts, to improve the quality of service, and we do support them financially. We sub-grant in the health sector through funding from Center for Disease Control.

<div align="right">Male, QA Coordinator, NGO</div>

While efforts are being made to disseminate quality improvement strategies, there is concern regarding the sustainability of these activities after funding ends.

We have said the implementation of quality improvement activities has multiple problems. They don't last. They don't work. Many people have come in they have done quality improvement it doesn't work, and they say "Oh! Yeah we have succeeded." But as soon as the projects go away the things come back to worse levels.

<div align="right">Male, Policy-maker, Government</div>

1.   Application of Quality Improvement Measures

When asked how respondents apply quality improvement strategies to their work, we received mixed responses, with one-fourth of participants saying they simply relay new information during meetings, another one-fourth of participants saying they hold trainings with their staff, and very few participants saying they disseminate information via email and print materials, arrange for exchange visits between facilities, or follow up with staff after meetings to check if quality improvement measures were implemented.

> *Of course when we get such guidelines especially with my focal person in charge of say HIV and after that we have to invite in-charges of units, introduce to them the guidelines and of course there are those targeted units so the focal person, HIV focal person together with the records assistant and some other members they go to those focused areas and or facilities where they are dealing with HIV testing and counseling and prevention of mother–child transmission. And of course there is also follow up because you have a change you have to keep following, are they using them as they have to be used?*
>
> Male, Program Manager, Government

Some organizations encourage adoption of quality improvement measures by recognizing and rewarding high-performing sites.

> *Yeah, we have used it to come up with some of the innovations I have told you, but we have also used it as a bench mark, we have decided to do, how do I do it as a motivation, each time we have identified that, this unit, if you look for example at the activities of the 5S they are performing you give them a reward.*
>
> Male, Program Manager, Government

Others identify gaps in performance and work to improve staff skills through trainings.

> *Yes. We have applied, as I have said. We implement. Training for example, we saw there was a gap in infection control; we had a workshop in infection control. We have seen gaps in emergency obstetric care. We also found gaps in ordering, we have worked with National Medical Stores to make a procurement plan.*
>
> Male, Program Manager, Government

Exchange visits are another method for facilitating the sharing of best practices and technical knowledge. These exchange visits complement formal trainings, which alone cannot ensure that individuals are familiar with how to implement quality improvement measures.

> *Well, when such information is shared, what I have seen done is that we try to have exchange visits. We have support exchange visits between our facilities and say, can we have St. Steven's visit Hoima Azuru HCIV, Christian HCIV and we see if they can have a thing or two to learn. When we receive such information also from, sometimes we collect we have to analyze the indicators that come in to say they are on retention of HIV or adherence. We know where to focus our energies and how to, we tend to have more focused technical assistance visits following such information also.*
>
> Male, Technical Advisor, NGO

> *Aahh, by exposure, you know, looked through a number of times some of my staffs on that team have not trained in quality improvement, some of them are actually national trainers, ok, but they have failed to show why they should be called national trainers and so how they translate what they know, to reflect what they are able to do on the ground is almost not there. But many times I have picked a few staffs and sent them on a learning visit and even exchange visits, they have come back when they are challenged and embarrassed, saying, if in Tororo they could do this, why not us, and you know what they are doing is what we are doing. And I think, if our staff*

cannot start, me I will start and they will find me somewhere, ok, I find this work more, better than taking them for a workshop, listen to the facilitators, take tea, sleep get the per diem, and tomorrow come back home and wait for another workshop. All that is learnt in the workshop will only be remembered when you go for another workshop.

<div align="right">Male, Program Manager, Government</div>

An MoH employee said that although guidelines are disseminated to implementing partners, they have no way of ensuring these guidelines are actually implemented and that the overwhelming number of policy documents is a barrier to tracking implementation.

Ok, we can send them to the health workers but then as a ministry we have a weak arm to ensure that actually they are used. If you are to go there about how many guidelines do we have? I think we have over 1000.

<div align="right">Female, Technical Advisor, Government</div>

2.   Quality Improvement Information Needs of Colleagues/Staff

When asked what quality improvement information their colleagues need, more than one-fourth of participants said clinical guidelines would be helpful, approximately one-sixth of participants said basic information on quality improvement for their staff is needed, and another one-sixth of participants said information needs to be packaged in a way that is easily digestible.

Some participants suggested the use of job aids as a way to bolster the skills of clinical staff, some of whom have not received much training and would benefit from aids to refer to during the workday.

For example if you know that somebody has guidelines on the management of common illnesses, you will know that he will use those guidelines and he will not be able to over supply or misuse drugs. Because then he will have proper guidelines, and of course, because they a number, most of our staffs are nurses or nursing aides, not of very highly trained, so they very much need job aides so that they can be able to refer if they are stuck. They can be able to refer, look at clinical signs and symptoms, and say this could be this disease according to this job aide.

<div align="right">Male, Administrative Staff, Government</div>

While job aids are useful and important, respondents emphasized the importance of simplifying information so that health workers easily understand the information presented to them.

Yes, job aids or guidelines. They need to be there in the simple terms. Yes. These guidelines, the health workers there do not have enough time to read, they are overwhelmed, they are few, so they need simple messages.

<div align="right">Male, Technical Advisor, NGO</div>

A few respondents said that basic information on quality improvement is needed, as some staff require an orientation to its basic principles, the importance of this approach to improving health care, and how to implement quality improvement measures.

