

MCHIP Ghana End-of-Project Report

October 1, 2009–June 30, 2014



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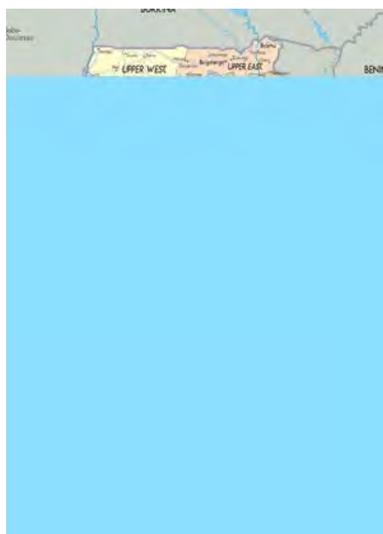
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The Maternal and Child Health Integrated Program (MCHIP) is the USAID Bureau for Global Health's flagship maternal, neonatal and child health (MNCH) program. MCHIP supports programming in maternal, newborn and child health, immunization, family planning, malaria, nutrition, and HIV/AIDS, and strongly encourages opportunities for integration. Cross-cutting technical areas include water, sanitation, hygiene, urban health and health systems strengthening.

This report was made possible by the generous support of the American people through the United States Agency for International Development (USAID), under the terms of the Leader with Associates Cooperative Agreement GHS-A-00-08-00002-00. The contents are the responsibility of the Maternal and Child Health Integrated Program (MCHIP) and do not necessarily reflect the views of USAID or the United States Government.

Country Summary: Ghana



Selected Health and Demographic Data for Ghana	
GDP per capita (USD)*	1,604
Total population*	25 million
Maternal mortality ratio (deaths/100,000 live births)**	450
Skilled birth attendant coverage**	68%
Antenatal care, 4+ visits**	87%
Neonatal mortality rate (deaths/1,000 live births) **	30
Infant mortality rate (deaths/1,000 live births)**	52
Under-five mortality (deaths per 1,000 live births)**	78
Children sleeping under ITN**	39%
HIV prevalence rate (15–49)****	1.4%
Total fertility rate**	4.0

Sources: *World Bank 2012; **UNICEF; ***2008 Demographic and Health Survey; ****UNAIDS; ^WHO.

Major Activities by Program

Pre-service education strengthening:

- Improved quality at 61 (100%) pre-service midwifery and community nursing schools
- Improved knowledge and competency for 154 tutors and preceptors in postpartum family planning and postabortion care (PAC), 162 tutors in family planning (FP), 183 tutors and preceptors in malaria, 190 tutors in HIV/AIDS, 66 tutors and 48 preceptors in basic emergency obstetric and newborn care (BEmONC); 83 tutors and preceptors in neonatal resuscitation using Helping Babies Breathe (HBB) curricula, and 132 tutors in nutrition
- Skills labs at 15 midwifery schools received basic package of education tools (models, CD-ROMs, training packages, resource manuals, etc.), seven skills labs received additional models and training materials, and six were fully equipped
- Innovative training (eLearning modules) and mentoring (mMentoring) methodologies implemented and tested

Program Dates	October 1, 2009–June 30, 2014			
Total Mission Funding to Date by Area	Total: \$5,407,300; HIV/AIDS: \$2,717,300; Malaria: \$1,265,000; Maternal and Child Health: \$775,000; Family Planning: \$450,000; Nutrition: \$200,000			
Geographic Coverage	No. (%) of regions	10 (100%)	No. of health education schools	61 (100%)
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Table of Contents

List of Tables and Figures.....	iv
Acronyms and Abbreviations	v
Acknowledgments	vi
Executive Summary.....	vii
Introduction.....	1
Major Accomplishments	2
Program Learning	6
Cross-Cutting Themes	9
Recommendations and Way Forward	10
Annex 1: Indicator Table and Achievement Year 6 (October 1, 2013–June 30, 2014) as of March 31, 2014	12
Annex 2: Success Stories.....	15
Annex 3: List of Materials and Tools Developed by MCHIP Ghana	18
Annex 4: Presentations at International Conferences and Publications	19

List of Tables and Figures

Table 1. Number of Tutors and Preceptors Who Participated In MCHIP Trainings and Technical Updates by Type of Training and Year	vii
Table 2: Targeted Schools and Number of Tutors at End of Project.....	2
Figure 1. PPFP and FP Integration into PAC Improvement in Aggregate Performance Standards Scores at 13 Targeted Schools during Baseline Assessment in 2009 and Follow-up Assessment in 2010.....	4
Figure 2. PPFP and FP Integration into PAC Improvement in Aggregate Performance Standards Scores at 6 Clinical Training Sites during Baseline Assessment in 2009 and Follow-up Assessment in 2010.....	4
Figure 3. Summary Assessment Results, 2010: Teaching Materials vs. Knowledge & Skills in HIV, Tuberculosis, Malaria and Family Planning	5
Figure 4. Maintenance of Knowledge and Competence after BEmONC Training of Tutors and Service Providers, February 2012 and 2013	5
Figure 5. Performance by Technical Area of Tutors Before and After Receiving Mobile Phone Based Mentoring.....	7

