Collaborative learning and stakeholder engagement: lessons and implications of the revitalization of the Continuing Professional Development policy for health workers in Nigeria

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Improving the knowledge and skills of Medical Laboratory Scientists (MLSs) is imperative and a key intervention area in Nigeria. Earning continuing professional development (CPD) credits is a requirement for re-licensing of MLSs. While the requirement was adopted in 1996, it was rarely practiced and enforced due to the absence of adequate stakeholder commitment and a lack of comprehensive and accessible accredited activities. Recognizing these challenges, a multi-stakeholder partnership was built to expand upon and institutionalize the previously defunct CPD Policy and develop e-learning courses for CPD credits. A mixed method evaluation concluded that developing e-learning courses for CPD credits made the policy more accessible to MLSs. In addition, the evaluation concluded that third generation knowledge management principles improved stakeholder collaboration and joint adoption and implementation of the Policy and e-learning courses. Results and lessons learned can be adopted by other cadres of health workers and government agencies on various global health topics.

Keywords: mixed methods; evaluation; capacity development; development projects; medical staff; professional development; Nigeria

The role of stakeholder engagement in knowledge management (KM) has been well recognized and documented in recent years. To foster effective partnership, it is important to understand different skill levels and previous experiences of each of the project partners and make the project flexible and adaptive to constant changes in group dynamics. Collaborative learning and participatory approach can continuously guide and enhance various project activities toward the achievement of common goals. It is particularly true in the field of KM for global health and development as examined in this paper. This paper presents lessons learned and implications from a multi-stakeholder project aimed to revitalize Nigeria's Continuous Professional Development (CPD) Policy for Medial Laboratory Scientists (MLSs). It aims to assess to what extent the partners of the project feel that the project objectives have been met as a result of participating in a variety of stakeholder engagement techniques throughout the planning and implementation of project activities. Human resources for health are arguably the most important inputs into the health system. The quality of the system depends largely upon the knowledge, skills, motivation, and performance of those individuals responsible for delivering health services (WHO 2000). People working within a health system rely on specific knowledge to inform their decision making, improve the quality of services, and reduce duplication of efforts. KM, namely connecting the right people to the right data, information and knowledge at the right time, is increasingly being considered as an effective approach to help strengthen health systems (K4Health 2012).

Building and sustaining robust human resources requires adequately trained health personnel, infrastructure, equipment, and evidence-based policy (WHO 2000). Creating systems for registration, licensure, and re-licensing of health professionals are frequently used quality assurance tools in health care and serve as valuable instruments in the broader function of health care regulation (Necochea 2006). Licensure verifies that a health provider meets the standards of competency to perform their work safely and effectively. Health professionals' licenses should be renewed regularly through various mechanisms that include continuous education, self-administered tests, and examinations (Necochea 2006).

In Nigeria, earning CPD credits is a requirement for re-licensing of MLSs. While the requirement was adopted in 1996 by the Medical Laboratory Science Council of Nigeria (MLSCN), it was rarely practiced and enforced due to the absence of adequate stakeholder commitment and a lack of comprehensive and accessible accredited activities. Most MLSs, therefore, provided critical laboratory services without the opportunity for professional skills and knowledge improvement, negatively impacting the quality of laboratory service delivery. Recognizing these challenges, a multi-stakeholder partnership was built to expand upon and institutionalize the previously defunct CPD Policy. From the start, each stakeholder acknowledged the importance of mutual learning by agreeing upon the main roles and responsibilities of each partner in light of the respective missions of each organization.

In this partnership, there are four key organizational stakeholders with specific roles:

- 1) The Nigeria Mission of the US Agency for International Development (USAID/Nigeria) as the project funding agency, provides overall management oversight, represents the donor community, and contributes knowledge of and linkages to other funded medical laboratory strengthening activities.
- 2) Knowledge for Health (K4Health) Project of the Johns Hopkins Bloomberg School of Public Health Center for Communication Programs (JHU·CCP) represents an international partner with almost a decade of experience in providing technical assistance to build local organizations' capacity in KM initiatives, including the development of e-learning courses for continuing education of public health professionals in developing countries.
- 3) The MLSCN represents the Government of Nigeria is the regulatory and accrediting body for medical laboratory practice, professionals, facilities and educational institutions, and provides knowledge from its experience implementing the 1996 CPD Policy.
- 4) The Association for Medical Laboratory Scientist of Nigeria (AMLSN) represents the target audience of MLS and develops capacity to author e-learning courses for CPD credit. Its

vision is to foster comprehensive development of the profession and welfare of MLSs and to develop educational opportunities that serve as a catalyst to improve service delivery.