When we started in 2009 we had an orientation of health care improvement, then the Health Care Improvement Project and most of the people who had not yet come, we have had many people, so I feel, and I had talked to one of our partners, I told him that you know we need to train our staff, so that they appreciate the health care improvement, you know, quality improvement, so that at the end of the day, when, we go there, we are talking the same language.

<div align="right">Male, Program Manager, NGO</div>

They need to understand the principles of quality improvement; they need to understand how to apply the principles of quality improvement in improving service delivery. So they also need to understand the steps they should take in applying quality improvement principles. Then they need to understand how they can organize how they can operate.

<div align="right">Male, Program Manager, Government</div>

3. Quality Improvement Information Needs of Respondents

More than one-third of participants said they need policy guidelines on quality improvement for their work, one-sixth of participants said information on best practices is needed, and a few would like to know how other organizations are implementing quality improvement measures. A few MoH employees expressed specific information needs around designing a system for collecting quality improvement indicators in order to compare districts.

Participants said there is an absence of courses on quality improvement, which is contributing to a dearth of trained staff, but at the same time the respondents believe the current quality improvement system is not based on rewarding skilled employees.

> *For now, under the MoH, to the best of my knowledge there's no institution providing any training of course in quality improvement. So at this level there are so few people who are knowledgeable in quality improvement and yet it's a systematic system which is not based on how smart or good one is.*
>
> Male, QA Coordinator, NGO

Others said they are eager to learn from and collaborate with implementing partners and become familiar with quality improvement indicators they should be tracking in their programs.

> *I need updates, as an advisor, somehow I will need to be ahead, updates of the quality improvement science, also sharing experience nationally and internationally to see that whether these things are possible or not, and then regular briefs maybe on what's new, it can be on a weekly basis, to ensure that is where you can get it.*
>
> Male, Technical Advisor, NGO

Some said practical information on how to implement quality improvement measures is needed, particularly in the context of resource-poor settings.

4. Quality Improvement Information Sharing Strategies

More than two-thirds of participants cited meetings as the most effective approach to sharing quality improvement information. Approximately half of participants suggested trainings and emails as the best way to share quality improvement information. A few participants suggested disseminating print materials, radio broadcasts, posting information on notice boards, journal clubs, phone calls, KM web portal, and continuing medical education courses as avenues for sharing quality improvement information.

One respondent said they hold quarterly meetings with district managers, where best practices are shared and performance indicators presented to site managers to provide feedback on their facilities.

> *We normally have quarterly DHOs meetings where we engage the district leadership in health and listen to their concerns about the project and we also tell them developments from the project and ministry because we are working on behalf of ministry. So in a way, we also give them a session where they share QI work and one district, Kiruhuura, the DHO stood up and said 'you know what, we are being there to ensure that all sites have teams. We have started emphasizing the need for people to carry minutes to those data review meetings'. And all the DHOs said that's a good practice. We have been getting challenges here and there of how to make sure sites are functioning, the QI teams. So in a way, sharing information may be a solution for others' work in those fora. And then the other thing which works is, we generated some kind of data for the sites and we said, look, 'these are the areas where you are not performing well'. They quickly are able to be focused to those areas other than just leaving them. People have that tendency of fearing maths, so we do generate data in very analyzed form which is now user friendly and their work is to come up with ideas on how to fix those performance gaps.*
>
> Male, QA Coordinator, NGO

One-fourth of participants said email is not the best way to communicate information, since Internet access is inconsistent across organizations. And even if email is available, staff do not always regularly check their accounts. One organization said they email information to national- and district-level staff, but will distribute print copies to community-level facilities.

5.   Accessing Quality Improvement Information

Sources of quality improvement information were very few and included the MoH, implementing partners, colleagues, ASSIST, online courses, resource centers within organizations, journal clubs, and conferences.

A respondent said he frequently seeks quality improvement information from his colleagues, including senior management and peers at other district health offices.

> *I seek from my seniors, somebody like Chief Administrative Officer and Personnel when may be it comes to the management of human resource and of course and sometimes if there is any problem which is technical, I consult the ministry and sometimes in fact, consult my colleagues, the District Health Officers (DHOs), like the DHO of Kibaale, DHO of Kiboga, Masindi. You know we consult each other on some health-related issues which are happening in our district.*
>
> Male, Program Manager, Government

Others said they look to the MoH for new policy guidelines on quality improvement.

> *From MoH we always want them to update us with the new guidelines, the policy guidelines of health care improvement.*
>
> Male, Program Manager, NGO

The few respondents who said that accessing quality information is difficult cited not knowing credible sources for quality improvement information and lack of time to search for information. Participants said the MoH KM web portal (http://library.health.go.ug) had not been updated recently, despite suggestions to the site manager to upload new information to the site.

> *I don't think so because at some meetings they always ask that why don't you update the web site. And you say give the information it never comes. So I don't say they don't value the web site, because they would not be asking to update it. I think it's all about information sharing.*
>
> Male, Systems Administrator, Government

Another said that quality improvement information is available, but employees do not share this information with their colleagues.

> *I don't see the barriers it is just that we don't distribute the information. There is a lot of information in individual department on desks of people but it does not get out from where it is. If you want to access, you need to go to individuals. But slowly it has been improving because of portal. Then we get information from pharmacy division, quality, surveillance is good at distributing information, so I think it is culture and to change this I think you need a policy.*
>
> Male, Systems Administrator, Government

How information is packaged is a barrier as well in terms of ensuring that information is synthesized and terms simplified to reach audiences with different education and professional backgrounds.

