CAPACITY BUILDING AND MENTORSHIP FOR BETTER INFORMATION CULTURE – A CASE STUDY IN ADDIS ABABA, ETHIOPIA

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ABSTRACT

Background

While lack of trained health workers in low resource setting remains a global challenge, there also remains a gap to build their skills, knowledge and the system needed to ensure coverage and quality of health service delivery. This gap points out the need to identify and invest in effective approaches to better train and support health workers. Mentorship is a facilitative approach adapted by Ethiopia health sector to strengthen health workforce capacity and motivation to collect, analyze, and use routine data at the frontline and program level. To achieve this vision, the Ministry of Health established partnership with six local universities which decentralized mentorship from regions to district level for joint problem-solving and sustainable capacity building. The purpose of this case study was to understand the role of mentorship by trained mentors to improve quality and use of information for decision-making in the health facilities and to identify transferable lessons which can be used for improvement within the existing work and more broadly.

Methods

The Capacity Building and Mentorship Program (CBMP) implemented jointly by Addis Ababa University and Addis Ababa Regional Health Bureau was selected as the case under study. Data were collected from sub-cities in Addis Ababa through 40 structured key informant interviews and six focus group discussions with managers and health workers from selected health facilities, health information experts and staff from regional health bureau, sub-cities and AAU that are involved in the mentorship program. Participants were sampled purposively. Interview topics included the program background, description of mentorship visits and tools, facilitators, barriers, and outcomes of the program, and recommendations. Interview transcripts, direct observation notes, and documents were coded and analyzed using a qualitative data analysis software package Atlas ti-7.

Results

Findings from interviews and direct observations suggest that the mentorship project was successful in improving knowledge and value for data among health workers, improving data quality and data collection at the health facility level, and providing feedback on staff performance. Participants attributed these successes to the emphasis given to routine health data, the established relationship and two-way communication between mentors and mentees, regularity of mentorship visits, and training. Duration and frequency of mentorship, lack of interactive learning, restrictive and cumbersome mentorship checklist, emerged as aspects of the project that needed improvement.

Conclusion

Mentorship by local mentors within existing health system structure is a promising approach to improve health information system performance at point of healthcare delivery. It can increase staff capacity to collect, manage, and use data and improve leadership capacity to make decisions informed by the collected data. By enhancing a program's capacity to synthesize and disseminate information, it also contributes to the larger goal of health systems strengthening.

BACKGROUND

Ethiopia's health service delivery is organized in three tiers. The first tier is primary level care, which is mainly provided by primary hospitals, health centers and health posts in the rural and pastoralist areas and by primary hospitals, health centers and urban health extension professionals in the urban areas. Majority of health care services are provided at this level with selected cases referred to the 2nd tier health service delivery point that is provided by general hospitals. The 3rd level of care is provided for selected cases that need specialty care at specialized referral hospitals [1].

In 2016, Ethiopia introduced the Information Revolution Roadmap (IR), as one of the health sector transformational agenda, to improve and sustain health system performance through effective use of quality data for decision making at all levels of the health system. It promotes the change in data use culture at point of collection or service delivery. The comprehensive initiative includes organizational strengthening, system design, accelerated system expansion, capacity building, and cultural change for more and better data use [2].

Since the launch of the Information Revolution Roadmap, several interventions have been implemented with the aim of promoting data quality and data use at health facility level. Among these are; the connected woreda strategy that aims to operationalize the information revolution at woreda and health facility levels through instituting a tiered pathway for facilities and woredas as a whole to achieve the highest standards in data quality and use. The Connected Woreda is about connecting woreda-level health institutions and people with better information in order to improve health system performance and ultimately outcomes. The Connected Woreda involves communities, patients, health workers, administrators, and decision makers - from communities and health posts, to clinics and hospitals, and to administrative offices at woreda level [5, 8].

In addition, as part of enhancing health workforce and mangers capacity, MOH introduced a Capacity Building and Mentorship Program (CBMP) to be implemented across regions in partnership with six universities, regional health bureaus and partners including DUP. Accordingly, Addis Ababa University has been supporting three sub-cities, Yeka, Lideta and Akaki-Kaliti, out of a total of 10 sub-cities in Addis Ababa City Administration. This capacity building strategy is designed to continuously advance health workers' and managers' skills and knowledge base in maintaining health data quality and information use at each level of health service delivery without moving outside of their work station for theoretical and practical instruction. With mentorship, mentees place of employment is their learning environment [11].

