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# Strengthening Pre-Service Education in Liberia: A Systems Approach

## MCSP/HRH Liberia Case Study

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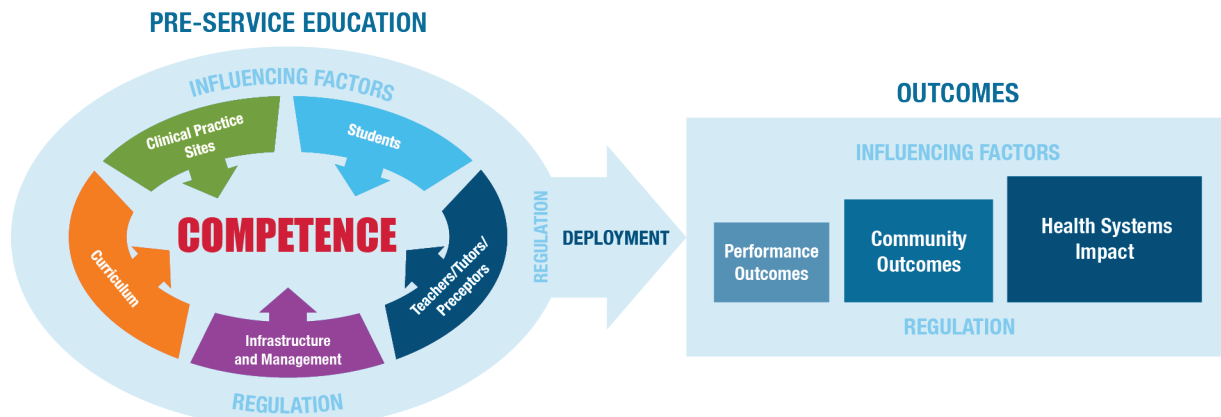
### Background

The United States Agency for International Development (USAID)'s flagship Maternal and Child Survival Program's Human Resources for Health Project in Liberia (MCSP Liberia/HRH) worked with the Ministry of Health (MOH) to accomplish two key objectives: build the capacity of pre-service education (PSE) faculty and educators and strengthen the PSE learning environment for two cadres of health workers prioritized by the MOH—midwives and medical laboratory technicians (MLTs). When MCSP began its work in 2015, Liberia faced a major human resources crisis, with insufficient numbers of health workers to meet the country's need. The crisis was exacerbated by the Ebola epidemic that peaked in 2015–2016, during which many health workers left their positions or were victims of the disease. The epidemic also highlighted a major gap in health worker skills, requiring an enormous investment in in-service training, especially focused on infection prevention and control measures. As part of rebuilding the country's health system, the PSE system needed to be transformed so that it could produce a fit-for-purpose, productive, and motivated health workforce.

MCSP's work in PSE was based on the conceptual framework developed by MCSP's lead implementing partner, Jhpiego, in 2012, based on an integrative review of the literature (see Figure 1). The conceptual model identifies direct and indirect factors that influence graduate competence and points to the expected outcome of quality PSE. This brief is focused on MCSP's interventions for clinical practice sites, students, faculty, preceptors, infrastructure, management, and curriculum to sustainably transform the PSE system to produce fit-for-purpose midwives and MLTs.

**Figure 1. Conceptual Model: The Health Impacts of Pre-Service Education**

### CONCEPTUAL MODEL: THE HEALTH IMPACTS OF PRE-SERVICE EDUCATION



## Methodology

### Improving the Quality of Faculty and Preceptors

In July 2016, MCSP conducted a rapid needs assessment in the country's five midwifery and three MLT schools and their related clinical settings. One of the key gaps that emerged was teaching skills among faculty in the schools and preceptors who observe and teach students in clinical settings; some were competent health workers, but many had never received any training on how to be effective faculty. To address this need, MCSP delivered a series of 3- to 5-day workshops to build teaching and student assessment capacity.