> *One is this, what do you communicate according to the level, what kind of information should you communicate according to which level, and what information should you communicate to non-medical or medical, or what information do you communicate with policy-makers. So segregating information to particular target audience, to me, that is a challenge, because medical people will tend to medicalize it and take it as is, yet you may want certain pointers, if we can get that, actually it is an advocacy skill, you say I have this information how do I target such and such a population.*
>
> Male, Technical Advisor, Government

D.   Quality Improvement Website

When asked if they would be interested in a website on quality improvement, almost all participants said yes, but one-fourth of participants expressed reservations regarding the launch of a new web portal. Four said the MoH already has a website; among these four, three said the proposed web portal should be linked to the existing MoH site. Although there is currently a KM web portal that contains a sub-page on quality improvement, some respondents said it is not updated regularly.

Of the respondents who are interested in a quality improvement website, several said they would be interested in the following website features: photo gallery, resource page, social media, and events.

In terms of content for the website, respondents suggested several resources they would find useful for their work: updates on quality improvement measures, best practices, guidelines, success stories, case studies, and information on how other organizations are implementing quality improvement measures. A few participants also suggested assessment tools and articles. A few participants remarked on the need for simplifying information, so that information is concise and easily understood. Some health topics that were suggested for website content included orphans and vulnerable children, sanitation, child sexual assault, and treatment of malaria.

Some respondents said basic information on quality improvement – an introduction and what it entails – would be helpful.

> *I would love if there is a web site just some introduction for QI, the basics, information.*
>
> Male, Program Manager, NGO

Uganda-specific data was cited as a useful way to make quality improvement information relatable and actionable for organizations.

> *If there are best practices put the basic ones that we have done in Uganda, such that people can think that it is not so far away.*
>
> Male, Technical Advisor, Government

Others said step-by-step success stories are needed to show what resources are needed and how to effectively implement quality improvement measures.

> *I would like to see the intervention, where it took place, success stories all the time, not a onetime thing. I want to know if it's about error reporting, why is it taking place, how did they adapt it and adopt, what techniques are they using, how can they support us, the people who actually went and worked out, how can they get some of their ideas to be able to roll it out in the same, that very intervention to roll it out in our facility.*
>
> Female, Technical Advisor, NGO

Fact sheets were cited as a quick and easy way to relay pertinent information to health professionals.

> *We can learn from WHO, WHO has organized some things and they call it fact sheets and they are short but very formative fact sheets, and then you can put their fact sheets and as much detail as you can.*
>
> Male, Program Manager, Government

While best practices and success stories were suggested as important content by several participants, some said failure stories are also necessary to share what has not worked. Failure stories are also helpful in identifying potential barriers and how to resolve them, such as the sustainability of quality improvement measures.

> *That is the mistake we make, we only want good things, you show the bad ones and you say no, I think we need to avoid this. Yeah, you are only showing good things, it becomes boring. You also show the bad ones so that we learn from that.*
>
> Male, Policy-maker, Government

That would be good interactive, photos OK. Talk of different information and what has been achieved, results lessons learned, best practices, all of them can be there, the challenges and how those challenges can be addressed and what they have noticed the problems and what are the results. The measured results that you have achieved and say about it, Is it sustainable or not?

<div align="right">Male, Policy-Maker, Government</div>

Among respondents who expressed reservations about launching a quality improvement web portal, some suggested assisting the MoH with improving the current website rather than creating a new site.

This is what is existing, how can we improve that or do you think it is relevant to what we want.

<div align="right">Male, Systems Administrator, Government</div>

Respondents asked that website content be organized by topic and geographic location at the district and national levels.

Almost three-fourths of participants said English should be the primary language for the proposed website, but a few said resources should be translated into local languages, in particular for staff working at the community level.

English is okay for the higher level but when it comes to the lower level it still is very difficult. At that level (lower) we should do it in a language that the people understand. Translation is very important and we need to get a good translator, not people who will translate and distort the meaning. You know, at times English is different; you translate to the local language and distort the meaning.

<div align="right">Female, Policy-maker, Government</div>

E.   Information Delivery and Sharing Preferences

1.   Preferred Channels for Information Dissemination

Preferred channels for information dissemination varied by function. For example, when asked about sharing basic information within a project, email and/or posting on a notice board was the preferred communication channel.

Project Level

At all project levels first it would be emails.

<div align="right">Male, QA Director, NGO</div>

Putting things on the notice board.

<div align="right">Male, Program Manager, Government</div>

When attempting to disseminate more complicated or complex information, participants suggested a face-to-face format, such as a meeting, workshop or training.

Workshop or meetings. You know, a learning forum where you learn together, such as a meeting or a workshop, I think there you learn together and you have the opportunity to ask things and clarify.

<div align="right">Male, Program Manager, Government</div>

Face-to-face meetings were also suggested to communicate urgent matters.

Participants also suggested augmenting emails or face-to-face communication with audio-visual formats to ensure comprehension of technical knowledge.

At all project levels first it would be emails, but also if there are audio or CD ROMs where we could have some video, audio and those ones are very good, they drive the messages. The other

time we were talking to the project staff, some are not with medical background but because they saw this video we were showing them, a video on TB infection Control, there is, everyone you see, staff when coughing they do this (hand in illustration) and not doing this (fist on the mouth).

