



USAID
FROM THE AMERICAN PEOPLE

Maternal and Child
Survival Program



Skills Laboratories in Midwifery and Nursing Training Colleges Improving Pre-service Education in Ghana

January 2019

www.mcsprogram.org

MCSP Implementation Research Brief Series

BACKGROUND

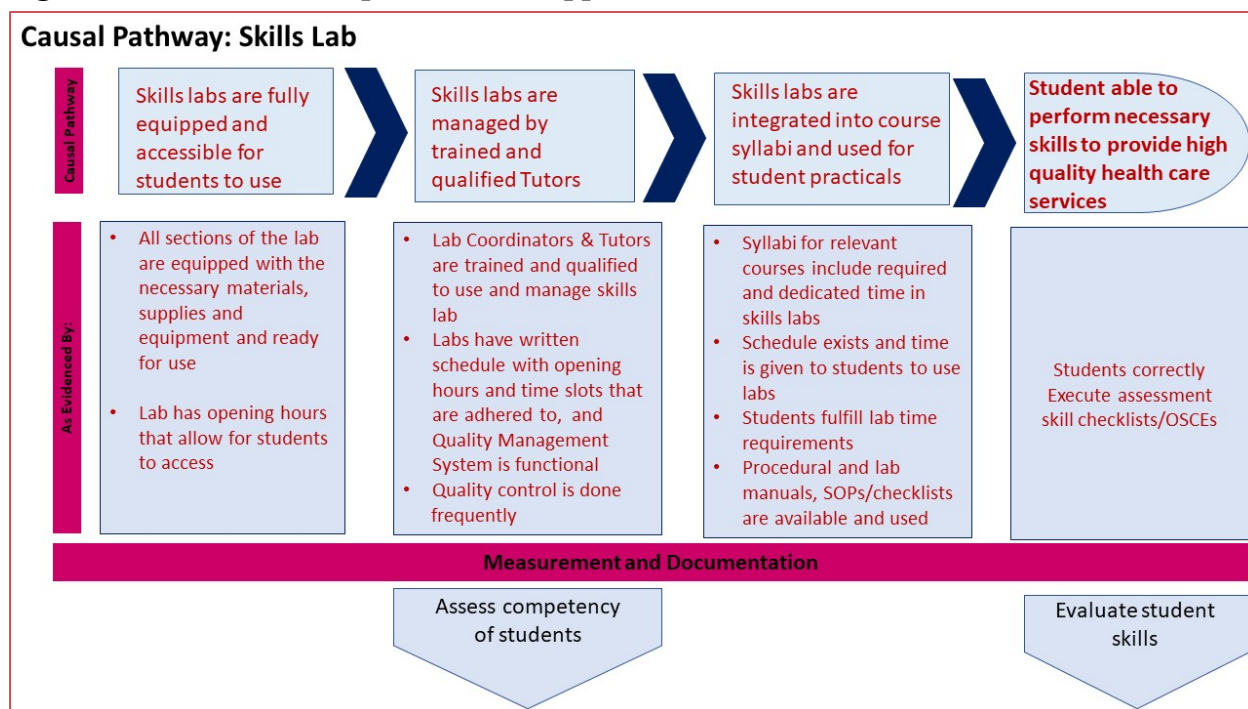
In Ghana, maternal mortality (319 per 100,000 live births) and under 5 mortality (52 per 1,000 live births GMHS, 2017) has stagnated. In order to improve maternal and newborn health outcomes, the Government of Ghana decided to increase the availability of nurses and midwives by establishing 40 new midwifery schools and 21 general nursing schools between 2010 and 2015. Despite the establishment of these schools, many challenges remain, including insufficient resources for training, variable and at times insufficient knowledge and skill levels of tutors, lack of structured mechanisms to monitor instructor performance, lack of didactic materials, and unacceptably high instructor to student ratios.

