Transforming primary health care unit service delivery through leadership, management and governance (LMG) training: A field action report from Ethiopia

Bekelech Bayou*, Tigist Hailu, Ayalew Jenberie, Yenemayehu Minalu, Tefera Tesfamichael

Abstract

Background: In order to achieve global and national health targets in Ethiopia, it is crucial that cadres of leaders have the skills, knowledge and tools to manage and govern the primary health care reform initiative currently underway. To support this, John Snow, Inc. (Strengthening Ethiopia’s Urban Health Program (JSI/SEUHP), the implementing partner, collaborated with the Federal Ministry of Health (FMoH), regional health bureaus (RHBs), and town and sub-city health offices to provide leadership, management and governance (LMG) training between November 2016 and August 2017. The training of trainers (ToT) was undertaken by professionals from the FMoH, RHB and universities, who cascaded it to health care workers in 12 health centers (HCs), one sub-city health office and one town health office, in phases, followed by workplace implementation. This field action report documents the results and lessons learned from the implementation of this LMG training.

Methods: A mixed methods approach was used to assess the impact of LMG training. Changes in leadership competencies were assessed through pre- and post-test evaluations, and the impact of LMG training on primary healthcare service delivery was assessed through facility records. The implementation process and impact on providers’ perceptions were documented through a combination of coaching discussions, group work and quarterly activity implementation reports.

Results and Discussion: Health facilities implementing the LMG project improved institutional delivery from 40% to 80% in Sodo town, and the ANC follow-up retention rate increased from 40% to 78% in Addis Ababa Woreda 10 HC. As a result of the LMG training, providers working in supported facilities noted improvements in the workplace atmosphere, provider motivation, team work and resource management.

Conclusions: The LMG training resulted in improved manager and provider motivation, and competency to carry out LMG practices. The training catalyzed positive competition between health facility teams to achieve facility-level service delivery goals. Findings suggest that scaling LMG training is a promising mechanism to support health sector transformation in Ethiopia. [Ethiop J Health Dev. 2020; 34(Special issue 2):33-41]

Key words: Leadership, management, governance, Ethiopia

Introduction

The World Health Organization (WHO) lists leadership and governance as one of the six interrelated health system building blocks, along with service delivery, health workforce, health information systems, access to medical products, vaccines and technologies, and financing. Each of these building blocks is essential but not sufficient to sustainably strengthen a health system by itself, and strengthening leadership supports the other five building blocks by ensuring a strategic policy framework exists and is combined with effective oversight, coalition building, regulation, attention to system design and accountability (1,2).

Ethiopia is currently implementing its Health Sector Transformation Plan (HSTP), the first phase of ‘Envisioning Ethiopia’s Path towards Universal Health Coverage through Strengthening Primary Health Care’, and part of the Ethiopia’s second Growth and Transformation Plan (GTP-II). This plan emphasizes the pivotal role that the leadership, management and governances kils of leaders and managers play in strengthening other health sector transformation agendas and improving health outcomes (3). Weak management systems can lead to frustration among health care professionals if they feel they are not able to make sustainable contributions to improved health outcomes (2). Improving the ability to lead, manage and practice good governance of those who ‘make the health system happen’ is one identified intervention to ensure health programs in Ethiopia are managed well, to build leadership, management and governance capacity to achieving the HSTP, to support the GTP-II, and to address challenges associated with health service delivery (4).

Ethiopia, in collaboration with development partners, is implementing a Leadership Development Program to provide in-service LMG training to health care managers and health care workers. Strengthening Ethiopia’s Urban Health Program (SEUHP), implemented by John Snow, Inc. (JSI) and funded by the United States Agency for International Development (USAID), is working closely with the Federal Ministry of Health (FMoH), regional health bureaus (RHBs), zonal health departments (ZHDs), woreda health offices (WorHos), primary health care units (PHCUs) and local partners to implement the training program. The LMG training aimed to provide health managers and health care workers with the skills and knowledge needed to improve service delivery and management. The LMG project supported sub-city health offices (SCHOs)/town health offices (THOs) and health facility teams in leading performance improvement projects to address service delivery challenges, and increase knowledge and skills in mobilizing local resources, monitoring results and improving workplace climates. The LMG training initiative used two tools to guide the implementation: the ‘challenge’ model to guide participants in working collaboratively towards a shared vision of health outcome goals, and the ‘leading, managing and

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governing for results’ model to provide insight on the leadership and management activities that can help health care managers and providers address challenges and achieve results (see Annexes 2 and 3) (3, 5, 6).

