

*Clinical skills
laboratories
for continuous
professional
development*



**CULTIVATING A CULTURE OF SELF-DIRECTED,
SIMULATION-BASED LEARNING**

BACKGROUND

In recent decades, the Government of Ethiopia has made significant investments in the health workforce and infrastructure to improve maternal and child health services. Despite this, the Ethiopian health system still faces complex challenges including a shortage of human resources and medical supplies, inadequate infrastructure, weak referral linkages, and uneven provision of quality care to its population. Evidence shows that the shortage of health care workers and their low skill levels contributes to poor quality reproductive, maternal, newborn, and child health (RMNCH) services in Ethiopia [1]. The 2016 national emergency obstetric and newborn care (EmONC) assessment report reveals that only a small proportion of midwives were trained on basic EmONC [2]. Addressing the low skill level of practicing midwives and other health care workers providing service to women, newborns, and children is critical.

As a building block of the health system, Ethiopia's health workforce needs sustained skills building and staff distribution strategies to achieve sustainable development goals and universal health coverage [3]. Solutions include addressing staff skill tracking, professional development and training approaches, incentives, and ensuring that the right people are in the right positions. These solutions lie in both pre-service and in-service capacity building options, along with continuous job performance support and supervision. Pre-service training needs to be followed by consistent, comprehensive, competency-based in-service training to ensure satisfactory health services within a functioning health system [4]. However, to date, the delivery of in-service training packages has been inconsistent in training duration, content and coverage and tends to be didactic rather than competency-based [4].

PROJECT OVERVIEW

Since October 2017, the Last Ten Kilometers (L10K) project, implemented by JSI Research & Training Institute, Inc. with funds from the Bill and Melinda Gates Foundation, has been supporting the regional health bureaus (RHBs) and zonal health departments (ZHDs) to develop centers of excellence (COE) for RMNCH to ensure functional linkages between health facilities and high-quality services across the continuum of care [5]. The

COE strategy was designed to foster a culture of learning and innovation and prepare staff to be mentors and to provide a learning center for other facilities to model high-quality clinical care (HQCC) and strengthen supportive linkages. Comprehensive RMNCH skills labs within the COE provide pre-service and in-service practitioners (including clinical care providers at catchment and cluster health posts) the opportunity for hands-on experience using best practices in clinical situations. L10K collaborated with RHBs to establish 10 functional skills labs at four general hospitals, two primary hospitals, and four health centers in the selected demonstration zones.

L10K used the project’s monitoring and evaluation data and conducted a process evaluation, including in-depth interviews, in October 2019 [5] to document the practical aspects of establishing the skills labs.

DESIGN AND IMPLEMENTATION PROCESS

Design process

L10K worked with the RHBs to jointly identify problems and co-design solutions. L10K facilitated a series of consultations with the RHBs and ZHDs to solidify buy-in for the approach, identify specific sites, agree on stakeholder contributions to the skills labs, and plan for sustainable management and maintenance of the labs. L10K and the RHBs/ZHDs purposively selected the sites for the skills labs based on the availability of infrastructure, space for the skills lab, adequate human resources, and client caseload.

Following the selection of facilities, L10K conducted a facility needs assessment to inform solutions design. In a consultative workshop, stakeholders determined how skill labs fit within pathways to excellence, as defined by national standards, for health facilities and clinicians.

During the workshop, participants designed a package of interventions to turn facilities into COE and developed an action plan which clearly assigned responsibilities to the stakeholders and the project. The group developed a memorandum of understanding (MOU) with RHBs, facility managers, local health science institutions, and L10K to jointly establish and support the skills labs. Facilities led the process to organize skills lab rooms and assigned focal persons or skills lab officers to oversee the labs. L10K supported in equipping and furnishing the skills lab.

In the process evaluation, respondents identified strong and committed leadership as a key success factor for establishing the COE skills labs. Various stakeholders explained that participatory design and implementation of the initiative, strong support from L10K, and committed facility leadership were fundamental to successfully developing the skill.

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“The workshop was conducted in the presence of the senior management team and hospital board, [thus] it created the opportunity to receive more attention and acceptance including budget support.”

—HOSPITAL MATERNITY HEAD

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In addition to the commitment of leadership, all key informants agreed that L10K support in terms of budget, capacity building, provision of equipment, mentorship, and supportive supervision were major contributors to successful implementation.