Acronyms and Abbreviations

ACNM	American College of Nurse Midwives
AMTSL	Active Management of Third Stage of Labor
BEmONC	Basic Emergency Obstetric and Newborn Care
CTS	Clinical Teaching Skills
FANTA	Food and Nutrition Technical Assistance
FP	Family Planning
GDP	Gross Domestic Product
GIFEC	Ghana Investment Fund for Electronic Communication
GHS	Ghana Health Service
HBB	Helping Babies Breathe
HRDD	Human Resources Development Directorate (GHS)
HRHD	Human Resources for Health Division (MOH)
ITN	Insecticide Treated Mosquito Net
LAN	Local Area Network
MCHIP	Maternal and Child Health Integrated Program
MCPC	Management of Complications in Pregnancy and Childbirth
MDG	Millennium Development Goals
MMR	Maternal Mortality Ratio
MNCH	Maternal, Newborn and Child Health
MOH	Ministry of Health
NACP	National AIDS Control Program
NMC	Nurses and Midwives Council
NMCP	National Malaria Control Program
OSCE	Objective Structured Clinical Examination
PAC	Postabortion Care
PLWA	People Living with HIV and AIDS
PPFP	Postpartum Family Planning
PSE	Pre-Service Education
SBM-R	Standards Based-Management and Recognition
TB	Tuberculosis
USAID	United States Agency for International Development

Acknowledgments

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MCHIP would like to acknowledge the close collaboration and partnership with the Human Resource for Health Development Unit (HRHD) of the Ministry of Health of Ghana, and the National Programs of the Ghana Health Services (GHS) throughout the course of this project. In particular we would like to acknowledge the support of Dr. Ebenezer Appiah-Denkyira, who during the life of the project served both as the Director for HRHD and the Director General of GHS.

MCHIP has benefited from the support and guidance of Dr. Felix Osei-Sarpong (USAID Public Health Specialist) and Kwame Ankobea (USAID Malaria Advisor).

MCHIP also appreciated a productive partnership with FANTA II/FHI 360 to implement nutrition interventions with health training institutions.

In eLearning, MCHIP leveraged the existing global partnership with Intel, WHO, UNFPA and Jhpiego to place a free eLearning platform and learning materials in six midwifery schools.

MCHIP would also like to recognize the staff of the following offices and organizations, who were central to the realization of this project:

- National Malaria Control Program, Ghana Health Service, Ghana
- National AIDS Control Program, Ghana Health Service, Ghana
- Nutrition Division of the Ghana Health Service, Ghana
- Nursing and Midwifery Council of Ghana
- The Principals and Tutors of the Health Training Institutions in Ghana



Tutors pose for a group photograph after participating in training with MCHIP.

Executive Summary

In order to meet Millennium Development Goals (MDGs) 4 and 5, the government of Ghana prioritized increasing the number of midwives to ensure that all births are attended by skilled providers. To meet this objective, the government opened 15 more midwifery schools between 2010 and 2014 to train more skilled providers. Student numbers also increased from as low as 50 students per school per year to as many as 250 students in some schools. Unfortunately, in some schools the required infrastructure and qualified tutors to support quality education for the increased number of students were not in place. For example, in one school the tutor-to-student ratio is 1:126. This shortage has contributed to poor performance by student midwives at licensure examinations.



The Ministry of Health is prioritizing training greater numbers of midwives.

Starting in 2010, MCHIP was invited by the U.S. Agency for International Development (USAID) to support the government of Ghana in enhancing quality improvement at all pre-service midwifery institutions. During the five years of implementation in Ghana, MCHIP, in close collaboration with the Human Resource for Health Development Unit (HRHD) of the Ministry of Health (MOH) of Ghana, and the National Programs of the Ghana Health Services (GHS), improved the quality of health education in 61 nursing and midwifery schools through the following initiatives: training tutors and preceptors in HIV, malaria, tuberculosis (TB), family planning (FP), basic emergency obstetric and neonatal care (BEmONC), neonatal resuscitation, and nutrition; and providing follow-up, on-site, and innovative mobile mentoring (mMentoring) to ensure retention of competencies.

Table 1. Number of Tutors and Preceptors Who Participated In MCHIP Trainings and Technical Updates by Type of Training and Year

TECHNICAL AREA	PROGRAM YEAR 2	PROGRAM YEAR 3	PROGRAM YEAR 4	PROGRAM YEAR 5	PROGRAM YEAR 6	TOTAL
	13 schools	13 schools	38 schools (6 target midwifery for BEmONC)	40 schools (6 target midwifery for BEmONC ¹)	61 schools (includes 21 general nursing schools)	
Postpartum Family planning (PPFP) and FP/Postabortion Care (PAC)	74	80				154
FP		80		82		162
Malaria		80		82	21	183
HIV/AIDS		80		82	28	190
BEmONC			24	42		66

¹ Ashanti-Mampong, Goaso, Jirapa, Pramso, Hohoe, and Twifo Praso.