**Description of the leadership, management and governance training**

The FMOH LMG in-service training facilitator and participant manuals guided the training sessions. Before cascading the training, higher officials from RHBs, SCHOs/THOs and the chief executive officers from sub-cities and towns met to discuss trainee selection and the implementation and sustainability of the project. JSI/SEUHP worked with the FMOH, universities and RHBs to implement the LMG initiative in 14 health institutions (12 PHCUs, one town health office, and one sub-city health office) in the five JSI/SEUHP-supported regions (Oromia; Amhara; Southern Nations, Nationalities, and Peoples’ (SNNP); Harari; and Tigray) and the two city administrations (Addis Ababa and Dire Dawa) from November 2016 to August 2017.

The LMG training included three workshops over two or three days, with a further day for the presentation of results. The workshops were held six to eight weeks apart to allow time for participants to carry out their workplace assignments. Activities conducted during each training workshop are shown in Figure 1. The topics were divided into three content areas: background on the health system in Ethiopia and LMG model; performance improvement through enhanced LMG; and facility resource and service delivery management.

**Figure 1: Activities conducted during each training workshop**

<table>
<thead>
<tr>
<th>Workshop</th>
<th>Activity Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workshop 1</td>
<td>Pre/post test, lecture, discussion, group work, workplace assignment</td>
</tr>
<tr>
<td>Workshop 2</td>
<td>Status of workplace assignment presentation, pre/post test, lecture, discussion, group work, workplace assignment</td>
</tr>
<tr>
<td>Workshop 3</td>
<td>Workplace assignment presentation, pre/post test, lecture, discussion, group work, workplace assignment</td>
</tr>
<tr>
<td>Workshop 4</td>
<td>Final results presentation</td>
</tr>
</tbody>
</table>

During the first training session, each team developed their shared vision, identified their challenges using a prioritization matrix, and set target measurable results to ensure sustainability and work towards improved health service delivery outcomes. JSI/SEUHP staff and master trainers from the FMOH and universities monitored the progress through coaching sessions between workshops and tracking activities on a quarterly basis. Based on the experiences of LMG implementation in health facilities, RHBs including Addis Ababa City Administration Health Bureau expanded the initiative to four PHCUs/HCs. The FMOH also customized the LMG training manuals to include water, sanitation, and hygiene (WASH) activities; as a result, WASH-implementing organizations are currently putting into practice the WASH LMG initiative.

**Methods**

Health facilities were selected in collaboration with RHBs and THOs/SCHOs, based on existing human resources, client flow and organizational performance. The number of LMG trainees per facility was limited to 25, but representatives from all service delivery units were included, such as the outpatient department; maternal, neonatal and child health services; chronic diseases (HIV, TB); and maintenance and security. To measure the results of the LMG training, technical and support staff (LMG team) took the baseline data from the quarter before the trainings were initiated and the LMG team tracked and analyzed the changes every quarter.

**Ethical considerations**

This study obtained permission from the JSI/SEUHP project funded by USAID/Ethiopia under cooperative agreement No. AID-663-A-13-00002 and the IRB waived the need for consent. The information that was collected for the study was coded for the sake of security, and anonymized. No personal identifiers were used in the report.

**Results and Discussion**

**Contribution of LMG training to service delivery outcomes:** Based on eHIS quarterly reports before and after the LMG training, selected indicators from health facilities that participated in the training showed improvement in service delivery outcomes. For example, institutional delivery increased in Sodo town from 40% to 80% through strengthening pregnant mothers’ conferences and community-level awareness activities. The antenatal care/follow-up retention rate improved at Bishoftu HC from 46% to 82%, and the health facility-level budget utilization also increased from 60% to 99% in Addis Ababa health facilities implementing LMG training (see Table 1). These results imply that individuals and teams have used their acquired knowledge and skills to work towards their defined measurable results and the health outcome goals of their health facilities.
### Table 1: Results achieved by health facilities through implementing LMG projects in Ethiopia