The partnership came together around a two-year project started in September 2011 to achieve the following three objectives:

- 1) Increase MLSs' access to quality CPD to improve skills and proficiency of laboratory professionals;
- 2) Develop and build local capacity on the design, implementation, and management of a good quality and sustainable CPD Program which is an essential component in Laboratory Quality Management Systems (LQMS); and
- 3) Institutionalize the consistent use of standard-CPD credits as a requisite for licensure of MLSs by the Government of Nigeria.

From the onset of the project, all stakeholders recognized two critical success factors, namely equal partnership of two local organizations in Nigeria and a sense of ownership by them. Both MLSCN and AMLSN served as local knowledge brokers and provided their knowledge and know-how related to their expertise in the field of medical laboratory sciences. The role of K4Health was to support them by providing its project management and monitoring and evaluation knowledge from its experiences implementing e-learning and continuing education initiatives. Working side-by-side with AMLSN and MLSCN, K4Health planned to gradually transfer responsibility and coordination of all project activities to AMLSN and MLSCN and ensure that they build the capacity to lead the activities beyond the funding period.

The remainder of this paper will discuss the KM constructs used to guide the Nigeria CPD project, the strategies and techniques to foster multi-stakeholder engagement, the mixed-method evaluation to document the effectiveness of engagement and collaboration processes, and findings, lessons learned, and recommendations to the future. The findings will inform not only future stakeholder engagement among the partner organizations but also provide other organizations and stakeholders with insights and suggested approaches to consider when implementing a KM intervention, initiative, or project to improve health care service delivery and, more broadly, development outcomes.

Theory

The Nigeria CPD project is guided by both proven concepts and new approaches in the field of KM and multi-stakeholder engagement.

KM evolution and the latest generation

The project has examined the KM evolution process to identify effective strategies that foster knowledge exchange and learning among stakeholders. While slight variations exist, KM scholars share common themes to describe KM concepts that have evolved greatly over the past

few decades. A number of important major shifts or expansions from the early 1990s to mid-2000s include:

- An 'information communication technology (ICT)-oriented approach' that focuses on the knowledge organization and cost reduction to a more 'people and process-centered approach; to support knowledge synthesis and sharing (Ferguson et al 2008, NHS National Library for Health 2006);
- One-way knowledge transfer to multi-way knowledge flow (Ferguson and Cummings 2007); and
- Knowledge creation and/sharing within organizations to inter-organizational networking and communities of practice (Laszlo 2002, Koenig 2005).

The dominant KM paradigm emphasizes the importance of ethical social innovation in global development such as the democratization of knowledge and involvement of society at large rather than satisfying organizational needs (Laszlo 2002). There is also a focus on KM4D's 3rd generation KM concept of 'situated mutual learning.' This concept which explains how different groups and organizations with diverse interests and social positions can interact with one another to capture commonly shared knowledge, and co-produce new knowledge in a negotiation process to reconcile different interests (Klerkx 2011, Ferguson et al 2008). Thus, the latest generation of KM has evolved in a way so that development projects, such as the one described herein, could employ KM within a context of social responsibility among organizations and individuals and influence policy for the purpose of benefiting society at large.

Social knowledge management as emerging paradigm

Another emerging paradigm that has influenced the design of the Nigeria CPD project is JHU·CCP's social KM approach, which is consistent with the latest KM generation concepts. Principles of the social KM approach guided the project's stakeholder engagement objectives as outlined below.