This qualitative case study is aimed at assessing how the capacity building activities, particularly the mentorship program, helps to improve data quality and data use practices and ultimately for better quality of care at primary health care service delivery level. The study employed a data use culture improvement conceptual framework which depicts human capacity as one of the building blocks for improved data quality and information use. The analysis presented in this study is based on 40 key informant interviews, 6 focus group discussions, and observations from 10 health centers and 3 health offices in Yeka, Lideta and Akaki-Kaliti, sub-cities of Addis Ababa City administration.

THEORY OF CHANGE

This study used a theory of change (TOC) that is customized for this particular research. The TOC was first developed through the collected input of high-level health information system technical experts during a consultative workshop [6]. It was then further customized using local and global evidence. As presented in figure 1, to create a culture of data use at the point of health care delivery, three changes need to happen - 1) health workers should be motivated and an accountability structure in place; 2) health workers and managers' capacity on data analytics, interpretation, and making insights need to be developed; and 3) a health workforce that demands quality data should be created.

For these changes to happen, a process that promotes interaction, discussion, and problem solving, like a performance monitoring team (PMT) or quality improvement team, should be established and made functional. Through this process, important barriers to effective data use, needs to be assessed, identified, and solved. Skills and capacity need to be developed among those who collect, organize, interpret, use, and make insights using the data. Multifaceted efforts (including training, mentorship/coaching, supervision, etc.) should be enacted to create the needed capacity at the health facilities and woreda level. Ensuring; data quality, digitizing and visualizing it can promote easy access to the data and it will encourage health workers and managers to use it [6, 14, 15].

In summary, the key pillars for more and better data use at the point of health care service delivery are deliberate investment at that health facility and woreda level to establish functional processes and systems for data use, building human capacity on data analytics and use and promoting data visualization.

Hence, one of the approaches followed to enhance implementation of these interventions has been a mentorship strategy by which trained mentors are assigned to provide regular targeted need-based capacity building support. In addition, mentors are expected to apply interactive problem solving approach to identify health systems barriers and facilitate solutions accordingly. Hence, evidence-based decision-making exercised at service delivery and district level of the health care system

This study assessed effectiveness of the mentorship approach including exploring of facilitators and barriers to effective mentorships.

Figure 1: Theory of change: drivers of improved data use at point of health care delivery
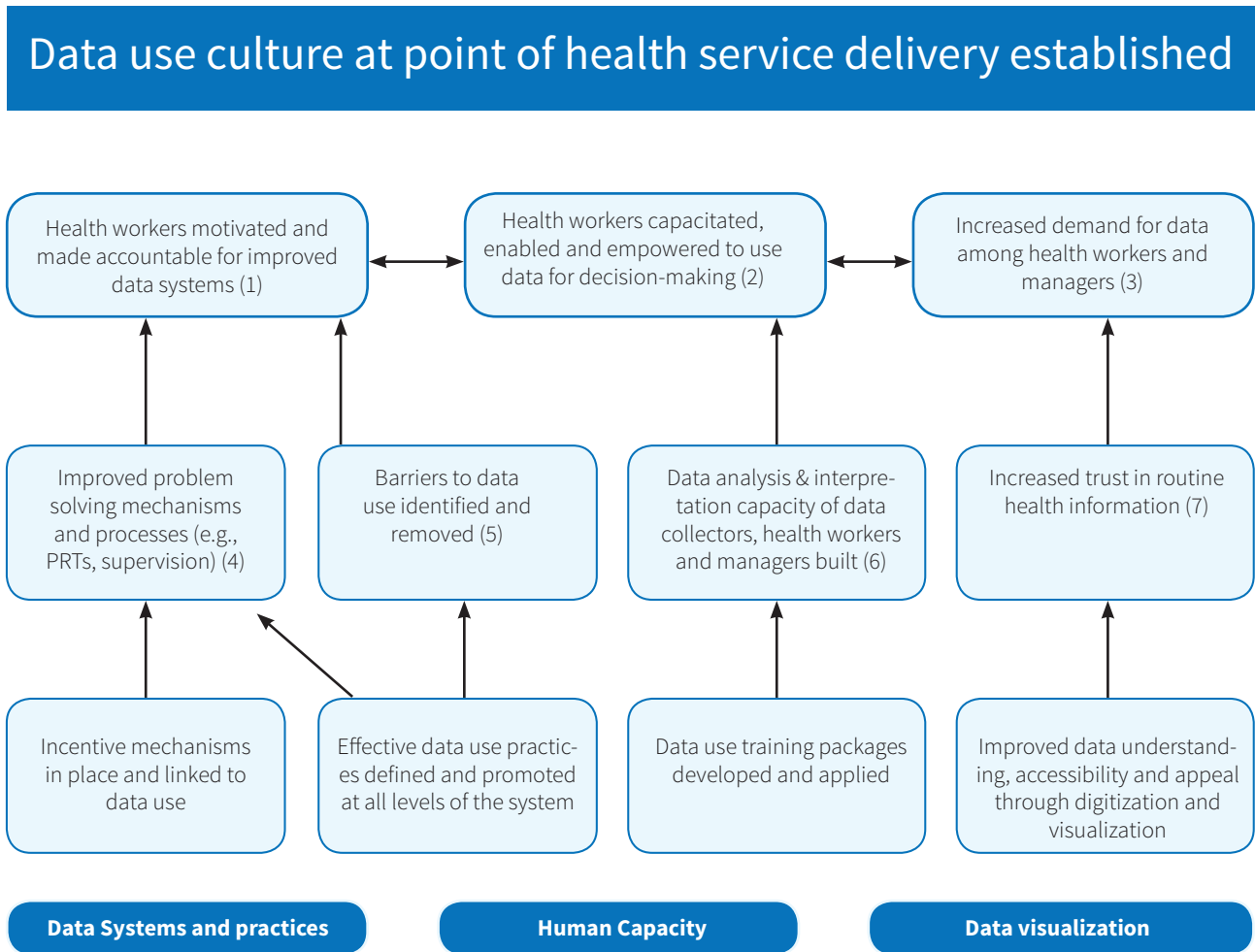
STUDY OBJECTIVES