Male, QA Director, NGO

Participants that were involved in more clinical work through the government were interested in an electronic repository, because Internet access was more readily available.

The other day me and my colleague we were in a training and they gave us a very nice   web site where we can just click and get what is happening in the whole world in just about a second. Me I would say the best channel would be at the center at the referral district level we should encourage as much as possible IT and share the information on Internet because most of them have facilities.

Male, Program Manager, Government

Community Level

At the community level, participants suggested moving away from channels that required electricity, such as the Internet, and focusing on interpersonal communication.

I'm thinking of the levels, the household in Bugiri surely will not use electronic devices, but someone going there is the best way.

Female, Program Manager, NGO

Newsletters were articulated as a promising option.

I think the best way of sharing communication would be periodic newsletter. But the problem is that some people don't have emails and it goes back to adaptation of HM's. So I think newsletters would be okay.

Male, Program Manager, Government

Radio was considered a relevant option at the community level.

Of course in the communities, I think audio is OK. You can use it in meetings, CMEs, also you can use it in communities especially in those areas which are underserved and all that, you can use it.

Male, Program Manager, Government

Visual formats with a narrative/story were perceived as more impactful due to their ability to create vivid and compelling stories.

Especially visual channels, they create a lot of impact, yeah, because somebody is able   to see (silence) for instance when we are talking about HIV, then you bring cases of people who have been victims what they go through, it sends across a clear message.

Male, Teacher/Trainer, Government

2.   Information Sharing with Staff in Remote Areas

Participants were asked to describe how they share the latest health information with staff in remote areas of the country. Some of the most commonly cited approaches for communication were meetings, trainings (e.g., continuing medical education, workshops), dissemination of hard copy materials, and use of electronic communication channels. In some instances, these approaches were presented in combination with each other.

More than one-half of participants indicated the use of interpersonal approaches, such as dissemination meetings at the national or district level. Attendees at these meetings are expected to share information with staff at lower levels of the organization, but there is no way to ensure this actually happens.

The training was about managing what, it was for clinicians, I have forgotten, but [for] the recent one, but anyway we had to call them, we trained a few, and when we trained a few we gave them all the materials they needed and we left them to go down so they had to make their own arrangement at peripheral levels and they kept on training other people and disseminating information like that...

<div align="right">Female, Technical Advisor, NGO</div>

A little less than half of participants said they rely on hard copies to share information with staff in remote areas of the country, but transporting these materials is a challenge.

It's mainly through meetings and workshops and also if it's new guidelines, usually we print copies and take them, at times we do dissemination.

<div align="right">Female, Policy-maker, Government</div>

A little more than one-third of participants use electronic communication channels, such as email, video conferencing, and phone.

We have trainings, we have the recent video conferencing; the video conferencing facility that we have been given and eventually facilitates data collection through that system, to facilitate training through that system. Then which other activity have we done recently? Ah we have surveys.

<div align="right">Female, Program Manager, NGO</div>

In all accounts where emails were used, it was in addition to other communication methods.

Yeah, of course it's always done by email. They have modems and that's on a regular basis, then through phones or the available office lines during which communication is relayed. We also do have, like when the technical teams, depending on which is interested in relaying what information, like as far as quality assurance function, when my team is down in the rural area and they have information to share with them, they usually have meetings especially, Monday mornings. So during such meetings, they share the information.

<div align="right">Male, QI Coordinator, NGO</div>

Challenges to communicating with staff in remote areas include lack of Internet access. This issue was oftentimes connected to lack of access to other resources like modems, computers, and electricity.

Some participants said that a poor reading culture and comprehension issues are barriers to sharing of information, since disseminated materials are not always read or understood by staff.

3. Preferred Formats for Information

Participants were asked what formats they preferred to receive information about quality improvement. Applied instruments, such as job aids, checklists, and case studies, were the formats most commonly cited, as were other written materials with succinct summaries, such as implications of a change in a relevant treatment/clinical guideline.

We need job aids, checklists, and information brochures.

<div align="right">Male, Program Manager, NGO</div>

If you have some examples of other programs that have worked quite well, success stories, or case studies.

<div align="right">Female, Program Manager, NGO</div>

F. Access and Use of Resources

1. Mobile Use

Of the respondents who answered questions about mobile use at their organizations, all noted consistently that 100% of their staff had mobile phones and were able to leverage phones for the purpose of work and communicating information. Approximately one-third also used SMS for various purposes in

their job tasks or used mobiles phones for staff organization and logistics. A few said that their organizations use a closed user group to communicate with their staff about patient outcomes and service performance. A few mentioned mobile SMS applications that strengthen the flow of formal HMIS data.

Participants noted that dropped calls and poor network infrastructure were among the challenges that staff face in using their phones for work. One respondent noted that the telecommunication service provider would send unsolicited messages to staff, who were part of a closed network within their organization. These messages discouraged staff from opening work-related messages, due to the volume of SMS traffic on their phones.

> *You see this thing they call network, and also these unsolicited messages whether from the company or from the network, but it has tried to demotivate people from opening what is this message, even when it is going to be a useful health information, but if you received two, three or four initially, which are not so all that useful enough, another one comes, you say aah, sometime you delete even before reading because you might think that these are the same fellows promoting their things.*
>
> <div align="right">Male, Program Manager, Government</div>

One respondent's organization found that mobile phone use helped staff coordinate schedules and organize activities at the field level.