Social KM has the following characteristics:

- It puts people first, emphasizing the fundamental role that people play in all KM efforts at the individual level, within organizations, and across communities and societies. It aims to engage audiences as both producers and consumers of knowledge and considering them in every decision.
- It focuses on the multifaceted KM system: 1) Introducing KM processes to generate, capture, synthesize, exchange and use knowledge (as illustrated in Figure 1 below); 2) Using technology to support KM interventions; 3) Strengthening organizational systems and structures to support a KM culture; and 4) harnessing relationships to accelerate knowledge exchange and use.
- It applies an iterative and adaptive implementation approach: social KM interventions are built on an implementation science framework that focuses on measurement and learning before, during, and after implementation. It includes feedback loops that allow for iterative improvements to ensure responsiveness to audience needs and preferences.

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• Leverages social network theory, harnesses the power of collaborative relationships, uses social media to engage in meaningful conversation and facilitates social learning (Johns Hopkins Bloomberg School of Public Health Center for Communication 2013).



Figure 1: KM Cycle for the Nigeria CPD Project

Source: Adapted from the Knowledge Management for Global Health Logic Model (Global Health Knowledge Collaborative 2013)

Collectively both the new generation KM concepts and social KM approach emphasize the importance of inter-organizational networking and multi-stakeholder partnership to achieve global development goals. KM initiatives that are community-oriented and practice-based can effectively engage and empower local project partners through the life cycle of a project: design, implementation, monitoring, and evaluation.

Stakeholder Engagement

Stakeholder engagement broadly refers to a framework of policies, principles, and techniques which ensure that ... communities, individuals, groups, and organizations have the opportunity to be engaged in a meaningful way in the process of decision-making that will affect them, or in which they have an interest. (Yee 2010: 3)

Stakeholder engagement is a means of fostering buy-in or commitment into a project, promoting participatory and transparent decision making (e.g., providing opportunities to develop

knowledge for making informed choices) and, as a result, reducing conflict over decisions between decision-makers, groups involved, and beneficiaries. In order to ensure effective stakeholder engagement, the Nigeria CPD project team employed a number of methods, including:

- Technical consultations;
- Baseline needs assessment of MLSs;
- Joint review of key findings from the baseline needs assessment;
- Documentation of agreed upon roles and responsibilities;
- Work plan development;
- Strategic planning; and
- Training workshops.

These methods were used to elicit stakeholder views and insights (i.e., those of partner organizations and the MLS beneficiaries) to guide project planning, increase transparency, reduce conflict over key topics, increase support for the CPD Policy and e-learning courses, and ultimately, empower AMLSN and MLSCN to continue project activities beyond the project-funded period.

The first technical consultation meeting was organized to garner support and commitment from the AMLSN and MLSCN. The meeting provided the participants with an important opportunity to have an open and trusted dialogue by sharing their excitement and concerns. To address some of the concerns related to access, connectivity, and general support of CPD activities, a baseline needs assessment of the target audience of MLSs was designed and conducted which aimed to:

- examine the training and information needs of MLSs, preferred sources of information, issues of access, and information-sharing preferences;
- better understand the comfort level and use of Web-based resources by MLSs; and
- inform e-learning course topics to be developed.

AMLSN and MLSCN took the lead to promote the survey, and over 250 MLSs participated in the assessment. The survey collected feedback from respondents throughout the country and among all types of medical center facilities. The respondents reported taking trainings offered by AMLSN and MLSCN in the past and often did not differentiate those offered by AMLSN from those offered by MLSCN, thus revealing the importance of AMLSN and MLSCN partnering on activities in which they have a shared vision, such as this one.

Joint review of key findings from the baseline needs assessment provided the partners with a clear understanding of the issues and training needs of MLSs in order to design the project activities. In an effort to ensure that the voices and needs of MLSs were taken into consideration throughout the design process and not just at baseline, MLSCN held a stakeholder meeting to review draft versions of the revised CPD Policy and gather feedback to inform the final version

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that was made public on its website. In addition, AMLSN reached out to its membership to request their participation as volunteer technical reviewers and pilot testers of the e-learning courses to ensure they are accessible and are technically accurate.