TECHNICAL AREA	PROGRAM YEAR 2	PROGRAM YEAR 3	PROGRAM YEAR 4	PROGRAM YEAR 5	PROGRAM YEAR 6	TOTAL
Helping Babies Breathe (HBB)		20	63			83
Nutrition				132		132

As MCHIP's work in Ghana began to expand from introducing postpartum family planning (PPFP) at 13 schools in 2010 to covering six technical areas at 61 schools and related clinical training sites in 2014, MCHIP was obliged to find more efficient and effective ways to deliver traditional on-site training and coaching/mentoring visits. In collaboration with HRHD and GHS, MCHIP implemented and tested two new strategies, mMentoring and eLearning. Both of these promising strategies are important tools that MCHIP has left with the government of Ghana to support ongoing learning.

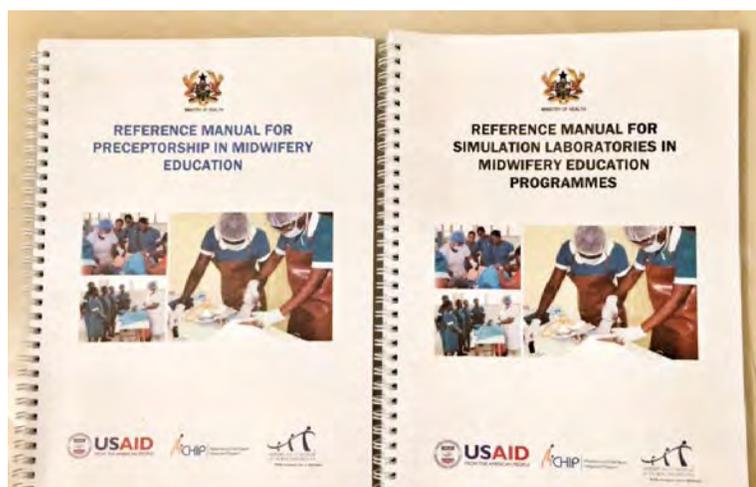
“The training in postpartum family planning has helped us a lot. We now know the right family planning information to give to our clients from antenatal care onwards. In my facility it has been established that family planning information is given to clients irrespective of where they are seen at the facility. It has been integrated in the services that we provide including the outpatient department where sick babies, children and adults are seen.”

-Constance Serwah Peprah, a midwife from Nsoatre Health Centre

Over the course of the project, MCHIP, with GHS and HRHD, has also played a key role in developing and updating a number of much-needed tools that will be used in all midwifery schools, including:

- Performance standards for teaching content in midwifery, public health, and community health nursing training schools in PPFPP, HIV, malaria, TB, FP, newborn resuscitation (HBB) and nutrition
- Development and publication of the *Reference Manual for Simulation Laboratories in Midwifery Education Programmes*
- Development and publication of the *Reference Manual for Preceptorship in Midwifery Education*
- Strategic inputs into the curriculum revision process of the Nursing and Midwives Council (NMC) of Ghana, ensuring that the technical updates implemented are sustained

Overall, the implementation of the MCHIP program progressed well as a result of strong collaboration with the Ghana Health Service and the HRHD unit of the MOH. Based on the lessons learned from the MCHIP activities as well as the Ghanaian priorities, midwifery education should continue to be a focus in order to ensure that the momentum and work that MCHIP, in collaboration with the MOH, has done to improve the teaching and technical competencies of tutors and preceptors in technical domains is maintained so that the number of quality midwives who graduate increases. These improvements include:



The Reference Manuals for Simulation Laboratories and Preceptorship were developed jointly with the MOH.

1. Strengthening skills labs (provision of needed resources) at new schools;
2. Supporting the integration and utilization of skills labs into teaching calendars and structure;
3. Increasing support to preceptors and clinical care sites to ensure standardization of practice;
4. Continuing to scale up eLearning to new schools and develop new content; and
5. Emphasizing effective teaching skills in addition to updated technical work with the MOH to scale up mMentoring, not only for use after clinical training, but also for supervision and support.

MCHIP leaves a legacy of competent tutors and preceptors, improved skills labs, and manuals that teach how to implement and manage skills labs and preceptorship programs. In addition, MCHIP has provided the necessary training materials to the GHS and HRHD at national level and to the 61 schools with which the program worked so that they can continue to implement quality pre-service education over the long term.