> *We try to keep in touch especially on schedules and activities, with the district and implementing partners. We also give ourselves or share updates. Colleagues also try to keep in touch with their supervisors. And also for confirmation of say dates or schedules and activities. Field coordination, the phones are very useful and pictures, that can later be up loaded to computers to back up reports. Generally its emergency information or follow ups say "check your mail." Then there is also general sharing and "what's up" depending on the type of phone.*
>
> <div align="right">Male, Technical Advisor, NGO</div>

Some respondents use CUG to facilitate communication among staff and dissemination of improvement information. One respondent mentioned that their CUG, the costs of which are subsidized by a telecom company, enables them to remotely participate in QI team meetings in the field and interact with teams directly in patient management. The respondent's connectivity to QI teams empowers them to make decisions regarding patient management.

> *Respondent: So as part of our work, we are calling sites to engage them in QI teams if they are, if they are having QI teams meetings and they are, and they are encamps drive to that place, they can say, let me know at what time you be having your meeting and I also participate, and I put it (phone) in loud speaker. So I like, I am part of their meeting, I even listening to them but also giving ideas.*
>
> *Interviewer: So is it like conferencing?*
>
> *Respondent: Yeah, it's like conferencing. The second thing is, we are discussing patients on phone. There are circumstances when they cannot manage patients. They want, the recent one, they called me and said, Doctor, we have here a child of 8 years and he's having, no, no, it was a child of 12 years, he's having HB of 8g, can we start this child on ARV? I said, no, guidelines, you open the guidelines, you have it there. Ok, what does it say? 7.5, but this one has 8. Please go ahead, start. So you see its empowering them to make clinical decisions, it's part of the,(pauses), and then the other thing, we are messaging, reminders on when to order for drugs, place in orders for drugs, we are reminding them this need for them to report on weekly basis Option B. (phone rings and respondent asks us to bear with the noise since phone is sophisticated and he cannot switch it off). So there are several things we are doing with these phones and of late, we are also saying, follow-up. Follow-up of patients, who have defaulted, patients who are lost to follow-up.*
>
> <div align="right">Male, QA Director, NGO</div>

Another use of mobile phones is the M-track application, a system where staff at different local organizations and implementing partners can track and disseminate information. The information is sent to a biostatistician in the network and then transferred back to the MoH. This information can cover health service issues, epidemics, and stock-outs.

Almost half of participants identified issues with network connectivity from telecom service providers. Respondents felt that issues with network connectivity were due to lack of coverage in rural areas, the telecom service provider's lack of investment in subsidized CUGs, and signal interference when a network's traffic is overburdened with users sending SMS. One respondent noted that poor network connectivity was due to specific locations on the network grid.

2.   Mobile (SMS)

One-third of participants mentioned using SMS reminders for clients as well as bulk SMS for staff health workers in the field. The majority mentioned staff reminders in offices. One respondent noted that bulk SMS sent to their organization's health workers was not technical information, but more for the purpose of handling logistics.

> *Interviewer: What of SMS among staff and colleagues, is it useful for sharing health information?*
>
> *Respondent: It can work, much as we have not used it but I think it can work. We have used bulk SMS to deliver information to our health workers but most of the time not technical, we have not used that one to share of technical information, or updates. It's just for notifying them, "there is something here, somebody is coming," notifications mainly but not sharing in that technical information. Though I think it can work.*
>
> Male, Program Manager, NGO

3.   Email Use

Approximately one-third of participants said email is a part of their daily Internet use. Email was used to communicate with colleagues and keep updated about current developments in their field, such as conferences or interesting papers. One respondent noted that email has been a great facilitator for sending directives to district personnel from national-level staff.

> *For me I use email quite a lot, send information. Actually these days what I do when there is a letter I am writing to the district, after I have got the signature of the PS or DG, I scan it and I email it and he next minute it has been received. Sometimes I follow it up with what you have been just asking. SMS, I say please check your email and then they get the letter and I think it has been working.*
>
> Male, Policy-maker, Government

About one-fifth of respondents cited email as their preferred channel of communication due to increasing infrastructure for email use.

> *Int: Internet, do you have access to email at work? Some of these we have already talked about.*
>
> *Resp: Yes, definitely I use it for communication, it is usually my preferred, if I can communicate, email is faster and better. And we are trying as much as possible to encourage, so we have installed in our health facilities, we are installing wireless, and very soon we shall have it, but some already have. At least there is Internet.*
>
> Male, Technical Advisor, Government

Approximately one-fourth of participants identified access as a key issue in their email use. The lack of email access in the lower tiers of the health system has been reported as a barrier to disseminating information upward or downward between certain actors.

However, another respondent noted that while email was a preferred channel, reaching other staff or personnel based around the country was dependent on Internet access. A few participants said email was their main source of health care improvement information, while a few other participants use email as a mechanism for communication with the field. One respondent noted that email was used to connect the national-level Ministry officials, implementing partners, local organizations, and district-level officers, especially in communicating new guidelines and ensuring the coordination of information-sharing for health system operations.

4.   Internet Use

One-third of participants identified access as a key barrier in Internet use. Out of this subset, most respondents indicated that they have consistent access at the office, but the network might be slow. One respondent indicated that they use Internet cafes to accomplish some work-related deliverables. Another respondent noted that staff in his office had to take on the burden of paying for access themselves.