MCSP combined the workshops into a blended learning Faculty Development Program (FDP) that provides comprehensive training to both faculty and preceptors. The first cohort of 18 FDP participants graduated in March 2018. In late 2018, MCSP transferred management of the program to a local university so that it will continue after MCSP's closeout. The Liberia Board of Nursing and Midwifery (LBNM) approved the FDP as a certificate course for continuing education credits, and the FDP can be used by schools to meet educational institution accreditation requirements.

MCSP also delivered clinical skills trainings to provide technical updates to faculty and preceptors. The project used an evidence-based training approach involving brief workshops; short, facility-based practice sessions that were repeated over time; and mMentoring through regular text message reminders to provide normal and emergency obstetric and newborn care trainings for midwifery faculty and preceptors and key skills trainings for MLT faculty and preceptors.

To further strength faculty and preceptor capacity, MCSP embedded PSE mentors in each school to support participants in training their peers. These mentors also engaged with faculty and preceptors through supportive supervision and mentorship visits intended to reinforce their learning, aid in applying new skills, and support continuous improvement.

MCSP's evaluations of faculty and preceptors showed steady improvements in the quality of their performance. At baseline (conducted in March–April 2017), faculty met an average of 48% of criteria on presentation checklists to evaluate the quality of their teaching and an average of 94% of the criteria at endline (conducted in March 2018). At baseline, faculty and preceptors met an average of 77% of pre-established standards for their qualifications and performance, while at endline, they met an average of 97% of the standards. See more information on performance based on standards in the Key Results section.

**“When I started teaching, I knew nothing about teaching, but with MCSP training and follow-up with the mentors, I am using the skills in teaching and assessment that help my students learn.”**  
–Midwifery faculty member

### Updating the Curricula

Because curricula for the midwifery and MLT schools were last updated in 2011, MCSP supported the regulatory bodies—the LBNM and the Liberia Association of Medical Laboratory Technologists—and the MOH in revising the curricula, a key task, especially in light of the recent Ebola epidemic and the need to strengthen infection prevention and disease surveillance skills. In April 2016, MCSP analyzed the main tasks required for each cadre. Results showed that health workers had not learned through PSE about many of the tasks performed frequently or had received information about them but were not given demonstrations or practice opportunities. MCSP worked with the regulatory bodies and the MOH to update the curricula, focusing on frequent and critical tasks (tasks that are necessary to save lives) and emphasizing both demonstration and practice (including mastery in the simulation center or practicum laboratory before performing the tasks with a patient). MCSP also ensured that the curricula for both cadres included information on gender concepts, gender as a determinant of health, gender-sensitive services for men and women, and prevention and management of gender-based violence. The regulatory bodies committed to reviewing and updating the curricula every 3 years—an important commitment for sustainability beyond the project.

## Improving Infrastructure

Sufficient infrastructure for practice in simulation and integration of use of technology are essential for improving PSE. MCSP found that simulation centers and practicum laboratories in schools, which are intended to allow students to practice new skills and increase their competencies, did not exist or were poorly resourced and managed, preventing students from using them. Starting in September 2016, MCSP PSE mentors and other staff worked with each school to identify and invest its own funds to establish a space for its simulation center and/or practicum laboratory. MCSP also worked with the schools to ensure that trained, full-time simulation center/practicum laboratory clinical instructors were assigned at each school. MCSP then procured all equipment and supplies for the centers and laboratories. In total, MCSP established or upgraded five simulation centers and three practicum laboratories.



Students work with an MCSP staff member in one of the new simulation centers. Photo by Erica Chin, MCSP.

In addition, MCSP set up computer labs in each of the schools. The program hired personnel to support and train existing information technology staff in each school and to support delivery of an introductory computer technology course for faculty, staff, and students. MCSP coordinated with the schools, the MOH, and other partners and donors on these interventions; thus, the schools have been able to retain Internet connectivity and, in some cases, information technology staff. These infrastructure improvements will contribute to continued educational quality beyond the life of the project.