The mentorship assessment was conducted as part a broader qualitative study to explore the drivers and barriers of effective use of routine health information for guiding decision-making process among health workers at primary health care service delivery level. In this regard, this particular report addresses the following objectives.

- Describes the implementation strategies and processes used to put the HIS mentorship into place and adaptation made once underway.

- Assesses the role of mentorship by trained mentors to improve data quality assurance practices and data use for decision-making at health facility level.

- Identifies transferable lessons which can be used to spread within the existing work and more broadly.

METHODOLOGY

Study design

This is a cross-sectional study that applied interpretive qualitative technique by using data that is collected through; key informant interviews, focus group discussions, and observations.

Study area

The study is conducted in three sub-cities of the Addis Ababa city administration; Yeka, Akaki Kaliti, and Ledeta sub-cities. The reason these three sub-cities were selected is because of the special support they have been receiving from Addis Ababa University School of Public Health through the Capacity Building and Mentorship Program (CBMP).

Eleven health centers, a mix of those that showed improvement and those that did not, were purposefully selected to be included in the study.

Table 1. List of health centers selected for data collection

Name of the health center	Sub-city
Woreda 1	Yeka
Woreda 4	Yeka
Woreda 7	Yeka
Woreda 9	Yeka
Akaki Kela	Akaki kality
Selam Fre	Akaki kality
Saris	Akaki kality
Gelan	Akaki Kality
Hidase Fire	Lideta
Teklehaimanot	Lideta
Beletishachew	Lideta

Study participants

The study participants were health workers, health information technicians (HITs), and managers that work in the selected health centers in Addis Ababa. A total of six focus group discussions and 40 key informant interviews were conducted, which represented a diverse group of study participants, including head, deputy head, health information technician, maternal and child health coordinator, disease prevention and control coordinator. In addition, health information experts and mentors from regional health bureau, sub-cities, and from the CBMP of Addis Ababa University were also interviewed. Study participants that are newly hired (those who stayed less than six months in the position) were excluded from the study.

Data collection methods

Data was mainly collected using key informant interviews, focus group discussions (FGD), observation, record reviews, and a review of reports and other supportive documents. The data collection is guided by interview guides prepared in the local language. Each key informant interview lasted about thirty minutes, while each focus group discussion lasted about two hours. Six to ten participants participated in each FGD. Data collection and transcription were completed from February 25 to May 25, 2020.

Data collectors

Data is collected by trained professional data collectors who had previous experience doing similar data collection activities. For each key informant interview and focus group discussion, an interviewer and one note taker were assigned.

Data management

Interviews and focus group discussions were audio recorded in addition to notes taken by the data collectors. All audio recordings were transcribed word-by-word in Amharic and translated to English by the same data collectors. Data is cross-checked with the notes and one comprehensive data set was generated. Data generated from record reviews was organized, based on a template prepared for the analysis.

Data quality assurance

To ensure quality of data, experienced and well-trained data collectors were engaged, data collection tools were tested, interviews were done in a private and comfortable set-up, and interviews were conducted in local language, Amharic, and audio recordings were transcribed word-by-word in Amharic and then translated to English.