<table>
<thead>
<tr>
<th>Indicator/service implementation</th>
<th>Region/HF</th>
<th>Base line</th>
<th>After nine months of implementation</th>
<th>Activities conducted for improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Institutional delivery</strong></td>
<td><strong>Addis Ababa</strong></td>
<td>9%</td>
<td>16%</td>
<td>• Providing orientation to staff on quality counseling for ANC follow-up</td>
</tr>
<tr>
<td></td>
<td>Nifas Silk Lafto subcity-Woreda10 HC</td>
<td></td>
<td></td>
<td>• Community-level awareness-creation activities</td>
</tr>
<tr>
<td></td>
<td>SNNP</td>
<td>40%</td>
<td>80%</td>
<td>• Improving delivery room infrastructure</td>
</tr>
<tr>
<td></td>
<td>Sodo HC</td>
<td></td>
<td></td>
<td>• Minimizing referral from HC to hospitals by making 24-hour electricity back-up available (generator)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Strengthening pregnant mothers’ conference at health facility level</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Coffee ceremony for women who delivered at HC</td>
</tr>
<tr>
<td><strong>Retention to ANC</strong></td>
<td><strong>Addis Ababa</strong></td>
<td>40%</td>
<td>78%</td>
<td>• Improving documentation</td>
</tr>
<tr>
<td></td>
<td>Nifas Silk Lafto subcity-Woreda10 HC</td>
<td></td>
<td></td>
<td>• Making laboratory reagents available for routine tests</td>
</tr>
<tr>
<td></td>
<td>Oromia</td>
<td>46%</td>
<td>82%</td>
<td>• Strengthening of defaulted tracing activities by UHE-ps at community level</td>
</tr>
<tr>
<td><strong>Facility-level budget utilization</strong></td>
<td><strong>Addis Ababa</strong></td>
<td>60%</td>
<td>99%</td>
<td>• Training provided to HC staff on drug and medical equipment specification and procurement procedure</td>
</tr>
<tr>
<td></td>
<td>Yeka Sub city Woreda 6 HC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nifas Silk Lafto subcity-Woreda10 HC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kolfe Keranyio subcity Woreda 9HC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bishoftu HC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Family planning (FP) coverage</strong></td>
<td><strong>Addis Ababa</strong></td>
<td>44%</td>
<td>85%</td>
<td>• FP orientation training provided to HC staff, including UHE-ps</td>
</tr>
<tr>
<td></td>
<td>Kolfe Keranyio Woreda 9HC</td>
<td></td>
<td></td>
<td>• Community-level awareness-creation activities</td>
</tr>
<tr>
<td></td>
<td>Oromia</td>
<td>39%</td>
<td>55%</td>
<td>• FP service expanded at schools and workplaces through campaign</td>
</tr>
<tr>
<td></td>
<td>Shashemene HC</td>
<td></td>
<td></td>
<td>• Quality counseling with full option of FP methods to users</td>
</tr>
<tr>
<td></td>
<td>Tigray</td>
<td>16.3%</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Selam HC (Mekelle)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Facility-level data quality improved</strong></td>
<td><strong>Addis Ababa</strong></td>
<td>60%</td>
<td>80%</td>
<td>• Monitoring and evaluation training provided to HC staff</td>
</tr>
<tr>
<td></td>
<td>Kolfe Keranyio Woreda 9HC</td>
<td></td>
<td></td>
<td>• Periodic internal supportive supervision strengthened</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Every month, Lots Quality Assurance Sampling performed before sending the report to the next level</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Create model household</strong></td>
<td><strong>Addis Ababa</strong></td>
<td>42%</td>
<td>52%</td>
<td>• Strong support provided to UHE-ps</td>
</tr>
<tr>
<td></td>
<td>Arada SCHO</td>
<td></td>
<td></td>
<td>• Community conversation sessions</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Women’s Developmental Army (WDA) utilized properly</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Social mobilization effort by</td>
</tr>
</tbody>
</table>
| Facility-level TB detection rate | Amhara  
Debre Markos HC | 45%  
67% |
| Dire Dawa  
Dechatu HC | 33%  
75%, |
| Harari  
Jinela HC | 20%  
80% |
| Tigray  
Semen HC (Mekelle) | 1%  
30% |
| Community Based Health Insurance (CBHI) beneficiaries increased | SNNP  
Sodo HC | 0%  
20% |
| Number of home delivery-free kebeles increased (eligible women delivered at the health facility level) | SNNP  
Sodo town | 22%  
61% |
| Complete referral improved | SNNP  
Alamura HC | 36%  
68% |
| Addis Ababa  
Arada sub-city | 15%  
93% |
| Home-based HIV Testing and Counseling initiated | Amhara  
Debre Markos town | 0  
67% |
| Facility-level WASH implementation improved | Addis Ababa  
Nifas Silk Lafto subcity-Woreda10 HC | 0  
92% |