While many of the partners' roles related to this project were pre-conceived at its onset, one of the most critical meetings involved a meeting to designate, come to a mutual agreement, and document roles and responsibilities for project implementation (see Table 1). Learning about the strengths and weaknesses (as well as the formal structures and fiscal states) of each partner occurred at this time. Predictably, learning between K4Health and the local partners occurred but, unexpectedly, it also occurred between AMLSN and MLSCN, especially in discussions related to staffing for the project. At the end of this meeting, a document outlining each partner's roles was signed and dated so that all partners could hold each other accountable. AMLSN and MLSCN were, and continue to be, closely aligned in the work they do to improve medical laboratory services and this project is helping to strengthen this bond.

JHU·CCP/K4Health	MLSCN	AMLSN	USAID/Nigeria
Coordinate and	• Develop policy for	• Identify course	Provide
oversee all	assigning CPD	authors	management
aspects of project	credits	• Host e-learning	oversight
implementation	• Review e-learning	courses	• Provide initial
Provide technical	courses and assign	development	funding
assistance	credits	training	• Facilitate
Report progress	• Use CPD credits as	• Develop,	communication
to	condition for re-	manage, launch,	among partners
USAID/Nigeria	licensing	and monitor the	Monitor progress
		courses	

 Table 1. Roles of partners

Work plan development involved all partners. Based on K4Health's experience facilitating development of work plans, an outline was drafted and reviewed with AMLSN and MLSCN. All parties then discussed overall structure and the timing for implementing the activities as well as the budget required. The process was based on mutual understanding of each partner's roles and responsibilities. Learning occurred as each partner explained the reasoning behind the decisions they advocated for while simultaneously considering the others' point of view. Most often, proposed activities were straightforward and readily agreed upon based on one or another partners' strengths. Both local partners used group discussions, strategic planning, and outreach to their membership and constituents to raise awareness about the revised CPD Policy and the accredited e-learning courses. A variety of communication channels were employed, such as press releases, TV and radio interviews, face-to-face meetings and presentations, and social media (e.g., posting announcements to their organizational websites and Facebook Groups).

Strategic planning was employed to involve AMLSN and MLSCN in project design and implementation and as a means to address challenges and issues of sustainability. AMLSN and

MLSCN both share a common goal of improving laboratory services for Nigerians; however, they serve distinct roles and are accountable to different groups. AMLSN serves primarily as a trade union engaged in lobbying and is accountable to all licensed MLSs who are required to become members by paying dues. MLSCN develops and enforces regulatory standards for medical laboratory science facilities and services and is accountable to the Federal Ministry of Health. Due to their differences in terms of who they are accountable to, a challenge arose over the imposition of a 'CPD fee' by the MLSCN. MLSCN viewed this fee as a strategy to ensure sustainability of the implementation of the CPD Policy. While AMLSN appreciated MLSCN's planning for the future, AMLSN did not agree entirely with the amount of the fee and suggested that it be shared between the two organizations.

Through strategic planning, the partnership tried to anticipate challenges to rolling out the elearning courses. A variety of plans were employed to address potential access issues including:

- creating a user instruction guide;
- providing free access via computers at AMLSN's and MLSCN's headquarter offices;
- allowing flexibility of course completion; and
- offering courses on a limited number of CD-ROMs.

However, there were unanticipated access challenges, such as malicious software affecting the ability of MLSs to take courses. This challenge is one example that revealed the importance of regularly engaging MLSs and making sure that there were systems in place that encouraged open lines of communication with them.

Training workshops were used primarily to build capacity of AMLSN in e-learning instructional design, course development process, and the content management systems (CMS) as well as build organizational capacity. MLSCN were trained on using the learning management system (LMS) where the e-learning courses were hosted and could be used to verify MLS completion of courses for CPD credits. Virtual trainings were organized as part of the course technical review process with AMLSN as well as the implementation of a CPD application review process with MLSCN.

Methodology

To assess to what extent the project objectives have been met, a mixed method evaluation was designed. The purpose of the evaluation was to not only assess the usefulness and use of the elearning courses as it relates to project objective 1, but also provide insight into the CPD Policy and the partnership as a whole (project objective 2) (see Table 2). It examined the following research questions.

- Which techniques or project activities were effective to ensure stakeholder engagement?
- What were key elements of success in facilitating collaborative learning and partnership?
- To what extent did partners understand their roles and responsibilities?
- To what extent did partners think that they were empowered to continue to take action?