A tutor at Sekondi Midwifery School teaches a midwifery class

Introduction

In 2010, the Government of Ghana reviewed their progress towards meeting their targets for the Millennium Development Goals (MDG) and acknowledged that although the maternal mortality ratio (MMR) decreased from 740 per 100,000 live births in 1990 to 451 in 2008, Ghana was still not on track to reach its MDG 5 target of 185 by 2015. Further, the under-five mortality rate at 74 per 1000 live births² was far from their MDG 4 target of 29 per 1,000 live births.³

The government recognized that the lack of qualified human resources was a contributing factor to the lack of progress so they made a push to increase the number of midwives on the ground by opening additional midwifery schools. Midwives have important role to play in attending births to reduce maternal and newborn mortality. They can provide postpartum family planning counseling to reduce the 35 percent of unmet need for family planning,⁴ encourage breastfeeding to decrease the rate of malnourished children (5.3 percent of children under-five still suffer from severe wasting and 13.9 percent are stunted),⁵ reduce stigma and discrimination for the 1.9 percent of Ghanaians who are HIV positive,⁶ provide proper screening and prevention methods to prevent malaria in pregnancy and decrease the 9 percent of deaths among pregnant women attributed to malaria.⁷

From 2010 to 2014 the Government of Ghana more than doubled the number of midwifery schools from 13 to 28 midwifery schools and some schools experienced a five-fold increase in enrollment of students from 50 students per school to year to 250 students per school per year. Unfortunately, resources were not available to fully equip and staff these new schools. In one new school, there was one textbook for all of the students, and in another there was no equipment or models for teaching midwifery skills and competencies.

At USAID's invitation, MCHIP began work in Ghana in 2010 with a focus on introducing postpartum family planning (PPFP) into 13 midwifery schools and 6 clinical training sites. In recognition of the challenge of the quick scale-up in number of schools, MCHIP Ghana, in collaboration with the Ghana Health Service (GHS), and Human Resource for Health Development Unit (HRHD) of the Ministry of Health of Ghana and the Nursing and Midwifery Council (NMC), scaled up to include the additional midwifery schools. MCHIP was also asked to support the 32 community, general, and public health nursing schools, and the medical assistants' training school for a total of 61 schools. In addition, MCHIP was asked to broaden its scope from PPFP to include newborn resuscitation, HIV/AIDS, tuberculosis (TB), malaria, nutrition and basic emergency obstetric and newborn care (BEmONC).

² UNICEF statistics 2010.

³ UNICEF statistics 2010.

⁴ Ghana DHS 2008.

⁵ Millennium Development Goals Acceleration Framework Country Action Plan 2010: Ministry of Health , Government of Ghana and the United Nations Country Team p. 15.

⁶ UNGASS Report / UNAIDS 2010; Ghana DHS 2003.

⁷ From Global Fund Rd 8 submission: <http://portfolio.theglobalfund.org/Grant/Index/GHN-809-G07-M?lang=en>

Major Accomplishments

By the end of the project, MCHIP, in collaboration with the MOH/HRHD, and GHS specifically the National Malaria Control Programme, National AIDS Control Programme, National TB control Programme and the Family Health Division, had improved quality of education at 100% of all public midwifery and nursing schools that have an estimated enrollment of 15,450 students. Ultimately, a quality education with evidence-based education techniques will ensure that the students who graduate are highly competent to deal with all situations in the field.

Table 2. Targeted Schools and Number of Tutors at End of Project

TYPE OF SCHOOL	TOTAL NUMBER OF SCHOOLS IN 2014 (% OF TOTAL NUMBER OF SCHOOLS)	ESTIMATED NUMBER OF STUDENTS ENROLLED	NUMBER OF TUTORS IN EACH SCHOOL
Midwifery Schools	28 (100%)	3,500	56
Community Health Nursing School	10 (100%)	4,500	20
General Nursing Schools	21 (100%)	7,000	42
Public Health Nursing School	1 (100%)	50	2
Medical Assistants Training	1 (100%)	350	2
Total	61 (100%)	15,450	122

MCHIP, in collaboration with GHS and MOH/HRHD, improved the quality of education at 61 schools through the following activities:

- a. **Development/updating of technical tools** (see text box for sample list of materials and Annex 3 for fill list);
- b. **Improving teaching and mentoring skills:** MCHIP trained 100 tutors in effective teaching skills who then used these skills to prepare and give lessons to their students; trained fifty-eight preceptors on mentoring/coaching skills to enable them to effectively transfer knowledge and support students in the clinical environment; and with stakeholder participation, wrote, validated, and disseminated the *Reference Manual for Preceptorship in Midwifery Education* to each midwifery school in the country.