Data analysis

Data was analyzed immediately after each interview to identify emerging concepts and categories, and to obtain the core contents of initial concepts and categories for subsequent interviews. The transcriptions were rewritten accordingly by repeatedly listening to the tape recorder to understand the concepts of each respondent.

Data was analyzed using a qualitative data analysis software package Atlas ti-7. In the open/initial coding process, the transcripts were analyzed line-by-line, and several codes were developed to assess the data. Finally, the most frequently cited sequence were identified for theme formation. Relevant verbatim quotations were reported to aid the interpretation of the data.

Validity

To ensure validity of the result; interviews were continued until saturation is achieved, triangulation has been applied, discrepant information was removed, and debriefing was done for experts.

Ethical considerations

The proposal and study tools were reviewed by the Ethiopian Public Health Association ethical review committee. All study participants participated voluntarily and verbal consent was obtained from the study participants. The information collected was kept confidential and no personal identifier was attached to the data. Interviewees were allowed to stop their participation in the study at any time.

Conflict of interest

All investigators have declared that they do not have any conflict of interest with this research activity.

Study limitations

The limitations of a qualitative study can apply to this study too. Findings can't be generalized, and causal relationships can't be made. Findings of this study will be useful to set hypotheses for a future rigorous study that can determine the effect of mentorship on information use and service outcomes.

STUDY FINDINGS

Program adaptations and adjustment

The study showed that Addis Ababa University, in collaboration with Addis Ababa City Administration Health Bureau, adapted and contextualized the national HIS mentorship guideline which led to introducing a modified mentorship approach. In order to ensure that mentorship has permanent structure within the health system, the new approach introduced mentorship using the region's existing framework. To this end, mentors are selected from each sub-city to follow and support health facilities within their catchment.

The mentorship team is organized in three levels: a team from AAU, a team from AA RHB, and anther teams at the sub-cities. The sub-cities wing goes further to the health facility level, while the AAU and RHB teams mostly mentor sub-city and hospital staff. At sub-city level, a team of two staff are assigned to mentor 2-3 health facilities within their catchment. These mentors are multidisciplinary (comprised of M&E and program staff) from different departments, selected by the Sub-city based on their level of performance, previous mentorship experience and commitment. Furthermore, memorandum of understanding was singed between the parties and the mentors clearly defining what is required of each mentors, the frequency of mentorship visits, the scope or issues they have to address during mentorship, expected targets to be achieved at health facility level, and mechanisms to review the activities.

> *We assigned the same mentor to a facility for the sake of keeping the momentum of change. If mentors interchangeably go to a facility, there may be different ideas or approaches and difficult to maintain consistency and follow what has been started by previous mentors.* **(AAU HIS expert)**

The MOH mentorship guideline stresses the need to give more emphasis to site visit or physical presence during mentoring given its knowledge and skill transfer nature which follows learning by doing technique [11]. Accordingly, mentorship visit has to

be conducted on quarterly basis using a standardized mentoring checklist. In the case study area, there is recognition for the need to reduce time interval between two consecutive mentoring visits with the understanding the positive changes it brings at service delivery level. During a mentorship review workshop held in January 2020, consensus was reached to increase frequency of mentorship visits to monthly basis. Appreciating the need for more frequent mentorship, a mentor said the following.

> *Shortening the time interval between two consecutive mentorship visits, ensures the health centers implement the action plans jointly set, otherwise it is highly unlikely. We also have phone call follow up every fifteen days where we ask on the status of the problem we identified in the preceding mentoring in health centers we are assigned to.* **(Sub-City Mentor)**

Almost all study participants indicated that during mentorship similar processes are followed. Most mentorships visits cover the medical registration units to review patient cards management and visit to various service delivery unites (mainly OPD and MNCH) to look at patient data recording registers, tally sheets, displays, etc and hold discussion and address issues on the spot with health workers. The mentors also go to the HMIS units to support on data quality and information use related issues. Finally, they present the overall findings to the health facility management, discussion will be undertaken, and action points will be set on the gaps. Overall, the mentors are working on skill transfer, capacity building, discuss on any case scenario on site through observation and support, and assess progress based on the checklist. Mentorship is expected to be followed by a written feedback and quarterly review meetings at regional level where problems/issue observed during mentorship are discussed and problem solving interventions designed. A staff from Addis Ababa Regional Health Bureau elaborated the mentorship visit and processes in a hospital setting:

When we mentor hospitals there is a prepared checklist for hospitals based on that we assessed their reporting system first whether the reporting process done as per the standard or not. Completeness, timeliness of the report, and data accuracy were assessed during mentorship. In addition, the major things in relation to data use, the presence of physical devices like computers, network, adequate skilled manpower and other materials are assessed. Based on the gaps identified the capacity building mentorship program (CBMP) tried to address those gaps. For instance, lack of training, lack of material, and budget are some of the gaps raised frequently. Accordingly, the project brought materials and organized training together with Addis Ababa University, Addis Ababa health office and other development partners.