The evaluation included three methods: 1) focus group discussions (FGDs) with MLSs who had and had not completed the accredited e-learning courses, 2) an online survey targeting all MLSs who had registered with the e-learning platform, and 3) in-depth interviews with key stakeholders. This mixed method approach guaranteed that the views and experiences of both partner organizations and the MLS beneficiaries were heard.

The FGDs and online survey focused on measuring the MLSs' reaction to the e-learning courses and revised CPD Policy, their increase in knowledge as a result of completing the e-learning courses, and their application of knowledge gained from the courses. In February 2013, two FGDs were conducted to explore practical applications of new information and knowledge gained from the e-learning courses among learners, suggestions for improvement, and willingness to pay for future courses. An email invitation was disseminated to MLSs registered with the LMS who identified their location as Abuja. AMLSN cross-referenced the list with their administrative records to further distinguish MLSs from Abuja city limits and Keffi, a suburb of Abuja. Themes that arose from the FGDs informed the design of an online survey that was disseminated to all learners who registered with the LMS to reach a more nationally representative sample of MLSs. The online survey was distributed to all email addresses in the LMS on March 5 and remained open until April 5, 2013.

Finally, in June 2013, key stakeholder interviews were conducted in by K4Health with AMLSN, MLSCN, and USAID/Nigeria, separately. The key stakeholder interviews were focused on identifying the challenges facing the partnership and ideas for improvement. While K4Health administered the interviews, the interviews were as much about improving the relationship between and among AMLSN, MLSCN, and USAID/Nigeria as they were with and between the aforementioned and K4Health.

A dissemination workshop with all key decision makers from each partner organization was organized to discuss the findings from the mix method evaluation, which will be presented in the next section, along with their implications. At the same time, it provided partners the opportunity to brainstorm immediate next steps to improve current activities and long-term plans to ensure the sustainability of project activities.

There are a number of limitations to this study. Given that the samples are convenience samples, there is selection bias. Results and analyses are representative of MLSs who successfully registered in the LMS *and* were willing to spend time responding to our questions through the FGDs, online survey, or even interviews. However, since the purpose of this study was to learn more about MLS' opinions about the AMLSN-authored e-learning courses and application of knowledge obtained, K4Health felt that the sampling strategy was sufficient.

Results

Findings from the FGDs and Online Survey

The findings from the FGDs and online survey revealed that the project is meeting objective 1: Increase Medical Laboratory Scientists' access to quality Continuing Professional Development (CPD) Programs, and by so doing achieve improved skills and proficiency of laboratory professionals by providing concrete examples and evidence pertaining to the acquisition of knowledge and skills and the self-reported application of knowledge gained from courses to individuals' jobs. The MLSs who have taken an AMLSN-authored, MLSCN-accredited elearning course are satisfied. The majority of respondents reported that:

- Their e-learning experience was worth the time that they invested, regardless as to whether or not they completed a course.
- They would be willing to pay for future CPD accredited courses, and would be willing to pay between N500 and N1000 per course.
- Of those who completed a course, nearly all reported that they had either greatly or somewhat improved their job performance in the following areas as a result of completing a course: ability to provide accurate diagnosis; ability to conduct diagnosis safely; technical knowledge; ability to provide appropriate information to clients; understanding of biological and environmental factors that lead to disease; and ability to work with supervisors and colleagues.

Respondents cited knowledge gained and ability/skill improved as a result of taking the courses. In addition, they mentioned that the courses provided a good refresher and were fun and interesting.

Findings from the key stakeholder interviews

The stakeholder interviews revealed that the stakeholder techniques employed to achieve objective 2: *Develop and build local capacity on the design, implementation and management of quality and sustainable CPD Program which is an essential component in Laboratory Quality Management Systems* were for the most part effective. All stakeholders interviewed acknowledged that the revision and launch of the new CPD Policy and the development and launch of the e-learning courses for CPD credit would not have been possible without the support and commitment of all partners as follows:

- Sharing responsibilities made the project easy to carry out.
- Sharing responsibilities enhanced commitment.
- The fact that both MLSCN and AMLSN were involved made acceptance [of the CPD Policy] easy and fast.
- The sponsorship provided by USAID through JHU/K4Health as well as the technical assistance provided has been very helpful.