New and Updated Pre-service Education tools:

 - Skills Lab Reference Manual
 - Preceptorship Reference Manual
 - Training packages for PFP, HIV, malaria, TB, newborn resuscitation, and nutrition
 - FP checklists
 - Classroom performance standards
 - Clinical practice performance standards for: HIV, malaria, TB, FP, PFP, newborn resuscitation and nutrition
 - Strategic inputs into the curriculum revision process of the Nursing and Midwives Council (NMC) of Ghana ensuring that the technical updates implemented are sustained
- c. **Technical updates for tutors and preceptors:** MCHIP used didactic and hands-on learning approaches (e.g., role-plays, practicums, clinical site visits, etc.) to conduct technical updates and trainings to train: 154 tutors and preceptors in postpartum family planning and postabortion care (PAC), 162 tutors in FP, 183 tutors and preceptors in malaria, 190 tutors in HIV/AIDS, 66 tutors and 48 preceptors on BEmONC; 83 tutors and preceptors in neonatal resuscitation using Helping Babies Breathe (HBB) curricula and 132 tutors in nutrition.
- d. **Equipped skills labs at midwifery schools:** Six skills labs were completely refurbished (Jirapa, Goaso, Pramso, Mampong, Twifo Praso, and Hohoe); additional skills labs at 22 midwifery schools were provided with a minimum package of materials including

“Management of Complications in Pregnancy and Childbirth,”(MCPC) and “Active Management of Third Stage of Labor” (AMTSL) on CD-ROMs, WHO laminated partograph posters, and a significant number of training models. MCHIP also provided additional models and medical equipment to 7 of the 22 skills labs at Kete Krachie, Tumu, Nandom, Agogo, Asankragwa, Dunkwa and Koforidua . (See text box for types and numbers of models distributed).



Suturing skills were practiced using handmade sponge models that tutors can make to use with their students.

List of models provided to schools' skills labs:

- Fetus, umbilical cord and placenta (89)
- Implant arm (29)
- ZOE models (57)
- Uteri II (123)
- Cloth pelvis (40)
- Advanced childbirth simulator (37)
- Mama Natalie (87)
- Composite Pelvis and pelvic floor (75)
- Cervical Dilatation model (17)
- Condom model (73)
- Neo Natalie (including preceptor sites) (268)
- Breast model (30)
- (50)
- Fetal skulls (58)

In collaboration with stakeholders such as the HRHD, NMC, ANCM, UNFPA, ICM and principals of midwifery schools, MCHIP wrote, validated and disseminated *The Simulation Lab Manual* which is currently in use at all midwifery schools.

MCHIP planned to assess whether students' knowledge improved as a result of this intervention. However, this was not feasible given the difficulty of tracking the students to their final placements post-graduation and linking knowledge and competency to MCHIP's interventions. Therefore, to measure performance, MCHIP initially assessed compliance to performance standards for postpartum family planning. The pre- and post-evaluations show an improvement at both the 13 MCHIP intervention schools and the six clinical training sites.



Refurbished skills lab at Twifo Praso Midwifery School was commissioned during the matriculation and graduation ceremony on September 20, 2013 by the Deputy Minister of Health.

Figure 1. PFPF and FP Integration into PAC Improvement in Aggregate Performance Standards Scores at 13 Targeted Schools during Baseline Assessment in 2009 and Follow-up Assessment in 2010