Skills labs provide students with the opportunity for hands-on practice with anatomical models before applying skills in real life situations, preparing them for better practice in the workforce. In 2014, MCSP conducted an initial assessment in all nursing and midwifery training colleges (NMTCs) to understand skills labs usage and availability of appropriate equipment for instruction. Results showed that none of the schools had a full complement of the required anatomical models and simulators, and some did not have a designated space for a skills lab. In response, MCSP developed a three-pronged implementation approach (Figure 1) to enhance skills labs in order to improve students' life-saving competencies in maternal, newborn and child health, malaria, and family planning. The Program purchased and distributed medical equipment and anatomical models according to the needs of each school, trained 330 tutors on management of skills labs with a focus on use of models and effective teaching methods, and integrated the use of skills labs into course syllabi and student practical sessions. This brief discusses results of a study and other documentation exercises conducted by MCSP to better understand the successes and challenges of skills labs in the pre-service education setting.

Study questions

- Three years after establishing / strengthening skills laboratories, what changes were seen in student skills in MNH, malaria and FP as measured by objective structured clinical examination (OSCE) scores?
- What are the perspectives of students, tutors and principals in nursing and midwifery schools regarding the updating and use of skills labs?

Figure 1: MCSP Ghana implementation approach for skills labs in NMTCs



METHODS

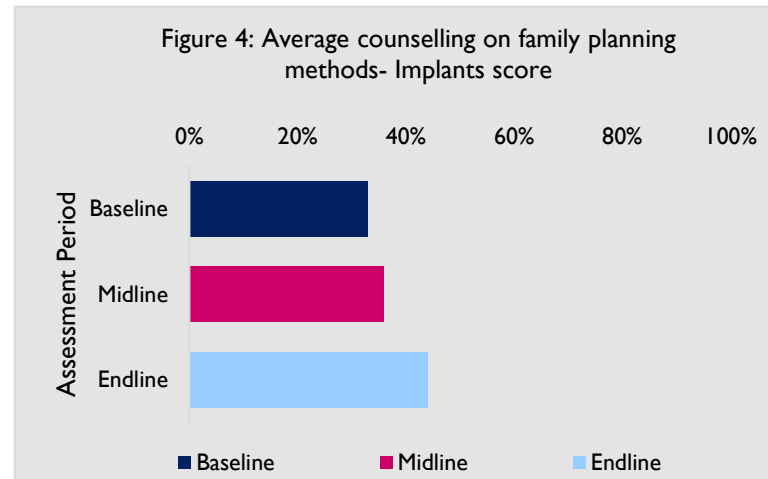
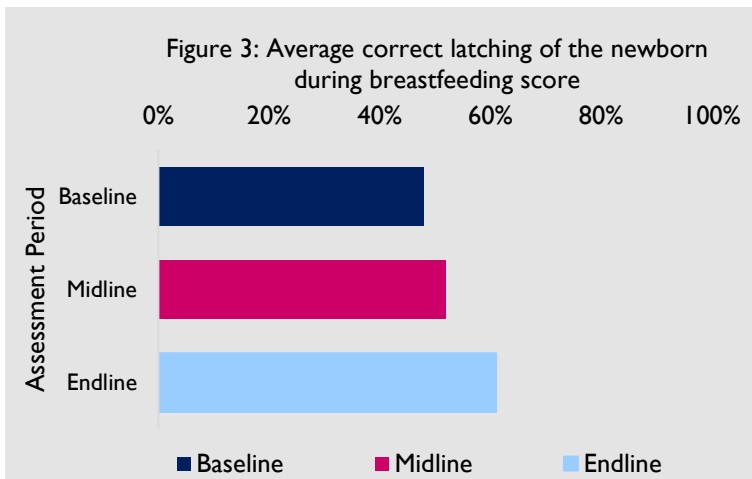
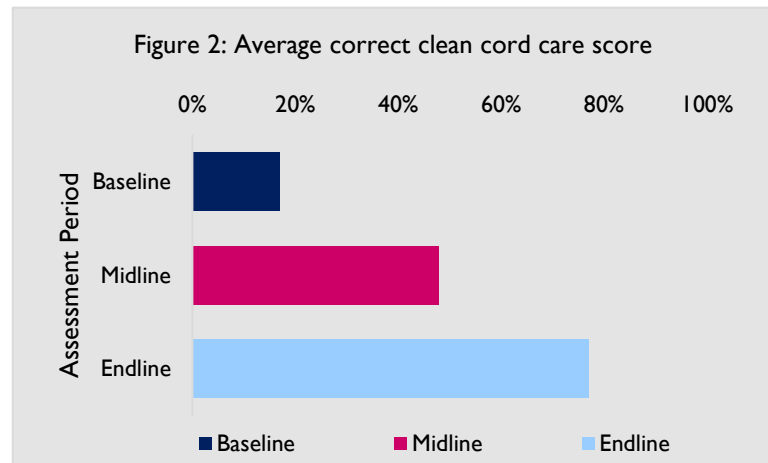
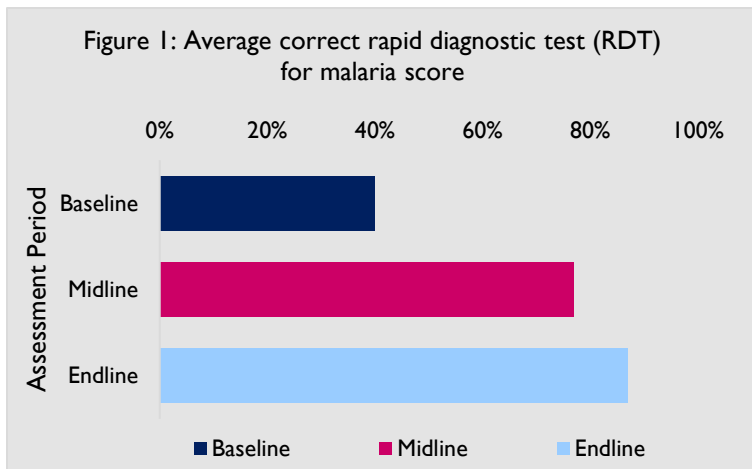
MCSP used a cross-sectional mixed methods approach to document skills labs use and student skills in four community health nursing training Schools (CHNTS) including Fomena, Winneba, Tamale and Navrongo. Objective structured clinical examinations (OSCEs) were administered using a successive independent sample design: pre-intervention/baseline, one year after project support began and two years after project support began (endline) with 30 third year students. The selected schools' skills labs were equipped several years prior to the June 2018 endline assessment to allow sufficient time for students to access and use the skills labs. Four OSCE stations were used in the study at all-time points; malaria rapid diagnostic tests (RDTs), home visit counseling on correct latching during breast feeding, method-specific counseling for Jadelle contraceptive implant, and umbilical cord care. Additionally, 60 key informant interviews (KIIs) were conducted with 10 school principals, eight tutors, and 40 final year CHNTS students to understand their perceptions on the usage and management of skills labs and its impact of the skill labs on student competencies. KIIs on the same topics were also completed with students, school principals, skills lab tutors and midwifery tutors at 10 NMTCs.