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Objective	Research Questions	Method	Number of participants
 Increase MLSs' access to quality Continuing Professional Development (CPD) Programs, and by so doing achieve improved 	Usability. What accessibility issues did the learners have, if any? Usefulness. What motivated learners to take the courses? How satisfied are learners with the e-learning courses overall? What is the perceived benefit of taking the courses? What would make the courses more relevant and useful?	Focus Group Discussions (FGDs)	15
skills and proficiency of laboratory professionals	Knowledge use. How have the e-learning courses increased learners' knowledge? How has the information from the courses been used?Value. What are learners' motivations to pay for future courses? What would be an appropriate fee schedule?	Online survey with MLSs	295
 Develop and build local capacity on the design, implementation and management of quality and sustainable CPD Program which is an essential component in LQMSs 	Expectation. What expectations did you have about the process for developing e-learning courses? What expectations did you have about the process for revising the CPD Policy? Did each partner play the role you expected them to? Organizational capacity. Is the organization familiar with the concepts and processes of utilizing e-learning into the CPD program? Does the organization have a system in place to routinely identify and fill knowledge needs and gaps? Individual capacity. What skill sets do you think are strengthened by participating in training sessions and continuous mentoring opportunities provided by JHU/K4Health? What skill areas would you like to build or enhance?	In-depth key stakeholder interviews with AMLSN, MLSCN, and USAID/Nigeria	7

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The key stakeholders reported that overall communication was good due to K4Health's regular emails, which kept all partners informed of project activities and reminded them of critical next steps. They also revealed a need for more frequent communication between the two local organizations (AMLSN and MLSCN) as well as more participatory joint activity planning and performance monitoring, and more transparent and better outreach by AMLSN and MLSCN to MLSs. Although AMLSN and MLSCN appreciated the email communication updates from K4Health, they considered the stakeholder engagement methods that took place in person as most productive.

The in-country technical consultations proved to be crucial for providing partners the opportunity to engage in meaningful dialogue and deliver critical feedback to one another. These forums were especially important to US-based K4Health staff that made quarterly visits to Nigeria. Regular conference calls and email correspondence often did not offer as great an opportunity for dialogue and feedback, partly due to connectivity problems. More frequent face-to-face meetings were needed during course development. This would allow for group discussions around incorporating feedback from the technical reviewers and pilot testers, and provide a smoother and faster feedback and editing process. Face-to-face meetings to develop joint work plans could also address the call for more participatory joint activity planning.

Both AMLSN and MLSCN acknowledged the need for better communication between each other, and suggested that the AMLSN National President and the MLSCN Registrar meet regularly. It was proposed to hold a meeting whenever one of the organizations (AMLSN and MLSCN) planned to release a new program or initiative to allow for discussion in the context of the project. In addition, AMLSN representatives requested that MLSCN include more MLSs in the ongoing review of the CPD Policy to ensure that it remains up-to-date and agreeable to MLSs.

According to MLSCN's records, there are 18,152 MLSs in Nigeria. Although MLSs were engaged during strategic points of the project (e.g., baseline assessment, CPD Policy stakeholder review meetings, technical review and pilot testing of the e-learning courses, and mix method evaluation), reaching all MLSs, especially those located in rural areas, was challenging. Both AMLSN and MLSNC relied on the AMLSN community chapters and state branches which operate in all 36 states. There is a need to reach every MLS directly as some branch and chapter officials are unreliable in promotion and disseminating information. This is challenging because neither AMLSN nor MLSCN have an electronic database of all MLSs registered to practice in Nigeria.

Specific promotion and dissemination efforts appear to be effective in reaching MLSs about the CPD Policy and e-learning courses. Most effective channels are face-to-face meetings and interactions, MLSCN's and AMLSN's websites, and social Facebook Groups. There is a need for a comprehensive list of all MLSs which would benefit both organizations and their relationship.

Discussion

Communication and knowledge exchange

The mixed method evaluation confirmed the core stakeholder strategy showing that communications is at the heart of facilitating effective stakeholder engagement. True stakeholder engagement requires investing significant time and energy. The process also requires that all stakeholders demonstrate respect for each other and commitment to the process, and have the patience and discipline to work together toward shared perspectives and common outcomes.