Mentorship training

Mentors are expected to have knowledge and expertise on the subject matter than the mentee since they are going to impart knowledge/skill and assist to solve problems, not just observe and record what is available or not like supervision. Hence, mentors from AA RHB and the three sub-cities were trained on data management, data quality, data use, and mentorship techniques. AAU in collaboration with AA RHB provided mentorship TOT to RHB staff and basic mentorship training cascaded to the mentors at sub-city level. Appreciating the trainings provided a focus group discussion participants said the following.

To mentor someone, you have to have better skills about the subject matter and formats which are used to record or report. When I say this, I don't mean mentors must be trained in every aspect which is impossible but it is good to have comprehensive skills across services a mentor is supporting. If we don't transfer skills on some subject matter in better ways, mentees don't perceive us as problem solvers. **(FGD participant)**

Refreshment trainings on mentorship and related subjects were also conducted by Addis Ababa University to avoid knowledge gap. For instance, based on gaps identified during the quarterly review meeting, the mentorship program organizers, AA RHB and AAU, provided a focused training on DHIS2 to all sub-city staffs working on mentorship. As a result, most sub-city staffs now are utilizing DHIS2 to access and analyze their program data, but previously they were relying on HITs to extract and give those data. Appreciating the trainings provided, a sub-city mentor elaborated:

It helped us to understand about mentorship, what it is about which we had no idea before. If they had not provided us the training, we wouldn't have had this improvement. We, mentors also had skill gaps on DHIS-2 which we raised at the meeting with AAU and received a 5 days training. The training helped us to become good mentors in our third round mentoring, where we provided support to health centers focusing on how to use DHIS-2.

More interactive and adult learning approaches followed in training the mentors. On data quality assurance, hands-on exercises were given and data quality dimensions covered in detail, so that mentors acquire better skills than staffs who routinely work on data.

Trainings are more of interactive and following adult learning principles. For DHIS2 training, we use computers and it is a practical training, not theoretically based. Other trainings are also facilitated in more interactive and participatory ways. **(AAU health information expert)**

Observed strengths of the mentorship program

Positive feedbacks have been received from the study participants on the mentorship approaches and practice, which is corroborated by the site level observations conducted during the study. The following points are identified as strength of the mentorship program.

1) Gives emphasis to routine health data.
2) Seen as a means for problem solving at service delivery and woreda health office levels.
3) Established close follow-up and feedback mechanisms at lower levels of the health system.
4) Acceptability of the program increased as observed by positive rapport established between mentors and mentees.

1. Gives emphasis to routine data

There are already integrated supportive supervision and program tailored supervision. However, these supervisions don't look much into the data, the data management processes, and using information to address program/service delivery problems/issues. Study participants agreed that the ongoing mentorship is not only program-based but also comprehensively focused on data management and data use.

> *I had a mentorship training and was mentoring program specific areas before. This one is the first of its kind, which is comprehensive and continuous support given to a similar health facility unlike the previous one which was mostly a supervision type where you have irregular schedule to supervise health centers to identify gaps and solve problems.* **(Sub-city mentors***)*

2. Serves as a means for problem solving

Mentoring required the mentors to be part and parcel of the health facility team to jointly solve the identified problems and allowing transferring skills in the process. The mentees appreciated the practical nature of the mentorship approach as such they find it helpful to clearly understand and build the skill and knowledge level of individual experts in the health facility. A study participant expressed it as "*evidence of a learning organization*".

> *When they (the mentors) come for the mentorship, they do not come only to observe the problem, they also have the interest to support us and solve the problem.* **(Health facility HMIS focal)**

> *Previously, we had poor performance in ANC attendance and family planning from year to year. By taking data-based actions and discussing with woreda health extension workers, currently improvements were seen in these areas compared to previous years.* **(Health Facility DPHP Coordinator)**

Additionally, sense of self-confidence in solving identified gaps/issues emerging among health workers with limited support from their mentors. A regional health bureau staff elaborated on the sense of program ownership and accountability developing among sub-city and health facility staff.