## Improving Leadership and Management in Schools

MCSP's rapid assessments showed that school directors did not feel fully empowered or enabled to lead and manage their academic institutions. Many lacked key management skills and practices and had limited capacity to access data on budget, student intake, attrition, or graduation rates. This gap in leadership and management led to limited retention of staff, inability to perform basic financial management, poor teaching quality, insufficient student-to-teacher ratios, poor learning environment quality, inadequate clinical practice management, and other critical issues.

MCSP developed a Leadership and Management Development Program (LMDP) to build the capacity of school directors to perform skills that follow the LEADER acronym: learning environment management, effective communication, assertive negotiation, data utilization and management, engaged problem-solving, and resource mobilization and management. Four 2- to 3-day training sessions, totaling 9 days, ran from May 2017 to March 2018. The LMDP resulted in improved budgeting (which was a new topic for most deans and directors), management, and human resource practices. By the end of the training, all directors and deans were developing budgets; in one example, a school director reported that skills he learned through the LMDP enabled him to create a resource mobilization strategy to successfully fill a chronic gap in funding for student clinical practice internships.

MCSP also created an academic management information system database and online interface called PreSIS, which enables schools to properly manage all students' personal, academic, enrollment, admission, and graduation records, enabling accurate reporting for decision-making that promotes improved educational quality. PreSIS helps meet MOH health management information system goals and priorities to gather information on student records, performance, and graduation rates from the PSE institutions, and allows deans and directors to easily access data for use in planning and budgeting.

MCSP's evaluations of midwifery PSE school management based on LBNM standards show that the project was effective in improving leadership and management in the schools, which met an average of 78% of standards at endline (March 2018), compared to 68% at baseline (March–April 2017).

## Improving Clinical Practice

Before MCSP's interventions, schools did not have effective working relationships with clinical practice sites. Memorandums of understanding previously in place were not observed, and no frameworks, schedules, or communication mechanisms were established to ensure that students could practice the skills they were taught in school. In addition, preceptors were not oriented or prepared to supervise students in practical rotations or assess their clinical skills. To address these issues, MCSP facilitated key stakeholder meetings to bring staff from schools and clinical settings together to develop a structured framework for coordination. Following the meetings, MCSP's PSE mentors continued to work with schools and clinical settings to follow up on their action plans and continue coordination.

MCSP also established mini-simulation centers called preceptor corners in health facilities to provide a safe and appropriate space for preceptors to practice certain skills before demonstrating them for students and to train students on models before carrying out procedures on patients. MCSP developed mobile preceptor corner kits, which included simulation equipment that was easy to move when space limitations were an issue or equipment could not be securely stored in the facility. Staff in the facilities credited preceptor corners and repeated practice opportunities for the significant improvements in services.

Clinical practice sites reported dramatic improvements in performance on standards related to antenatal care (meeting an average of 26% at baseline in July 2016, compared to 90% at endline in July 2018), normal labor and delivery (17% to 97%), obstetric complications (57% to 96%), and postpartum care (8% to 92%).

**“Before [the preceptor corners], we would have been fumbling and doing all sorts of unnecessary things, and the mother would have lost this baby, but when the doctor handed us the baby, we just followed the skills [in newborn resuscitation] as we had practiced here, in the preceptor corner, and the baby is now with the mother doing well and breastfeeding.” –MCSP-trained preceptor**