**UHE-ps and WDA**
- Orientation for UHE-ps on identifying suspected TB cases, and strengthening referral
- Community-level awareness-creation activities conducted through health education and distributing leaflets, including updated TB guideline
- Community-level social mobilization activities
- Strong technical support provided to UHE-ps
- New pregnant mothers invited to pregnant mothers’ conference
- The existing pregnant mothers’ conference strengthened
- Supportive Supervision and technical support provided to UHE-ps by LMG core team
- Non-financial motivation scheme, such as certification and posting of photo with best performer at the gate of the HC
- Referral focal person assigned and quality of feedback monitored
- Orientation provided to HC-level service providers on the importance of referral slips sent by UHE-ps
- Weekly and monthly meetings between UHE-ps and HC staff were conducted
- Refresher training provided to UHE-ps on HTC
- Supplies made available for HTC
- Awareness-creation activities conducted for the community
- Sewerage line constructed within HC compound
- Hand washing facilities made available in all service delivery units
- Separate latrines constructed for males and females

**Contribution of LMG training to work place atmosphere:** In the time between LMG workshops, coaching visits were conducted with participants using a structured coaching guide and tool to assess how the LMG training impacted on an individual’s attitude towards achieving their health facility’s goals and working in a team environment, including communications and relationships with managers and team members. Based on these coaching visits, it can be concluded that the LMG training had a positive impact on the measurable results towards their organizational goals. Below are participant testimonies on the changes in the workplace atmosphere as a result of the LMG training.

**Ownership and shared vision:** The LMG training created a sense of shared ownership among staff on the vision and goals of the health facility, a central component of the workshops. Facility staff who had yet to understand and internalize their health facility’s
vision prior to the training were able to do so through the LMG training sessions.

One of the training participants noted:

“The main thing that the training has facilitated is the ownership of the vision and mission of the health center. For me, I have a number of times seen the vision and mission of the health center but never have I internalized it as I have internalized it now. Internalizing the vision and mission I say is the key to our achievement and motivation.”

Motivation: The increased energy, commitment and creativity that employees applied to their jobs was one of the observed impacts after the training. Individuals who participated in the training mentioned that it motivated them, as well as their co-workers. Illustrative examples of increased staff motivation are provided below.

Most of the teams and individuals who were part of the training worked extra hours without payment, on their own initiative and without their supervisor’s request or comment. For example, there was high demand for family planning by night students in Kolfe keranyio sub-city. To provide these services, Woreda9HC committed to visiting night schools to provide on-site services. Even though this was beyond the health center’s working hours, this was the only way the health center could meet these students’ family planning needs. Woreda 9 HC staff worked, without overtime payment, for 10 working days to provide after-hours family planning services. One nurse said:

“...before LMG training our annual FP coverage was low because we were waiting for clients to come to the HC and get service. But now, thanks to the LMG training, we are motivated to improve HC FP coverage from baseline 45% to 80% and tried to minimize unwanted pregnancy that could happen by night school students.”

One HC in Adama had been trying to build a fence for the center since its establishment seven years ago. Prior to the LMG training, most participants from this center were not involved in efforts to build the fence. After the training, the trainees went to the city administration to discuss the issue and convinced the administration to provide US$26,000 to build it. Within three months of the LMG training, the health center had the resources, and the fence was constructed.

One individual from a sub-city health office noted that the skills and knowledge learned from the LMG training made activity planning and implementation more efficient, noting:

“...the planned activities might be done even if we didn’t take the LMG training, but what the training provided us is the tools to getting things done before the deadline. We learned what real team work means, and how to do things differently from 'business as usual'.”