FINDINGS

Student OSCE performance

The figures below show improvement over time in student competencies in four thematic areas. Figure 1 shows an improvement from baseline (40%) to 87% at endline for correct testing for malaria using RDT and Figure 2 shows an improved performance in clean cord care for newborns from baseline (17%) to 77% at endline. In addition, Figure 3 illustrates the slight improved performance in counseling on correct latching of the newborn during breastfeeding from baseline (48%) to endline (61%). Correct counseling on implants (family planning methods) increased from baseline (33%) to endline (44%).

Figures 1-4: Improved average student score in a specific skill (n=360 students, 120 students per each of the three time points)



Qualitative Findings on Use of Skills Labs

Qualitative data from students, tutors and principals provided perspectives on the usage of skills labs, challenges, significant changes and success stories associated with the skills labs in the school.

Ability to practice with new/improved skills labs

Respondents revealed that the refurbished skills labs have brought significant improvements to the schools. Some principals and tutors indicated that prior to skills lab installation, they were teaching theory without being able to show students the instruments they should use for a procedure. In addition, some tutors said they were previously teaching in abstract since there were no skills labs especially for midwifery students. However, now they are able to demonstrate with the anatomical models and instruments with which students could see and practice. This is critical for students to be able to translate learning into real life situations in the field.