> *We have but depending on the organization but now as a ministry for me my modem, I now, I receive top up like from UNICEF but now sometimes they give you like 1GB, I use more than 1GB myself so they give me 1GB I use it in one week and buy more myself because I need to be up and running. Then as a ministry sometimes, they may take long to top up and the entire building will be down.*

<div align="right">Female, Technical Advisor, Government</div>

Approximately one-third of participants indicated that their Internet use encompassed information searches in their typical workdays—some respondents indicated that they search information on the Internet for research-related activities such as literature reviews. Others did information searches for the purpose of preparing themselves for meetings.

One-fifth of participants noted that Internet access facilitated information sharing with colleagues, partners, and others to varying degrees. Using email communication, respondents shared latest project developments or alerts with staff in addition to any information from journals or briefs. One respondent shared information with staff members at a meeting to make a contribution to the discussion.

> ***Interviewer:*** *Reading, investigation, communication and…*

> ***Respondent****: …getting new ideas. It's like if I am going for a meeting and in this meeting we are going to discuss something. I am going to search, so that when I go, I am not a fool, I go and make a contribution.*

<div align="right">Male, Policy-Maker, Government</div>

5.   Printer

Almost all of the participants have access to a printer in their organization. However, a few stated that their organizations struggle with the expense of replacing toner and paper.

6.   Photocopier

A little over half of participants have access to a photocopier in their organization. A few indicated that there were photocopiers in their office, but due to lack of maintenance, they broke down and are not usable.

IV. DISCUSSION

KM Systems: Few respondents reported a KM system in place at their organization for gathering, synthesizing, and disseminating information. While some respondents said they have a resource center or library, most said new information is usually disseminated through meetings and that information is not always synthesized or reformatted in a way that is easy to read. Some organizations are developing their

own resources, such as guidelines and checklists for staff, but many said they require assistance in the form of funds to develop resources and technical guidance on drafting content.

Quality Improvement: Improvement knowledge varied among participants, with many saying they would like basic information on it, such as its definition and examples of it. Participants said synthesized quality improvement information and how-to knowledge in the form of practical tools, such as job aids and case studies, would be useful for training staff on designing and implementing improvement activities.

Existing KM Web Portal: Only MoH employees at the national level expressed familiarity with the MoH's KM web portal, suggesting that the portal is not widely used outside of the MoH. Some respondents said the portal is not regularly updated, which may be a contributing factor in why few NGO employees are aware of the website.

Internet Access: Internet access varies across the country and is more prevalent at the national level of the health system among government employees. Some respondents reported having to use their own personal resources to ensure consistent access; others indicated that demand for professional use has outweighed their organization's capacity ability to deliver that access. Internet access is almost nonexistent at the community level, where access to electricity, computers, and modems are barriers to use.

Email Access and Use: Although email is available at the national level, respondents said it is infrequently used and not the best method for disseminating information. Participants said interpersonal communication strategies, such as meetings and workshops, are effective approaches to sharing information in their organizations.

Mobile Phone Use: Mobile phone use is common at all levels of the health system, but network coverage is inconsistent in some areas of the country. Participants reported using phone calls and text-messaging for work purposes, the use of which is dependent on personal funds for these services and network coverage in their area. Some organizations have partnerships with leading telecommunication companies to provide free SMS messages in closed user groups, so that staff members are able to easily communicate with each other.

V. RECOMMENDATIONS AND WAY FORWARD

A. Mobile Network

Since mobile use is universal at all levels of the health system, the rapid and streamlined exchange and dissemination of improvement knowledge would gain most utility through SMS bulk messaging. The creation of this knowledge is contingent on the context of its use. Some respondents have already noted that they use existing CUGs within their own organizations or professional networks.

If use is limited to a network of national-level policy-makers and program managers, we recommend a subscription to SMS bulk messaging that directs members to the latest tools and strategies on the MoH's KM portal. In lieu of infrequent email and Internet access, internal communication within organizations about improvement activities could benefit from a mobile-based CUG—facilitating communication from a national-level office to field-level operations or offices in lower tiers of the health system.

However, the greatest utility of a CUG would be seen in the implementation of an improvement activity itself. Improvement teams in multiple sites that are testing changes can readily share their successful changes with counterparts at other sites. The context-based nature of this messaging would strengthen the standards to which change ideas are being implemented and monitored by teams. A previous study has shown that a structured CUG network of providers and health workers in their own professional

environments have facilitated greater time-sensitive information exchange in addition to improved access to information.[2]

Several platforms offered by entities such as Switchboard and Frontline SMS already have created and nurtured successful mobile-based communities of health professionals in similar care environments. For example, Switchboard works with national telecom companies to offer services such as free calling networks, nationwide phone registry, and bulk text messaging to organizations working to strengthen health worker capacity.

While the MoH has instituted a moratorium on eHealth piloting, the development of a CUG among providers and improvement science can be repurposed not as an eHealth intervention, but rather as a way of leveraging existing CUG networks among key stakeholders.