Establishing comprehensive and well-equipped skills labs

The specification of the size, layout, and site of the skills labs were guided by national service delivery standards and skills labs development guidelines for medical and health science schools [6].

All six hospitals and four health centers in the demonstration zone dedicated an average of 136m² and 28m² area of space, respectively, to the skills lab, which included a registration/reception space, main demonstration area, storage area, and audio-visual area. Each lab can accommodate up to 10-20 trainees with about four-to-six trainees per station.

The number and type of skill sets that could be demonstrated and the type and specification of materials required to equip the skills labs were identified based on the specific needs of the RMNCH skill functions for each facility. Following the process of defining the scope and material requirement for the skills labs, L10K procured

equipment and supplies from national and international markets. The project provided facilities with basic skills training equipment and models to practice obstetric and newborn care, family planning, and other care procedures including IUD insertion, management of eclampsia, shoulder dystocia, malpresentation, administration of IV and IM injections, catheterization, postpartum hemorrhage (PPH) management, management of labor, instrumental delivery, neonatal resuscitation, and perineal repair (vaginal tears and episiotomy), and airway management. Hospital-level skills labs now have advanced mannequins to practice adult and newborn resuscitation, caesarian section, and neonatal intensive care monitoring.

DIAGRAM 1: Procedures that can be performed or demonstrated at the skills labs

OBSTETRIC	NEONATAL AND CHILD HEALTH PROCEDURES	REPRODUCTIVE/FP PROCEDURES	BASIC PROCEDURES
<ul style="list-style-type: none"> • Abdominal palpation • Spontaneous vaginal delivery • Vacuum delivery • Forceps delivery • Active management of third stage of labor • PPH management • Episiotomy incision and repair • Perineal laceration and repair • Caesarian section simulation • Lumbar puncture • Adult airway management 	<ul style="list-style-type: none"> • Immediate newborn care • Newborn resuscitation • Hypothermia prevention and management • Jaundice management • Preterm baby care • Kangaroo mother care • Basic child health care • Cold chain management • Infant injection, epidermal, subcutaneous, IM, IV • Vaccination 	<ul style="list-style-type: none"> • Pelvic assessment • IUCD insertion/removal • Implant insertion • Implant removal • Breast assessment and examination • Manual vacuum aspiration (MVA) 	<ul style="list-style-type: none"> • Infection prevention and control • Maintenance (waste management, cleanliness, etc.) • Clinical practices (wearing gloves, injection training, vital sign checking, suturing, IV administration, etc.) • Oxygen concentrating and administration • Recording and documentation

The health facilities, in coordination with RHB and L10K, renovated and re-designed the skills labs interiors to be conducive to demonstrating and practicing skills. Most facilities organized the skills labs based on the continuum of RMNCH care, starting with family planning and moving through antenatal care, obstetric and newborn care, and child health services.

RHBs/ZHDs and facility management staff negotiated the initial considerations for skills lab management included daily administration; training approaches; tracking rotations and use; maintenance of supplies, equipment, and cleanliness; and issues of sustainability and ownership, including running cost. The skills lab facilities prepared MOUs with internal staff that included integrating quality improvement (QI) projects and catchment-based RMNCH mentoring with the skills lab; staff training; and organizing skill-building sessions for newly assigned junior professionals. Using a standard checklist, health facility managers conducted skills gap assessments of health workers within the facility and in the catchment facilities to identify specific skill gaps and needs for continuous professional development. Based on the assessment findings, they developed schedules for training demonstration rotations. Each facility assigned either a full or part-time skills lab coordinating officer or a focal person with clearly defined roles and responsibilities.

All skills labs have registration logbooks. Tools and guidelines, such as clinical procedure menus and skills lab management guides, were also developed and distributed to each facility