“It’s like you see and you do and you remember. So in this way [skills labs have] helped the students to sharpen their skills. Unlike previously, when we did things in abstract...” – Principal

“We were using an [anatomical model] whose chest is not expanding [laughs] but with this one, we do it and the chest expands. I remember when I was taking them through resuscitation, when a student was practicing resuscitation and I squeezed simulation bulb and she said, ‘the baby is breathing’ and I said ‘yes, the baby is breathing.’ So I think what you have done for us has helped us.”- Tutor

“...when we were learning about the pelvis, we didn't go there [to the skills lab] but the tutor brought the pelvis to the class for all of us to see so... it was well understood.” – Student

Translating from Models to Real Life

While there is sufficient evidence on the importance of practice and simulation for skill development, it is not a replacement for working with actual clients.¹

Some respondents revealed that it is not easy to translate skills learned when using models to demonstrating those same skills with real people. Despite this sentiment, participants also noted that practice with models was very helpful in building their skills. They felt that they are able to perform better than their peers who have not had a chance to practice with models under clinical staff observation.



A community health officer conducts a home visit with a client. / Photo: MCSP/Karen Kasmauski

Differences between school and practicals

Respondents also indicated that while they are taught correct clinical procedures in school, when they go for practicals in facilities, the in-charges or supervisors have different procedures that skip some important steps. These modified procedures are, in-part, due to resource constraints at preceptor sites and diminished knowledge and skills among health providers who learned the procedures long ago. As a result, preceptors do not always practice the procedure correctly. Tutors mentioned that when the students return to school, the tutors correct any mistakes that students learned during practicals.

Students gaining competencies

Respondents indicated that the skills labs have tremendously impacted student competencies and better prepared them for the workforce, based on preceptors and tutors own observation in the wards during student clinical practice at the facility. Facility in-charges reported that their student were able to translate what they learned in class to real-life situations. Below are some examples the participants shared:

¹ Johnson, et al.: An Integrative Review and Evidence-Based Conceptual Model of the Essential Components of Pre-Service Education. *Human Resources for Health* 2013 11:42 <https://doi.org/10.1186/1478-4491-11-42>

“Yes, with [pelvic] examination... we demonstrated it there and I went to the ward, I was asked to do a [pelvic examination] on a pregnant woman. I was very happy when I had the correct dilatation we were supposed to get.” – Student

“...I had an experience when we sent the students for labour ward assessment... The ward in-charge said they were very good with the delivery.”- Tutor

“...like the municipal hospital maternity wing, when they go there for practicals, the in-charges will tell you these students are good. The comments and the report we get from the clinical sites testify that they are good. And those weak ones too, they help them out. They polish their skills. Right now when you go to the maternity ward, all of them are our students. They are manning the place right now.”- Principal

Overall, respondents noted that demonstrations contribute effectively to teaching and learning in the skills laboratories. The practice sessions, tutors, and sufficient resources make the learning environment more efficient than teaching and learning in the practice sites. However, students have limited access to practice sessions, which means that the full benefit of the skills labs are not being fully realized.

Remaining challenges of skills labs

Some of the remaining challenges related to skills labs include:

- **Pervasive high student to tutor ratio:** Nationally, due to health workforce goals and pressure to maintain high enrollment, many training institutions admit far more students than they have the capacity to train in a setting with unacceptably high student to teacher ratios. Unfortunately, tutors are not hired to meet this growing influx of students, both because school administrations want to keep costs low and also



Checking for pulse during resuscitation / Photo: MCSP/ Kate Holt

because few incentives exist to becoming a tutor. Tutors are paid the same as facility level staff even though the demands on their time are greater and their holidays are fewer. Unlike their facility level counterparts who work shifts, tutors must take on responsibilities that stretch into the evenings to include grading homework and tests and responding to student inquiries.

Further, staff must be a trained nurse in order to teach in the skills labs; other tutors are subject matter tutors and cannot teach in the labs. The resulting high student to tutor ratio, which is on average 60 students to 1 in the schools surveyed for this work, creates significant problems in the classroom and in the skill labs as students are forced to wait a long time to practice on anatomical models in the presence of a tutor. In addition, the skills labs are not big enough to accommodate all the students, which means students must rotate through, lessening their time to practice on the models.