B.   Existing KM Web Portal

To increase coordination and understanding of national health care improvement initiatives and products, the existing KM portal needs content development and management improvements. Holding different stakeholders accountable to the same benchmarks (set by donors and the MoH) would require that those stakeholders all have equal access to the MoH's clearly-articulated improvement strategies. Thus, the KM portal should be a one-stop shop for improvement-related resources, which can easily be accessed by audiences with low-bandwidth and/or intermittent Internet access. The involvement of the Quality Assurance Department and the ICT Department within the MoH will be integral to successful convening of stakeholders (including multiple tiers of MoH offices, donors, implementing partners, and community-based organizations) to contribute to a body of standard improvement methods and tools in each area of care. At a minimum, the portal should include a curated list of links to external improvement-related resources, such as the WHO's Patient Safety Measure Tools and the "Improvement Science" page on the USAID ASSIST knowledge portal. Furthermore, visitors can be drawn to the website through the use of bulk email sent through an opt-in subscription list (e.g., MailChimp, iContact) when something new is posted. This email list would need to be compiled in consultation with the MoH and implementing partners involved in quality improvement work.

C.   Print and Electronic Resources

Practical print and electronic resources, such as job aids, checklists, and synthesized guidance, offer a useful approach for disseminating quality improvement information to service providers, technical advisors, program managers, and policy-makers. These resources will assist with providing basic information on quality improvement and how-to guides on implementing quality improvement strategies in an easily digestible format. Working with the MoH and quality improvement partners, ASSIST can provide technical support in developing these resources and disseminating electronic versions through the KM portal and print versions through face-to-face sessions as part of the blended learning activity suggested earlier.

D.   Blended Learning

A blended learning activity involving a quality improvement training curriculum and face-to-face instruction would strengthen key competencies for improvement science and implementation. As a part compiling existing QI resources created by the MoH, ASSIST can develop a curriculum that covers the core

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[2] Kaonga, N.N., Labrique, A., Mechael, P., Akosah, E., Ohemeng-Dapaah, S., Baah, J.S., Kodie, R., Kanter, A.S., and O. Levin. 2013. Mobile phones and social structures: an exploration of a closed user group in rural Ghana. *BMC Medical Informatics and Decision Making* [Internet]. Sep 3: 13(1):100. Available from: http://www.biomedcentral.com/1472-6947/13/100/citation.

competencies for improvement science. The curriculum would communicate a standard for how to appropriately start and sustain an improvement effort and fill the information gap for improvement methods at all levels of the health system. The development of a curriculum will depend on audience need and their existing competencies, while other facets of the blended learning activity can be fulfilled by internal and external technical assistance. Additionally, an interactive voice response (IVR) system could reinforce learning by sending a series of questions based on a course recently completed by the user, where the user selects an answer choice and is informed if their selection was correct or not. IVR allows for information to be sent via SMS messages or pre-recorded voice messages, allowing those subscribed to the curriculum to be reinforce learning through their phone without requiring the use of a smartphone.

VI. APPENDIX

JOHNS HOPKINS BLOOMBERG SCHOOL OF PUBLIC HEALTH

USAID Applying Science to Strengthen and Improve Systems (ASSIST): Uganda Information Needs Assessment
Key Informant Interview Guide

General Information
a. Date of interview:
b. Interview conducted: In person __   By phone ____   By skype ____
c. Interviewer:
d. Interview start time: Interview end time: Total time for interview:
                                                                      (Total number of minutes)
5. Location where interview took place:

Introduction

Hello. My name is <insert your name>. I am part of a team conducting a health information needs assessment. The USAID ASSIST Project is developing a web portal for Ugandan health professionals, which will be a repository of health care improvement information. We would like to hear what kind of health care improvement information you need for your work, so we can better meet information needs and improve the quality of health care in Uganda.

When we talk today about health care improvement information, we mean information and knowledge about how to improve health care quality and effectiveness, such as clinical protocols, program guidelines, and job aids or even practical lessons from other health care providers. We don't mean service statistics or other data provided by the Health Information System.

The interview will take about one hour to complete and you can stop the interview at any point if you'd like. Please share your opinions, both positive and negative. Everything that you say today will be kept confidential. I will be taking notes during the interview and would like to audio record this conversation to back up my note-taking. The needs assessment team will be the only ones to read my notes and listen to the audio-tape.

Do you have any questions?

Please take a moment to go over the check list below before we start.
Please select the category that best describes you—i.e., check only one box for each of the areas.

Job Function:
☐ Policy-MakerPolicy-maker
☐ Program manager
☐ Technical advisor
☐ Administrative staff
☐ Service provider/clinician
☐ Community health worker
☐ Researcher/evaluator
☐ Teacher/trainer
☐ Librarian/information officer
☐ Other, please specify _____

Organization/clinical institution:
☐ Academic/research institution
☐ NGO/PVO (local or international / non-profit or for profit)
☐ Government/ministry
☐ United Nations Agency
☐ Private commercial sector
☐ Other, please specify _____

City/Town where organization is located (Please write your response):

Highest level of education completed:
☐ Primary School
☐ Secondary School
☐ Technical School
☐ Para Medical School
☐ 2-year College (Associate's)
☐ 4-year College (Bachelor's)
☐ Graduate School (Master's, 2 years)
☐ Graduate School (PhD)
☐ Medical School (MD)

Gender (Please write your response):

Age
☐ 18 to 24
☐ 25 to 34
☐ 35 to 44
☐ 45 to 54
☐ 55 to 64
☐ 65+

Preferred languages for your work (Please write your response):

Thank you!
Now we are starting the main interview.