## Supporting Student Success

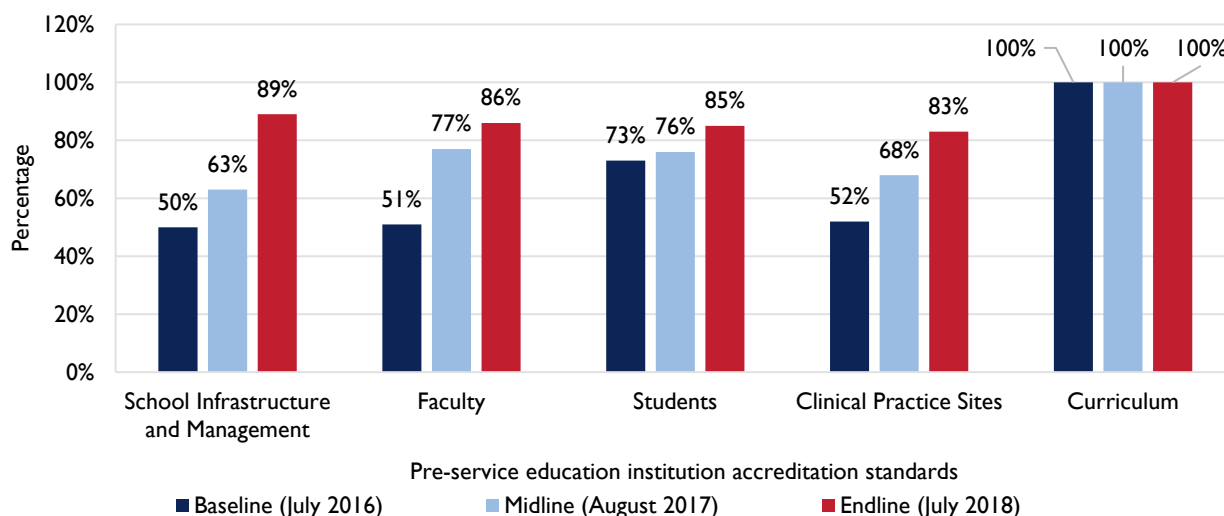
MCSP implemented efforts to reduce student attrition and ensure competence at graduation. The project worked with the Collaborative Support for Health (CSH) Program to ensure that CSH scholarships helped support midwifery and MLT students, as financial burdens contribute to student attrition. In addition, MCSP supported the implementation of gender-responsive pedagogy, adding gender-responsive standards to the educational accreditation standards, establishing sexual harassment prevention policies, and reversing policies requiring schools to expel pregnant students. These changes should result in significant reductions in female student attrition. MCSP also worked closely with professional associations to advocate for increasing recruitment efforts for new student enrollment. In MLT institutions, the percentage of female students enrolled increased from 28% to 35% in 2 years, providing additional economic empowerment opportunities for women.

## Key Results

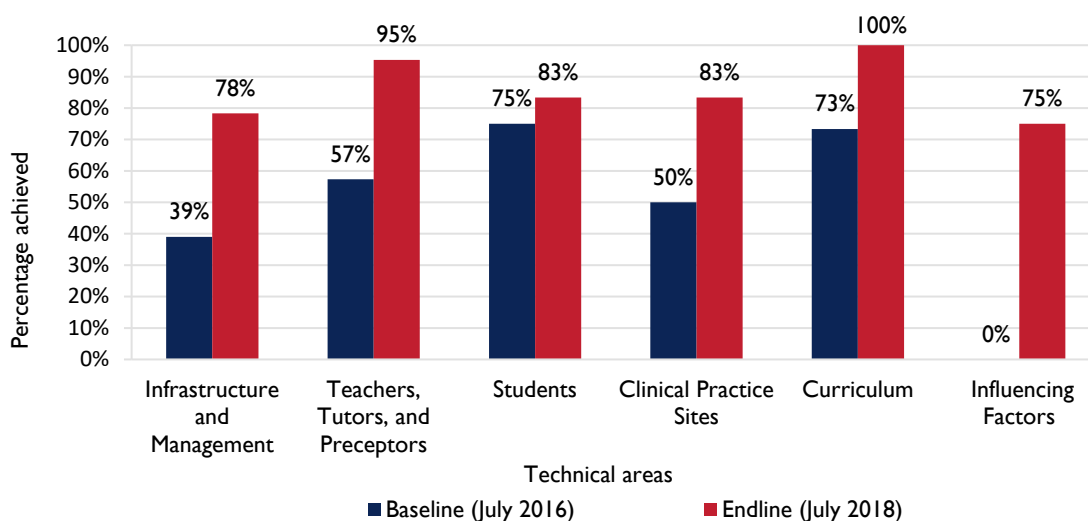
Most results are summarized in previous sections, while additional overall outcomes are below. MCSP's results focusing on indirect factors, such as policy and regulation, are included in other case studies.