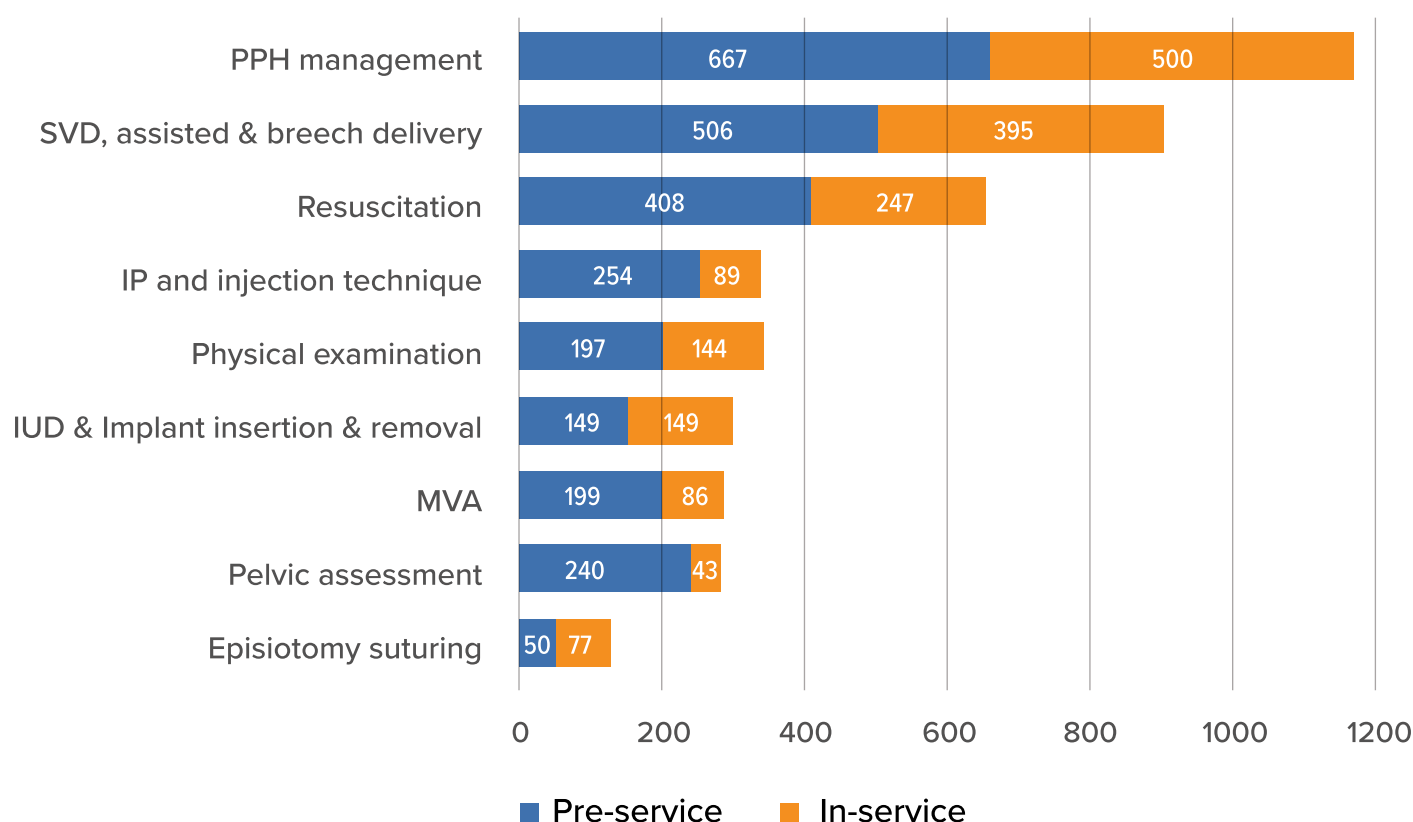
to effectively use skills labs. L10K worked with the RHBs/ZHDs to organize orientation workshops for skills labs focal persons and QI focal persons that focused on the skills lab management, skill set procedures, equipment handling, and preventive maintenance.

The financial review found that well-equipped and functional skill labs cost approximately \$41,000 at health centers, \$102,000 at primary hospitals, and \$139,000 at general hospitals. Renovations require an additional \$6,500 per room, and annual operational costs are approximately \$10,000 per facility.

FUNCTIONALITY AND EFFECT ON PROVIDER COMPETENCE AND CONFIDENCE

Based on the training schedules, facilities started providing training and clinical practicums on RMNCH skill sets as in-service training for internal staff as well as pre-service training for students in April 2019. Some facilities also started providing training to health extension workers (HEWs) at the skills labs as part of the catchment-based mentorship program. The most frequently practiced skill procedures were postpartum hemorrhage (PPH) management, routine procedure spontaneous vaginal delivery (SVD), and assisted delivery and newborn resuscitation. Training approaches include senior staff lecturing, demonstration and facilitation; peer demonstration and facilitation; and individual self-directed learning.