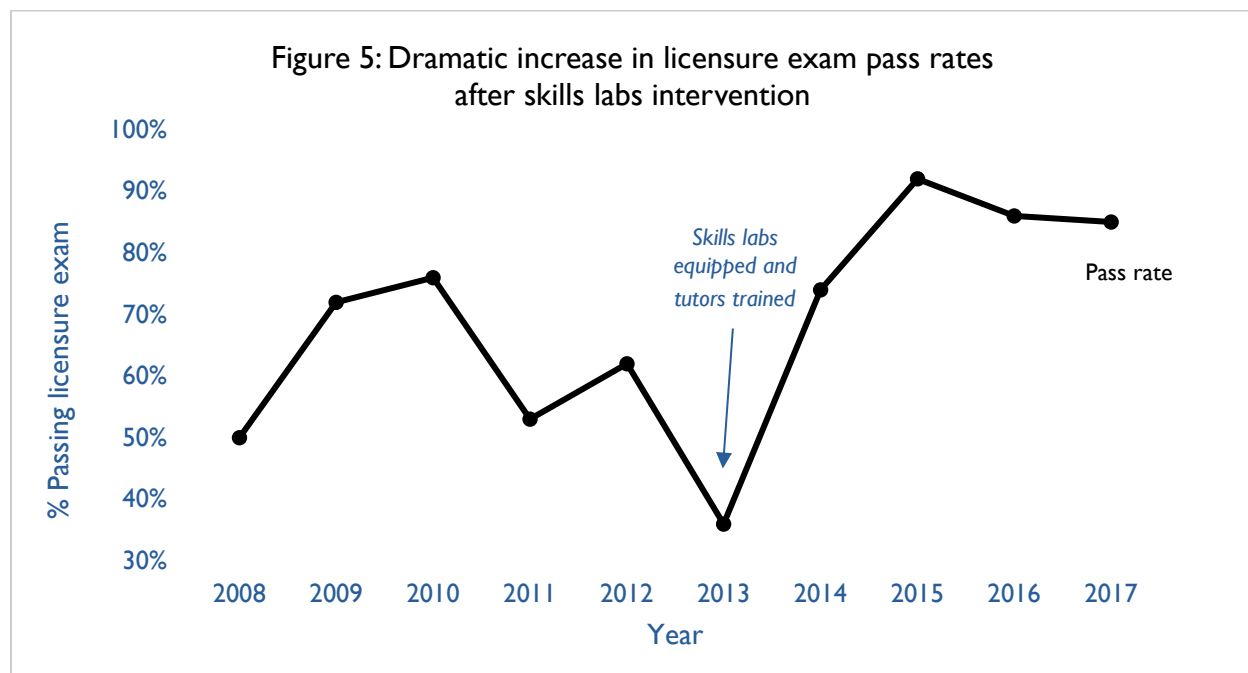
- **Skills labs are still not as accessible as they can be:** Skills labs are locked in the majority of schools when not in use for practice sessions, with some administrators noting concerns that equipment might be stolen. Many schools also have issues with skills labs coordinators who maintain ownership of the keys to the lab and dictate when the labs will be opened or closed,

making it hard for students to access when they need to. Results from this activity found that in cases where principals were heavily involved in the core programming of the school, skills labs were open at times that are more convenient for students.

- **Inadequate care and incorrect numbers of anatomical models:** Across the studied schools, some participants noted that they have too few models in the skills labs making it difficult for the students to find time to use the models. In other schools, they have too many models and some are never used. Many participants noted that due to frequent use, the models break and are never repaired. One participant noted that the components of the models can be found scattered throughout the lab.
- **Overloaded curriculum:** Tutors interviewed for this study said that the amount of material in the curriculum exceeded the time allotted for teaching students. The tutors frequently made up the time by letting fewer students practice in the skills labs after they demonstrated a new skill.
- **Lack of understanding of how to use an anatomical model:** Despite MCSP training, some tutors do not know how to operate the anatomical models which makes teaching and demonstration difficult and creates a barrier to learning for students.