> *Moreover, sense of ownership, especially on data quality and utilization, is created. Even mentorship is no longer conducted, making efforts to ensure use of quality data have become a habit nowadays. The performance monitoring team was also strong enough to take over the activities and use data as per the standard. They are doing these activities for their own sake***.**

3. Established feedback mechanisms

The mentorship program has allowed close follow-up on HIS performance of service delivery points and as such created sense of responsibility. At the end of each mentorship verbal feedback is provided on the spot and an action plan (indicating responsible persons and timeline) developed jointly with HIT, MRU and PMT members if available or a medical director. These are followed by written feedback. Next round mentorship visits start from there and then focus on other new problems. The study participants expressed their appreciation of the feedback received from mentors.

> *What I saw as good experience in this mentoring is that mentoring feedback is sent. These feedbacks contain strengths and gaps in detail which again I appreciate. We distribute the feedback to each concerned department so that they can take action to fill identified gaps.* **(Health Facility DPHP Coordinator)**

> *The mentorship is good, in a sense, any one including me have the tendency of accomplishing tasks when we are reminded and made to feel responsible by someone requesting for the implementation for the activities like in the mentorship support.* **(Health Facility DPHP Coordinator)**

4. Positive rapport established between mentor and mentees

The relationship between mentors and mentees improved overtime. Acceptability of the program increased as observed by the positive rapport established between mentors and mentees. Health workers are more accepting the mentors and understanding its usefulness. The mentees indicated that the mentors have good interaction with them and they consider them as part of their team. The mentors also feel a friendly relationship established with the health workers.

> *Yes, they (the mentors) have positive interaction with staffs and discuss freely. If staffs have questions or issues, they raise and discuss with them. During feedback meeting, our staffs may convince mentors why a certain data has been put in a certain way.* **(Health facility DPHP Coordinator)**

> *As a whole, I think mentees have good/positive perception because we don't have a boss-subordinate relationship, rather, we sit and discuss freely and tactically solve gaps with staffs. To me, mentoring is the best approach in building positive relation among mentors and mentees. (***Sub-city mentor)**

Barriers to effective mentorship

1. Irregularity of mentorship visits across sub-cities

Though a new directive was given by the RHB to increase the frequency of the mentorship visits to monthly basis, there are still some irregularities. The study found that mentorships are still mostly being conducted every two month or quarterly. In some sub-cities, mentors conduct bi-weekly follow-up with the health facilities over the phone. Indicating the inconsistency of the mentorship schedule and visits, some study participants said the following:

> *In recent times, there is some slowing down of the momentum, and we are not seeing them (the mentors) coming that much. But they were doing it consistently before.* **(Health facility medical director)**

> *It has been a while since they (the mentors) came now. They didn't come this month; I think it has been two months since they came.* **(FGD participant)**

2. Confusion between mentorship and supervision

In principle, mentoring reflects establishing a one to one relationship, applying supportive approaches, and building self-confidence. It should not be conducted in an obligatory monitoring or supervision manner. In some study sites, confusion on the difference between mentorship and supervision reported both among mentors and mentees. Study participants expressed that some mentors act as supervisors coming with bossy attitude - simply assessing gaps and telling mentees what to do rather than equipping them with skills for how to solve problems.

> *Majority of mentors are good. However, some mentors act like a supervisor they simply comment without any aid or skill transfer. I think mentors are supposed to provide support for professionals by following the activities until the formidable problems/challenges are totally alleviated. In this regard some mentors simply commented without any support by externalizing the problem to someone.* **(Health facility DPHP Coordinator)**

3. Varied level of competency among mentors

Though deployment of multidisciplinary mentors are appreciated, not all mentors are well versed in all dimension of HIS. Mentees expect their mentors to have detailed technical knowledge in different HIS areas to be able to provide the needed support. Study participants indicated that they observed skill gaps among mentors in the areas of using the digital health tools, IT maintenance and troubleshooting. Particularly, gaps in using DHIS2 for analysis and data visualization were identified. Most of the mentors mentioned that they use Excel for data analysis and to produce charts and tables.

> *I put their (the mentors) level of competency at the middle, since some simply fill checklist and go without discussing about the identified gaps or showing us ways to address them* **(MCH focal person)**

> *The main gap observed was that some mentors were unable to support on DHIS-2 for they were not trained. The issue was reflected during our review meeting. To solve this gap, we gave them basic training on DHIS-2* **(AAU Health Information)**

4. Restricted by mentorship checklist (limited room for innovation)

The study also showed mentors are very much restricted by the mentorship checklist with limited room for context specific engagement. The checklist was supposed to serve as a tool to establish baseline and to track institutions' status in implementing the Connected Woreda strategy on a quarterly basis. Once gaps or problems identified, subsequent mentorships should be based on tailored improvement plans jointly developed with the health workers. The mentorship checklist is extensive and time taking. So, those mentors strictly following the checklist don't go beyond the checklist limiting their ability to see outside of the box and flexibly to support on any issues raised by mentees.