Work climate: The second round of LMG training helped trainees understand that positive work climates can improve an individual’s work habits. As a result of LMG training, teams assessed their organization’s work climate and made improvements as needed. For example, at the Han HC in northern Ethiopia, the health center director and head of administration and finance experienced conflict in their working relationship. The training was a good opportunity for them to meet with each other to discuss miscommunication and misunderstandings within the team. As a result, the team addressed their challenges and made significant organizational changes, which resulted in improved service delivery:

“There was an unpleasant work relationship between the administration team and the technical medical team, which was solved as a result of the LMG training. This is a lesson that work climate is a foundation for motivation, and addressing challenges which have existed for years give the staff new insight and new hope.”

System-based and team-based approaches: Trainees acquired system thinking skills to address challenges through team-based approaches rather than a program-focused approach. To improve the health center system, staff learned it was more effective to discuss how to collectively address challenges as a team, regardless of program area. For example, Woreda 10 HC in Addis Ababa planned to increase its target for the fourth antenatal care (ANC4) visits from 40% to 78%. Before the training, each HC team (UHE-p, MNCH, other stakeholders, laboratory and management) worked in a silo and were not coordinating to address the barriers to ANC4. Following the training, the teams worked collectively to increase ANC4 through the following mechanisms:

- **Urban health extension professional (UHE-p) team:** Had detailed discussions with all UHE-ps on the importance of ANC4.
- **Maternal, newborn and child health (MNCH) team:**
  - Created appointment calendars for ANC follow-up. UHE-ps were notified of those who missed their follow-up appointments.
  - Since Woreda10 HC has no ultrasound service for ANC mothers’ follow-up, they have established a referral network with Woreda5 HC, instead of referring mothers to private health facilities. So, the pregnant women in Woreda5 HC will get services at a minimal cost.
- **Laboratory team:** Identified that one cause for ANC defaulters is the unavailability of lab reagents. A mother who comes for ANC follow-up and does not receive lab services will not come to the health center the next time for follow-up because people who live in Woreda 10 are very poor and the majority of

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them are settled illegally. So, they cannot afford the cost of laboratory tests at private health facilities. Because of this, they thought that they may not get the next ANC follow-up service unless they bring the laboratory test result requested by the ANC provider. The laboratory team worked to obtain the necessary stock of lab reagents through discussions with the management team.

- **Management team:** Purchased lab reagents from other suppliers, instead of waiting for the Pharmaceuticals Fund and Supply Agency (PFSA). Additionally, to minimize the impact of power interruptions on service delivery, the management team purchased a generator/power back-up for 600,000 birr (US$22,000).

- **Finance and purchase team:** Provided training to the staff to streamline the procurement process.

**Improved management of resources:** Human and financial resources are more efficiently used after the training, using the same resources that existed before the training took place. Four health facilities identified the need for additional staff and have hired and trained more staff to address certain challenges identified during the LMG training sessions. Prior to training, the health facilities struggled to use their budgets efficiently. Staff are now using their existing budgets in a more efficient manner, and are working with their management teams to increase the budget where needed. The director of one HC in Tigray Region said:

"I was about to resign from the health center, as I was frustrated and spent a number of years working for the health center without results. However, after the training, all the health center staff know and work for the vision of the health center. I am not more of a manager but all the staff [now see themselves as] a manager and leader in their respective teams and departments. The training has made my work very easy and interesting. The same is true for the staff—with the same staff the health center is achieving high results and was first in the city in performance." 

An employee from finance & Purchase team shared:

"For several years our annual budget use did not exceed 60%. For any purchase request, we followed the rules and regulations of finance and there was no way around these rules. We did not respond to the management committee positively, but rather we complicated things. But after taking the LMG training we felt more receptive, and became risk takers without violating the finance rules and regulations. Now, thanks to LMG training, our budget use is 100%, which means we used it effectively to improve our HC activities’ performance."

Another participant noted that:

"...one of the major problems was that everybody, including the managers, was not recognizing or learning about the mission and vision of the health facility because the mission and vision was developed somewhere else and adopted by the health facilities. The LMG training showed us the importance of knowing our organization's mission, and individuals will work towards the mission by developing a shared vision."