“For instance, one group that I taught last semester, they were 105 and another was 53 and we needed to go to the skills lab at the same time because the timing was the same, so I had to divide the 105 into four groups and the 53 too, had 3 groups. So that was a challenge because we needed more time.” -Tutor

An analysis of student Nursing and Midwifery Council’s (NMC) licensure exam pass rate from 2008 to 2017 shows a pass rate that has increased by 35 percentage points (figure 5). This time frame encompasses the years before and after skills laboratories were upgraded in the schools, along with other interventions implemented by MCSP to improve educational quality, (such as the addition of eLearning, expanded clinical preceptor training and faculty and clinical preceptor updates). This increase in pass rate may indicate that the skills labs, among other interventions implemented by MCSP, the Ministry of Health (MOH) and other stakeholders, have contributed to a higher percentage of competent graduates and to a larger workforce.



RECOMMENDATIONS

Findings from this activity show that students are utilizing the skills labs and feel that they are better prepared with the necessary skills to join the workforce. It is necessary, however, for schools to look at the performance of their students as indicators of the quality of nursing and midwifery education they are receiving. For example, while students competence in counseling on implants (a family planning method) and assisting on breastfeeding increased from 10 to 20%, around half were not able to demonstrate the skill correctly. This might indicate that critical gaps in the practice of these skills remain. If this is an indication of insufficient practice and it is not addressed, Ghana will continue to yield a sub-optimally prepared workforce.

We conclude by recommending that:

- NMC should consider institutionalizing skills lab management committees in health training colleges and training additional preceptors that can help ensure that the skills labs are available to students after normal school hours. In addition, NMC should provide and train tutors on standardized learning guides to ensure learning and practice of various procedures to help students to be conversant with the right way of doing procedures. This will ensure that trainings of health workers use the same methodology in all schools.
- Leadership training for NMC, MOH Health Training Institute, and principals and their teams will support the necessary cultural shift toward pro-active problem solving within the nursing and midwifery education sector and promote the use of data for continuous quality improvement. Ideally, this leadership training for schools would happen jointly with the national level to instill a sense of teamwork across the levels and could also include a team from Ghana Health Service (GHS) to support the collaboration between pre-service and in-service – particularly in areas such as technical updates and planning for health workforce needs.
- Building stronger connections between teaching sites and practical sites to strengthen clinical practice and ensure that messaging, procedures, and support is aligned across the health system. This linkage will reinforce students learning at each touch point through their education. Putting in place a system for preceptorship that is applied across nursing and midwifery schools will help ensure standardized quality clinical practice for students.
- Second staff from the MOH to rotate through the skills labs to provide much needed support to the students without continuing to overburden PSE tutors. Facility level providers can take weekly or monthly shifts at schools to supervise student practicing with models.
- Future investments should focus on improving knowledge and skills for nursing and midwifery teaching staff (tutors) and preceptors. For example, stakeholders should focus on equipping tutors with the latest clinical evidence, practice protocols, and practical skills from MOH, Christian Health Association of Ghana (GHAG), and NMC. This information helps ensure high-quality nursing and midwifery education nationwide.
- In addition, performance monitoring, oversight, and accountability should be strengthened for national level organizations responsible for this critical role. This help the schools to follow the required protocol in training health workers and adhering to nursing and midwifery training standards. This can be done by introducing digital platform for supportive supervision to schools for rapid data use for decision making in areas for improvement.
- Tutors should be trained to identify student leaders, who has been identified as a high achievers, to lead their classmates in practice on models in the skills labs to allow more time for practice with the models.
- The national accreditation board and NMC should enforce the cap on number of students per tutor to avoid burdens on tutors, skills lab and on student improvements in competency.

All of these measures will require political will, increased capacity, strong leadership, willingness to change and energy on behalf of the MOH, NMC and CHAG in collaboration with the GHS. Strengthening these institutions and the principals, teachers and preceptors that form the education experience for students will lay the foundation for the provision of quality care. The responsibility of providing universal health coverage in Ghana, and indeed worldwide, will primarily fall to nurses and midwives. As such, the most sustainable and strategic investments should be in ensuring their excellence for the immediate future and for years to come.

This brief is made possible by the generous support of the American people through the United States Agency for International Development (USAID) under the terms of the Cooperative Agreement AID-OAA-A-14-00028. The contents are the responsibility of the Maternal and Child Survival Program and do not necessarily reflect the views of USAID or the United States Government.