> *Honestly speaking, there is gap in this issue, apart from asking questions from the checklist, they don't go in detail of technical aspects. For example, I see mentors being limited by the checklist only while mentorship is very dynamic and requires to see out of the box. In short, it is good to capacitate them more in all health services.* **(Health facility DPHP coordinator)**

> *One of the comments from the mentors' side is that we should not always expected to be guided by the checklist to correct gaps. For instance, there might be gaps seen last month, and there could be other approaches applied to correct specific gaps other than relying only the checklist.* **(Sub-city mentor)**

Observed contribution of HIS mentorship program

Though it is early to talk about the effect of the mentorship, the current study showed some benefits of the mentorship interventions. Overall, the case study result showed the following changes to be most likely associated with the mentorship interventions:

1) Increased knowledge and value for data.
2) Improvement in HIS performance (data quality and use).
3) Performance monitoring team functionality improved.
4) Proper management of card rooms.

1) Knowledge and value for data

Study participants stressed that the mentorship support generated more attention and knowledge on how to ensure data quality, to conduct data analysis and to use data for decision/action. The value given for data is also increasing, among the health workers in health facilities. These institutions valued data activities as parts of their work by which they got changes. Previously, data quality assurance, data analysis and use were seen as exclusively HITs responsibility, but now staff in the health facilities started to analyze and display their data.

> *Well, it has a huge significance…..one thing, we know how and where to get data when needed - we are aware of the primary sources of the data. In addition, it is important to know on what to base when you make decisions. For example, we used the data to know the status of public interventions and to set priorities.* **(Medical Director)**

> *Since mentorship started, each and every data element is counted and recorded which then checked for consistency that prevents from reporting data haphazardly which in turn is due to the improvement of level of awareness of health staffs about data.* **(Health Facility DPHP Coordinator)**

2) Improvement in HIS performance

The provided mentorship and trainings have created the capacity that helped facilities to progress to the next level within the connected woreda pathway. Improvement in HIS performance including data quality and information use observed in a number of mentored health facilities. During the baseline assessment of health facilities in the three sub-cities, majority of the selected facilities were low performing (emerging level). Recently conducted self-assessments using the Connected Woreda assessment tool shows majority of the health facilities are shifted to candidate and some even reached to the model level.

> *During the first assessment, almost all health centers (HCs) in our sub-city were under emerging category and then the status has changed after the mentorships. First one HC become model and then progressed to making all 6 health facilities model including Tirunesh Beijing Hospital based on the self-assessments conducted repeatedly.* **(Akaki-Kaliti Sub-City)**

A mentor from sub-city health office elaborated on the observed improved routine data recording and reporting in health facilities:

> *I saw trend of data accuracy and completeness improvement from time to time that we were getting many data elements inaccurate when we started but have observed improvement while checking randomly checking recorded and reported data in subsequent mentoring visits.*

3) Performance monitoring team (PMT) functionality improved

PMTs in health facilities are expected to directly tackle issues in data inaccuracy and low healthcare performance and/or delayed accomplishments through an established process of problem identification, root cause analysis, intervention design and implementation. The case study showed, mentorship coupled with training and leadership commitment resulted in more active and functional PMTs. In most assessed facilities, PMTs are established as per the standard – health facility leaders started to actively take part in PMT meetings, every case team represented, PMT meetings held regularly and using data to monitor performance and develop action plan. As part of the mentorship, PMT members were supported in analyzing the data, identifying root causes and problem solving by integrating quality improvement projects. Mentorship visits also included reviewing PMT meeting logbook and ensure regularity and quality of the meetings.

> *Though huge amount of data is generated from the MCH core-process, health workers were more focused on service provision than data in most of the time. This has changed recently - we hold monthly PMT meetings and our reports are evaluated in the presence of the medical director; then our performance is displayed in each MCH room which gets monitored by the quality improvement team. Since we began doing this (PMT meeting), there is improvement in the data quality and staffs' awareness on data increased. There are still some gaps which will get improved with additional training to the staffs* **(Health Facility MCH Coordinator)**

4) Proper management of cardrooms

Health facility staff working in the medical registration unit (MRU), are among those targeted by the mentorship program. Prior to the mentorships, the MRUs were disorganized, master patient index (MPI) not being used properly, and clients medical files misplaced. These has resulted in duplicates of client records and losing patient medical history which could have implication on the continuity/quality of care. The mentorship support helped health facilities to improve data handling and management of cardrooms.