The shared goal of all of stakeholder engagement methods was to facilitate partner buy-in, promote progress towards achieving the project objectives, provide opportunities for feedback, and improve project activities. Knowledge exchange is crucial to accomplish this goal. Establishing systems and processes for knowledge exchange as well as promoting a culture that values it are essential to addressing the three areas in which stakeholder engagement can be improved:

- More frequent communication between AMLSN and MLSCN,
- More participatory joint activity planning and performance monitoring, and
- More transparent and better outreach by AMLSN and MLSCN to MLSs.

KM systems and tools

The establishment and strategic use of KM systems and tools, such as an electronic database of MLSs (e.g., MLSCN is currently rolling out a human resources information system), social media technologies, and assessments, can be used to capture MLS data and promote 'push and pull' methods of information dissemination. Push methods refer to traditional communication dissemination that often comes from positions of authority, while pull methods refer to approaches to eliciting feedback and making sure that the audience or end users' experience is shared. Together, push and pull methods of dissemination promote two-way exchange.

The electronic human resources information system will allow MLSCN and AMLSN to actively share information with all individual MLS with have an identified email address. In addition, MLSCN and AMLSN will have information pertaining to their places of work and can target those locations with information that they would like to reach MLSs. The Facebook Group and other feedback loops, such as surveying, polling, and forums, will provide MLSs with the opportunities to actively and regularly provide feedback to MLSCN and AMLSN. In addition, face-to-face interactions should be prioritized and supported by email exchange, conference calls, and online presence via organizational websites and Facebook Groups.

Organizational infrastructure and structure

While both local organizations have benefitted from this project immensely to date, further development of basic organizational infrastructure and systems is called for. Working with AMLSN to continue to develop, manage, and monitor e-learning courses requires a more comprehensive approach than the work with MLSCN around the institutionalization of the CPD

Policy. Project activities can be incorporated into existing structures at MLSCN, while work with AMLSN will require strengthening existing systems, introducing new systems and processes, and recruiting appropriate staff. AMLSN representatives repeatedly mentioned that the development of the e-learning courses required more time than anticipated. This is a challenge as AMLSN representatives volunteer their time for this activity. In addition to developing the courses, staff time is required for general project management, managing finances, reporting, and the course development process, nurturing relationships with new course authors, potential partners, and vendors, and training new course authors in e-learning course development. Some areas in which AMLSN representatives reported wanting additional capacity building included: project management, grant writing, visioning process / strategic planning, financial management, and basic information communications technology skills.

Conclusions

The fundamental rationale for engaging stakeholders is creating ownership or 'buy-in' to the process and thus to its outcomes. This is why stakeholder engagement has played such a critical role in the Nigeria CPD project. All partners from the inception of the project acknowledged the unique knowledge that each possesses and came together around the project goal. Each of the project activities contributed to strengthen both organizational and individual capacities of partners to play their roles and share their responsibilities. Three core themes emerged in facilitating collaborative learning and effective stakeholder engagement including: communications, strategic use of KM systems and tools, and organizational restructure. All partners were committed to continue to work together and further institutionalize and implement the CPD policy and e-learning courses and identified the next course of action.

As a result, this project is considered to be a Nigerian-owned and led project. Local partners designed the project and take a large amount of responsibility. The spirit of collaboration and responsibility among the partners has created a creative and productive space. The MLSs, the learners of the e-learning courses, feel this project has potential to transform the way in which professional organizations and fields of study can communicate, learn, and monitor their growth. Most importantly, the stakeholders involved realize that this is a chance to improve the practices for MLSs in Nigeria, and around the world. In the words of Dr Okara, AMLSN's National President, it is an opportunity to 'cultivate the habit of the pursuit of excellence in professional practice in the interest of the patient and the society.'

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Acknowledgements

K4Health/Nigeria Web-Based Continuing Medical Laboratory Education (CMLE) Program is supported by the Nigeria Mission of the US Agency for International Development under the terms of grant number 111155, GPO-A-00-08-00006. The views expressed in this document do not necessarily reflect those of USAID or of the US government.