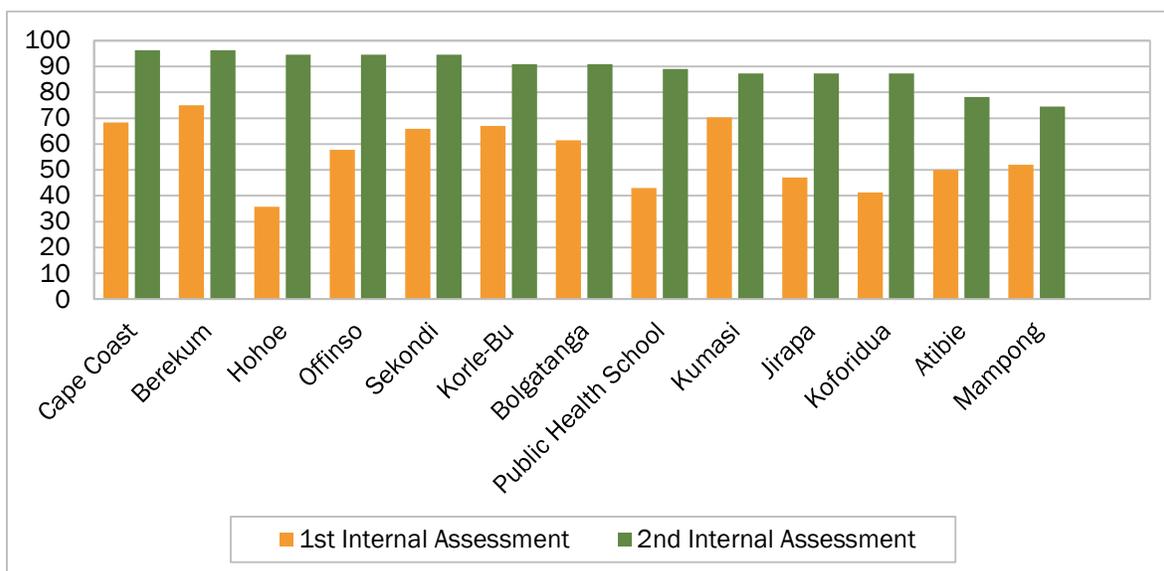
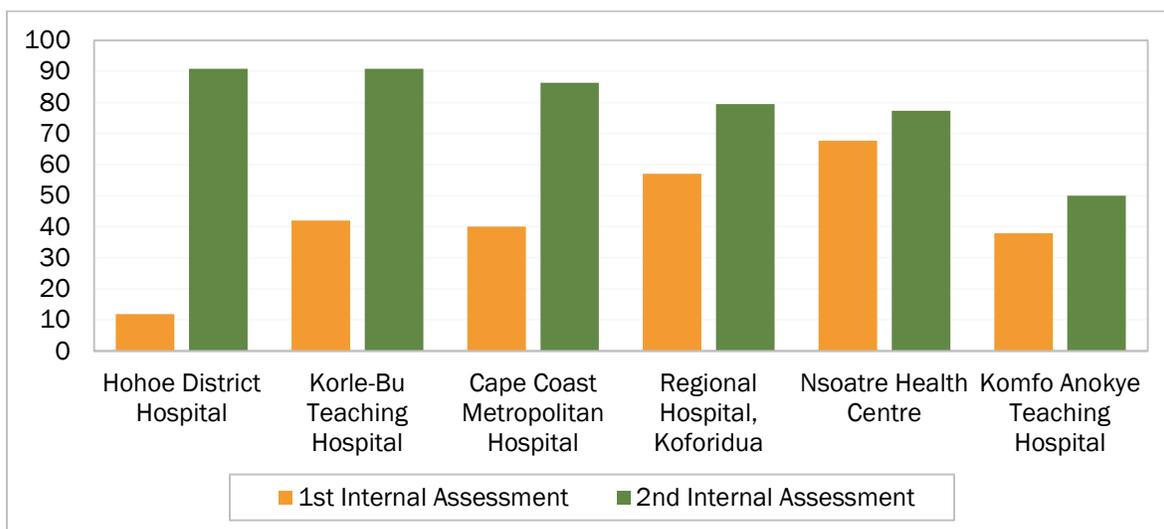
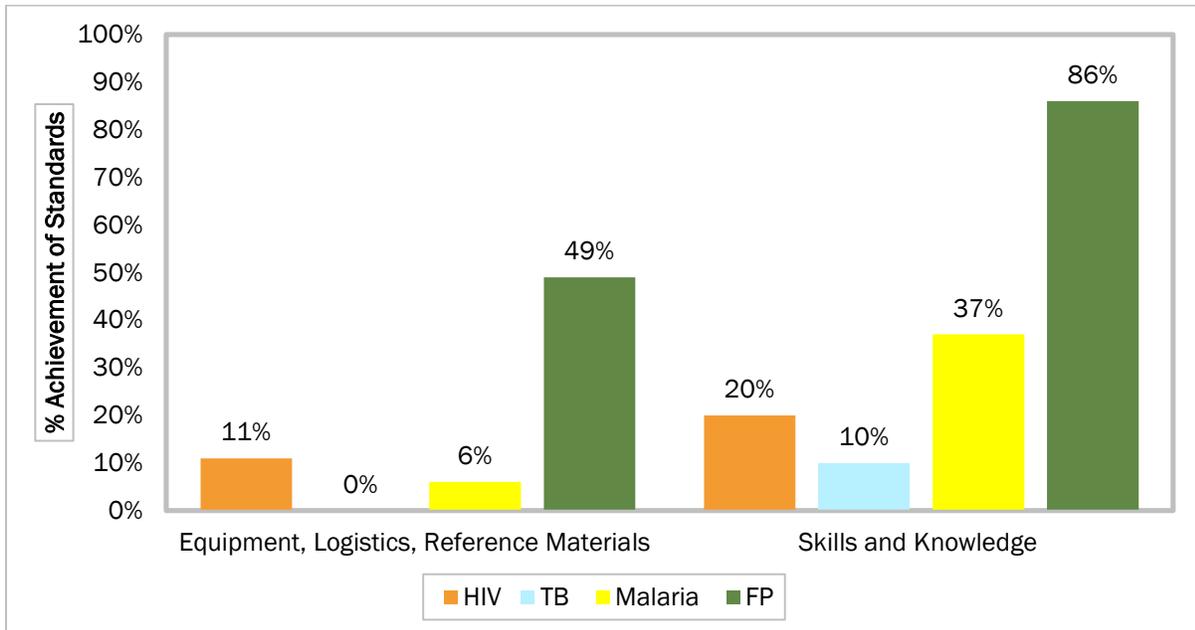