> *The first round we mentored health centers, we found improper data handling in the MRU such as MPI boxes not utilized when a patient/client visits the health center for the first time, there were duplicate cards for an individual patient, and the unit itself was not active in general. We worked out in all these gaps. In our second mentoring, we saw very good progress made as per the standard. The health workers remarked that they have been giving double individual cards and exhausting themselves until that time.* **(Subcity Mentor)**

DISCUSSION

In this project, an integrated platform involving MOH (all levels), universities and partners is applied to address important administrative (managerial), technical and financial gaps. The capacity building activities including training and mentorship of data managers and data users helped to improve data management activities. Even though mentorship program is the major focus, supporting the ICT infrastructure has also contributed to facilitate data communication among the different levels of the health system.

This study clearly outlines the importance of mentorship as continuous support for effective data management and use. Many studies across health disciplines, indicated well managed mentorship program has significant contribution for skill development and gain the recommended clinical practice. The Capacity Building and Mentorship Program is designed to increase the potential for HIS strengthening interventions impact and sustainability [13]. Consistent with other studies, the program decentralized mentorship to lower level by creating and using a pool of local mentors, which is associated with more sustainable improvement of the health system [12 – 13]. The finding of this study implied that engaging a diverse group of experts from universities, regional health bureaus and district health offices for capacity building including training and mentorship on routine data management and use are commendable. This commitment strengthened the adoption and ownership of the capacity building and mentorship program by the local leadership and increased commitment to supporting ongoing efforts.

Since the ultimate goal of this mentorship program is bringing behavioral change in data use among health workers and managers for better health services, it requires understanding of the process of change by exploring program facilitators and barriers. Classroom training is not enough for change to happen since it is not expected that all trained staffs are executing what they gained from the training; theory and practice are not similar. Study partici-

pants listed observed strengths of the mentorship program including its focus on routine health data, serve as a means for problem solving, put in-place feedback mechanisms in the health systems and increasing acceptability of the program.

As supported by study participants, the project focus on routine data will address the quality and utilization problems of the huge health information resource for evidence-based decision-making and service provision. As mentioned a strength and main function of mentorship, data managers and users have got an opportunity to deal with managerial and technical challenges in their day to day routine work with regard to routine health data. It is expected to have variations among mentors and mentees to identify these problems and discuss immediate solutions. The presence of skilled mentors and trained mentees are key for this function.

Another feature of mentorship is closeness and two-way communication between mentor and mentee. The mentor focus is beyond supervising the targeted task. It is an overall support of the mentee by understanding his/her weakness and strengths. Creating clarity on the importance of data quality and decision making based on routine health data is very critical step for program acceptability. The study participants' response is the reflection of the efforts done by mentors. The key informant interviews indicates that the mentorship visits empowered health facility managers and health workers in their role as decision-makers, helping them to understand the need for decisions based on strong evidence and increasing their commitment to improve the quality of the routine health data.

Duration and frequency of mentorship, lack of adequate space for demonstration or interactive learning, and restriction by checklist were among the major barriers of the mentorship program. When we see adequacy of frequency and duration of mentorship, it was found to be irregular. This will be also a major challenge to consider in a scale-up plan for the wider nation. The implications related to

limited space for interactive learning and problem solving calls for considering alternative approaches for future mentorship activities. Use of checklist seems beneficial for standardizing the mentorship program. However, mentorship is not usually done using checklists like supervision. It requires flexibility in addressing knowledge and skill gaps according to the individual mentee, which is not the same across all person.

Though, crucial, mentorship by itself is not sufficient to bring change in information use culture. The findings indicated that beyond an organized mentorship program and institutional capacity building is mandatory for project success. Therefore, the scale up of mentorship program should be done parallel with addressing the challenges related to ICT infrastructure, software system and institutional capacity building.

RECOMMENDATIONS

Future projects using mentorship for HIS performance improvement should take into consideration the following recommendations:

1) Setting up a regular and continuous schedule for mentorship visits.

2) Creating a more interactive and creative problem solving atmosphere by facilitating health workers (mentees) to come up with their own solutions which will increase self-efficacy for problem solving. While checklists are important to guide mentorship particularly in the beginning to identify capacity gaps, it shouldn't limit the interactive and innovative nature of mentorship.

3) Projects should focus on equipping health workers with skills on how to use collected data and reports to make decisions that improve service delivery. This would help staff understand why data are collected and increase their capacity to use the data they collect.

4) Limit the mentorship scope, by focusing more on areas where it could be more effective and deploy other complementary strategies to bring needed change on health information management and use at point of health services. Infrastructure and ICT related gaps require considering alternative interventions.

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