- Both midwifery and MLT PSE schools showed significant improvements in their performance outcomes based on standards (see Figures 2 and 3 below).
- Midwifery and MLT graduating students' final objective structured clinical exam results improved from 85% at baseline to 100% at endline and from 80% at baseline to 100% at endline, respectively, meaning that graduates were more competent in carrying out key clinical tasks upon graduation.
- Midwifery graduate pass rates increased from 81% in 2016 to 97% in 2017, resulting in increased numbers of qualified midwives and improving the return on PSE investment for the government of Liberia, donors, and regulatory bodies.
- Key resources and structures to improve PSE, including the FDP, revised curricula, simulation centers and practicum laboratories, the LMDP, memorandums of understanding between school and clinical practice sites, and scholarships, have been developed, and plans are in place to ensure that each is maintained by the PSE schools and other Liberian institutions.

**Figure 2. Improvements in the Average Performance of Midwifery Pre-Service Education Institutions on Liberia Board of Nursing and Midwifery Educational Accreditation Standards**



**Figure 3. Improvements in the Average Performance Medical Laboratory Technician Pre-Service Education Institutions Based on a Rapid Assessment<sup>1</sup>**



## Lessons Learned

MCSP learned lessons during implementation that can inform other similar projects:

- MCSP’s PSE mentors in each school were critical to success. They were clinicians with four major roles: school leadership support, faculty capacity-building follow-up, clinical setting improvement support, and liaison support between MCSP and the schools.
- This project included a major procurement component. Having exclusive, dedicated, expert procurement staff focused on distribution and inventory systems setup would have increased efficiency.

<sup>1</sup> Because MLTs did not have accreditation standards at the inception of the project, MCSP conducted a rapid assessment to assess institutional performance at baseline and endline.

- Addressing academic leadership and management, not just faculty and clinicians, via the LMDP resulted in important improvements in school leadership and management, teamwork and communication, budgeting, resource mobilization, and use of data for decision-making that will be sustained.
- Transition planning should occur from the very beginning, especially for projects with short timelines such as this one. MCSP developed letters of agreement with the schools, which helped facilitate transition planning early in the project, but additional time to more clearly define and plan for transitioning at closeout would have been beneficial.
- Future programs focusing on PSE improvements should allot additional time to provide faculty with the skills to educate their peers on effective teaching practices. This time is critical to ensuring that future faculty are trained in these practices and to sustaining a high-functioning PSE system.
- The LMDP originally included a twinning partnership with the University of Michigan, but 2 years was too short a time frame for implementation. Future programs using this approach should allot a minimum of 5 years, allowing time to establish roles, responsibilities, funding, and implementation mechanisms. A regular means for virtual support between the partners should also be established.
- Regular communication (e.g., biweekly meetings) between USAID and the implementing organization is essential for the rapid implementation required when operating under emergency funding.



A woman waits with her child to be seen at one of the MCSP-supported clinical practice sites. Photo by Erica Chin, MCSP.

## Recommendations

To maintain the progress that MCSP has made, the project recommends the following, which should eventually result in more students enrolling in and graduating from the programs, producing a stronger and more qualified workforce to address the health needs of the Liberian population:

- The MOH should develop clear policies to support and monitor PSE to ensure that interventions now in place are maintained and continuously updated.
- Regulatory bodies should clearly assert their authority over PSE and use the newly established systems to ensure that the quality of staff employed by training institutions and of students graduating from these institutions continues to improve.
- Schools should continue activities at their level, including conducting faculty and preceptor trainings each semester, performing supportive supervision and mentoring using checklists, and continuing to use PreSIS to support better use of data for decision-making and advocacy.
- Current donors or partners supporting PSE should build upon existing work and materials and continue to prioritize clinical practice strengthening to ensure competence of students at graduation.

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