Figure 2. PFPF and FP Integration into PAC Improvement in Aggregate Performance Standards Scores at 6 Clinical Training Sites during Baseline Assessment in 2009 and Follow-up Assessment in 2010



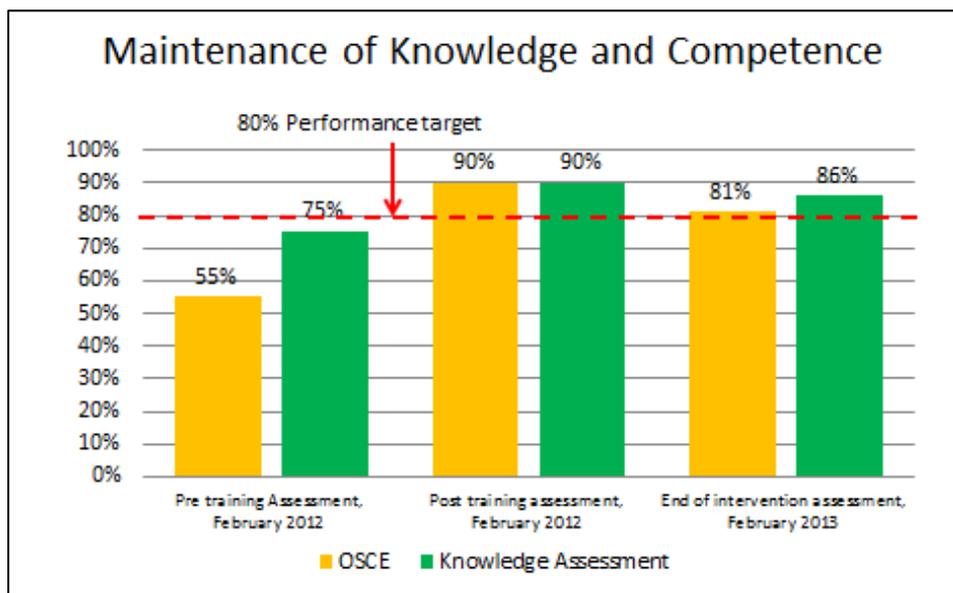
After the postpartum family planning intervention, MCHIP assessed the knowledge and skills and available teaching materials for family planning and additional technical areas of HIV, TB, malaria and family planning. The results as seen in Graph 3 below showed that the work MCHIP had done in family planning had yielded positive results. More than 86% of FP skills and knowledge were achieved – much higher than in other technical areas in which MCHIP was not working at the time. The percentage of materials for teaching family planning while still not adequate at 49% was much higher than in the other technical domains. The skills and knowledge for HIV, TB, and malaria were surprisingly low (20%, 10%, 37% respectively) and the availability of equipment, logistics and reference materials was negligible for HIV, TB, and malaria (11%, 0%, 6% respectively). This baseline assessment guided the MCHIP team on where to focus efforts during training and follow up.

Figure 3. Summary Assessment Results, 2010: Teaching Materials vs. Knowledge & Skills in HIV, Tuberculosis, Malaria and Family Planning



As MCHIP scaled up to 61 schools and more technical areas, it became logistically challenging to fully assess performance of each site. So, to measure competency, MCHIP used the Observed Clinical Structural Exams (OSCE) to measure competency and knowledge assessments pre- and post-training and during follow-up supervision/coaching visits. The results in Graph 4 show that while knowledge tended to be high (average scores of 75%), the average OSCE scores were actually quite low (55%). This gap is most likely due to the lack of opportunity for the tutors to practice their own skills. These pre-test results guided the MCHIP team on deciding where to focus trainings and follow-up coaching and mentoring visits. The immediate post-training knowledge and OSCE assessments and one-year follow-up show a large gain in knowledge and skills and fairly high retention rate.

Figure 4. Maintenance of Knowledge and Competence after BEmONC Training of Tutors and Service Providers, February 2012 and 2013

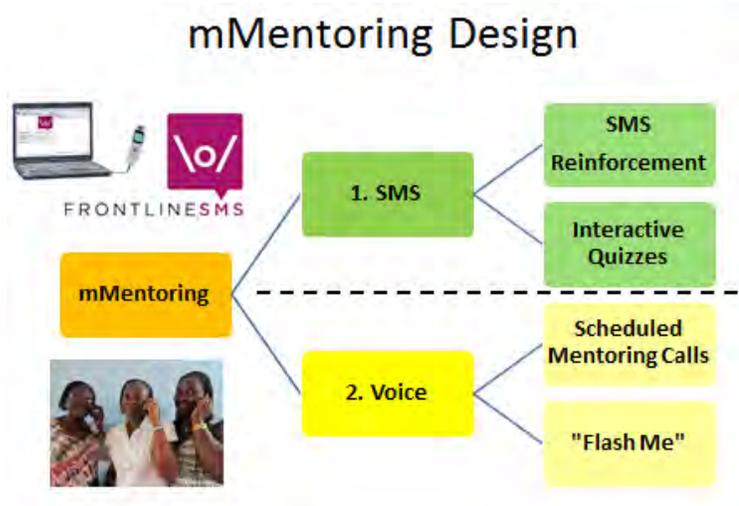


Program Learning

MCHIP Ghana had two main program learning components. The first was the mMentoring program and the second was the feasibility of implementing eLearning at midwifery schools.