One medical director said:

"When I come to the leading practices, the LMG training gave me the potential to use efforts within and out of the health facility. I better understand how to mobilize and align resources/activities and focus on challenges and how to overcome them. Before the training, I was waiting for results from each case team but, following the training, I engaged fully with each case team on their day-to-day activities. By doing this, I inspired the team instead of waiting simply for the result/output from them. So, my motivation has been increased, and I feel responsible and work towards the health facility goals without any reservation."

**Explore ways of overcoming individual and organizational barriers:** Trainees were encouraged to think beyond the vision set for their teams. During the training, they were asked to identify a challenge that had not been addressed but is a concern for the facility. Before taking the training, barriers were identified but there was no problem-solving around removing or working around the barriers. Now, trainees know they can think through these challenges. One of the participants from a sub-city health office said:

"I never knew that we had such potential to deliver. LMG equipped us on the managerial skills that we need in our everyday work. The team spirit and commitment has greatly improved."

Another participant said that:

"... the LMG training not only helped in the workplace, but it also helped me to improve my social life. It helps me to plan, organize and communicate with my colleagues."

Another participant said:

"... before I took the LMG training, I was waiting on team leaders and heads of the HC to solve challenges. I didn’t feel anything regarding the achievement of the activities, whether it is achieved based on the plan or not. Rather, my thinking was ‘business as usual’. But thanks to LMG training, now I can use my potential as much as I can to achieve the health center goals."
**Key lessons learned by implementing LMG training:**
LMG training motivated health care workers to improve health facility-level service delivery outcomes, strengthened integrated leadership to address day-to-day challenges in health facilities, improved management and leadership capacity at all levels, promoted the efficient use of resources, and empowered staff to do their jobs well. Teamwork and coordination improved across all levels of service delivery; individual-level commitment increased; health facility budget use, management and accountability improved; facilities better prioritized activities; and stakeholder relationships were strengthened. Overall, the LMG training resulted in great improvements in the health system.

Our study indicates that Ethiopia proved that low-income countries can improve health outcomes and access to services if policies, programs and strategies are underpinned by effective and responsive leadership and management at all levels.

**Conclusions**
This paper documents that LMG training has had positive effects on the health service delivery system by increasing individuals’ motivation, improving health care workers’ job satisfaction, and improving team spirit and communication between staff. Health care workers also gained additional knowledge and skills to perform their day-to-day activities to achieve the overall organization goals.

LMG training was shown to be pivotal in improving health service delivery outcomes. The training was appreciated by all trainees, the FMOH, RHBs and other stakeholders. The training served as a catalyst to improve provider motivation, provided the skills and knowledge to improve LMG within the facilities, and engendered positive competition between teams at different health facilities.

The LMG training resolved conflicts of interest within and between working units, standardized organizational visions and objectives, and brought about organizational changes that were based on team, rather than individual, efforts. The authors recommend that the government should expand and implement LMG training in all health facilities to fully realize the Health Sector Transformation Plan.

**Conflicts of interest**
The authors declare no conflicts of interest.

**Acknowledgements**
We are grateful to the Federal Ministry of Health, regional health bureaus, zonal health departments, town health offices, sub-city health offices, and primary health care units. We would like to thank Anne Austin, Luche Tadesse, Yibetal Tebekaw and Shaina Bauman for their critical review of this manuscript. We also extend our thanks to all those who cooperated with us in doing this work.

**References**
Annex 1: Activity tracking sheet

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Key performance indicator (KPI)</th>
<th>Time for beginning of the LMG intervention (in months)</th>
<th>Baseline data at the beginning of the month (target set in frequency/absolute number or percentage)</th>
<th>Target</th>
<th>Data source for baseline data</th>
<th>Definition of the measurement of the target</th>
<th>Outline or description of the methods or activities done to meet the target</th>
<th>Current status [Achievement] by _________ (Month)¹</th>
<th>Data source for current status</th>
<th>Remark</th>
</tr>
</thead>
</table>

¹ Monthly progress should be attached with separate sheet.

____________________________
Annex 2: Challenge model adopted from the LMG training manual – Reference No. 4

Annex 3: Leading, managing and governing for result model, adopted from LMG training manual – Reference No. 4