Background

1. First, I would like you to describe your working day. Can you tell me what you did yesterday all day? (Let the person describe her/his day; Provide probes so that the person able to describe her/his work; let them describe any important incidents or events that may have happened; also probe and ask if the event/incident is typical or is specific to that day)

2. Please describe your role (i.e., primary job/title) in the organization. [Probe: ask about their specific job duties]

3. Please describe the overall goal and objectives of this organization/program.
   a. Services provided and to whom?
   b. At which levels does your organization work (national, district, community)?

Demand for Health Care Improvement Topics

4. What health service delivery issues does your organization work on? Of the health service delivery issues your organization works on, which ones are a priority?

5. What specific health care improvement information do people in your organization need to aid in their work?
   a. What health care improvement information do you need to perform your job?

Information Seeking and Sharing

6. Now let's talk about how you and other people in your organization seek and share health care improvement information for work.

   a. What types of health care improvement information do you seek on a regular basis for your work? Please give a recent example. [Probe: ask what they did with the information]

   b. How is the latest health care improvement information shared within your organization? [Probes: Telephone? Email? Meetings?] Please give a recent example. [Probe: What works/does not work with your organization's approach to sharing health information?

   c. How is new health care improvement information used for your organization's programs? For example, when the national policy guidelines for HIV counseling and testing were released, how were they used by your organization? [Note: if this example is not relevant for the participant, ask them to provide their own example]

   d. Does your organization have staff in remote areas of the country? If yes, are you familiar with how the latest health care improvement information is shared with staff in remote areas? If you are familiar with how information is shared, can you explain how information is relayed to staff? [Probe: Can you give an example?] What types of resources and/or activities would help better reach colleagues or clients in remote areas with important health information? Please describe how these resources would help reach these colleagues or clients.

   e. Does anyone in your organization have the job of gathering, organizing, storing, and sharing the latest health care improvement information? If yes, who is that person? What does that person do and how do they gather, organize, store, and share information? How does this person encourage others to use that information in practice? [Ask for this person's contact

information to see if they're available for an interview]

Barriers

7. Next let's discuss the biggest barriers or challenges to accessing, sharing and using up-to-date information related to your job.

    a. What barriers prevent you from accessing health care improvement information for your work?

    b. What are the barriers to using health care improvement information for program design or implementation? By this, we mean your ability to use information for effective program design and implementation – to use information and translate it into action. For example, sometimes you can have the information but don't know how you can use it to improve your programs.

    c. Do you share health information with colleagues and staff? If yes, what are the barriers to communicating health information to staff and colleagues?

    d. How can these barriers be addressed, so that you and your colleagues have access to and are able to use current health care improvement information for your work?

Tools and Resources

8. Do you develop resources to help you and other colleagues improve the way you do your job? What types of resources do you develop? (e.g., manuals, articles, guidelines, etc.)? What kind of assistance (e.g. latest health care improvement documents, case studies from other health organizations, translation services) do you need to help develop health care improvement information resources?

9. Some health professionals adapt health care information resources to best fit local circumstances. Adaptation is defined as text editing, changing design, layout, language, and/or graphics to better meet specific needs.

    a. Do you have a need for adapting health care improvement information resources? Why? Please describe the most common changes you make to resources when you adapt them.

    b. What kind of assistance (e.g. translating resources) do you need to help adapt health care improvement information resources?

Information Formats

10. What are the best communication channels for your organization to receive health information [Probes: Radio? Television? Internet? Mobile phone? Paper/printed documents? Interpersonal communication?] Please rank these channels by which ones are convenient for receiving health information.

11. Health care improvement resources can be delivered in the following formats: job aids, checklists, guidelines, compilations of tested changes, patient education materials, task lists, job descriptions, assessment tools, and case studies. Of these resource formats, which ones would meet your organization's information needs?

12. Would your organization be interested in a web site on health care improvement if one could be created?
    a.   What features (e.g. latest updates feed, social media links – Facebook, Twitter,

resources page, photo gallery, events) would you like to see on the web site?

    b.   What types of information? Examples of information could be guides on improving health care services or health care strategies from other programs that have worked well.

    c.   How would you like the information to be organized [Probe: by geographic region, topic area, organization type]?

13. In what language(s) would health information be most useful for your organization? [Probe: Consider levels/different job roles.]

14. How could audio or video (e.g. classes, trainings) be used to share health care improvement information by your organization? How could others use audio or video to share health care improvement information?

Information Delivery and Sharing Preferences

Finally, let's talk about technologies that your organization and its staff use for work-related activities.

15. Mobile/Cell Phone Technology

    a. Out of 10 colleagues how many have a mobile phone?

    b. How do members of this organization use mobile phones as part of their work? How do you use mobile phones as part of your work?

    c. How is SMS used among staff and colleagues? Is it useful for sharing health information? [Note: SMS or Short Message Service is a communication service which allows the interchange of short text messages between mobile telephone devices.]

    d. What challenges do people experience in using mobile phones for work purposes?

16. Internet/Online Access

    a. Do you have access to email at work? If yes, how do you use email for your work? If no, why do you not have access to email?

    b. Do you have access to the Internet (e.g. visiting websites) at work? If yes, how do you use the Internet for your work? If no, why do you not have access to the Internet?

    c. If you have access to the Internet at your work, where do you access it?

    d. What challenges have been experienced in using the Internet at your organization?

17. Do you have access to a printer at work? If not, how are electronic documents received?

18. Do you have access to a photocopier at work? If not, how are print materials disseminated to staff?

19. Of the technologies mentioned here, are there any that are better for transferring/sharing health information? Why?

Other

20. What else should be added to our conversation?