FIGURE 1: Number of demonstrated skill functions¹ during September 2019–March 2020 at skills labs



Based on feedback from trainees and pre-and post-training test results, overall motivation has increased, as have specific competencies in family planning, pre-eclampsia/eclampsia management, PPH management, assisted deliveries, and neonatal resuscitation.

“The skills lab has helped us to improve the quality of the services we provide. The lab helps us enhance our knowledge and skills and it also minimizes cases referred. For instance, when MVA was required in earlier times, when an emergency surgeon (the only health worker who performs this procedure) not available, the case would have to be referred since there was no trained staff nor the required equipment at this hospital. Today, staff skills are upgraded through demonstration sessions held in the skills lab where they are encouraged to perform procedures.”

—SKILLS LAB FOCAL PERSON

¹ One health care provider would demonstrate multiple skill functions

“Most health workers have theoretical knowledge but may not have practiced procedures like neonatal resuscitation and emergency CPR. Thus, health workers have benefited from the lab in improving their skills.”

—HOSPITAL CEO

SUSTAINABILITY AND EXPANSION

Staff and skills lab officers interviewed reported that they are motivated to use the skills labs to learn and enhance their skills. One of the skills lab officers affirmed that “Staff are very motivated to come and practice in the skills lab since the lab is well-equipped...it is located near their residence, addressing problems of distance they had to travel to receive training somewhere else.”

L10K field monitoring visits show that senior management is committed to sustaining the skills labs through their willingness to allocate budget for consumables, their initiative of organizing skills labs training with internal facility budgets, and assigning skills labs focal people. RHB heads witnessed skills labs at primary hospitals and health centers making a difference in creating a mechanism for health workers to improve referral linkages as well as their skills. RHB informants also expressed their aspirations to scale-up the skills lab to institutionalize the culture of learning through regional learning centers.

“The COE, specifically the skills lab and catchment mentorship, should be the main way to improve the skills of the health workers continuously. Sending health workers [to hotel-based training] for training is not financially sustainable.”

—TIGRAY RHB HEAD

“....The skills lab is critical. We know the capacity of our colleges and universities. We know the midwives and other professionals did not have enough exposure in their pre-service period or school. I think the skills lab should be part of the facility assessment in the regulatory system of assuring quality...”

—SNNP RHB HEAD

LESSONS LEARNED

L10K designed a sustainable COE strategy and hands-on skills labs to ensure current and future providers learn and practice high-impact skills, as well as how to operationalize an integrated continuum of care approach from communities to hospitals. L10K has demonstrated how to establish skills labs at health care facilities for pre-service and in-service training purposes, a valuable resource for government and development partners to replicate in similar settings. The skills labs help providers to acquire psycho-motor, communication, and decision-making competencies. Establishing the skills lab on the premises of health care facilities improves staff motivation to continuously practice and acquire skills for the provision of high-quality clinical care to mothers, newborns, and children and complements other professional development mentoring platforms. The availability of local skills labs also minimizes the need for frequent off-site, hotel-based training. This increases efficiency by reducing the interruption of health services due to extended off-site training attendance and provides more opportunities for continuous professional development at lower costs [7]. Detailed, jointly planned consultations with stakeholders are critical for shared recognition of the value of simulation training and shared commitment to ongoing skills lab functionality. The skills labs are also being used by local medical and health science schools which have shown promising engagement for improved pre-service training.

L10K's strong support, participatory design, and committed facility leadership helped facilitate the successful implementation of the skills lab initiative. However, skills lab functionality depends on the commitment and enthusiasm of the staff, and sustainability relies upon program managers' commitment to implement and maintain simulation training [8], as well as their encouragement of staff to demonstrate their skills. Most RHB leadership and facility managers were not only champions throughout the design and implementation cycles, but also envisioned nation-wide scale-up because of their familiarity with the staffing and skills gaps impacting pre- and in-service training quality. Some managers have also promoted skills labs as a mandatory aspect of continuous professional development, as well as a criterion for health facility accreditation. This initiative has provided the foundation for skills labs to become a permanent and lasting component to improve and maintain quality care within the Ethiopian health system.

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