mMentoring

The mMentoring program was initiated to reduce the cost and time involved with on-site follow-up supervision visits while ensuring high retention of skills and knowledge for 4 BEmONC topics (active management of third stage of labor [AMSTL], manual removal of placenta, newborn resuscitation and management of severe pre-eclampsia). MCHIP used a multi-modal mMentoring approach that included:



- SMS reminders sent out weekly on 4 themes for BEmONC
- SMS questions to tutors to gauge knowledge– tutors automatically get feedback on correct answer (responses were kept and reviewed)
- Regularly scheduled bi-weekly coaching sessions with a standardized script
- “Flash me” sessions for tutors to call MCHIP Advisors ad-hoc when they had questions

The first phase (three months) of the mMentoring program included sending SMS reminders, quizzes and structured calls from their mentors covering newborn resuscitation and manual removal of placenta.

The second and final phase of the mMentoring program was completed in February 2013, and focused on AMSTL and management of severe pre-eclampsia.

At the end of the study, MCHIP conducted knowledge assessments and OSCEs of 16 of 21 tutors⁸ to determine maintenance of knowledge and competencies post-intervention. MCHIP also conducted focus group discussion with participants to find out their views about mMentoring

The combined results showed that the average score for the knowledge assessment was 89%. The OSCE assessments showed the following average results: newborn care 89%, AMTSL 85%, manual removal of

mMentoring participants' responses to survey question, "Is there anything else you would recommend for mMentoring in the future?"

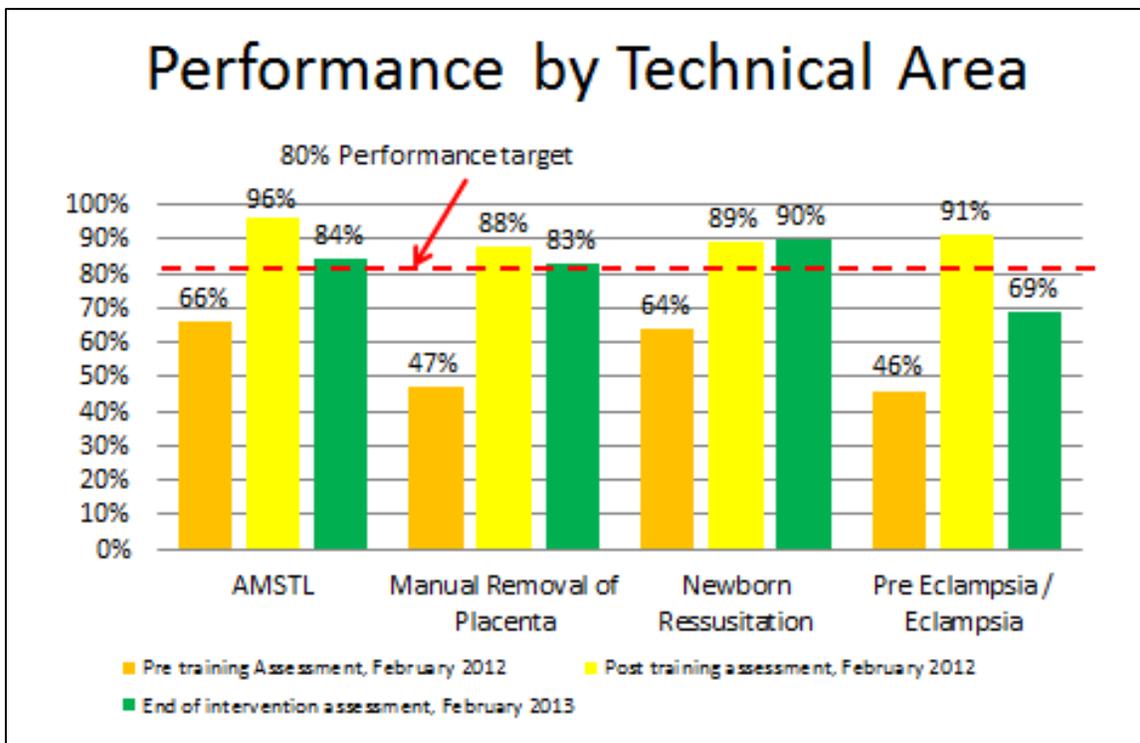
- “More tutors should be trained in it, mMentoring is very beneficial and so it should be continued and if possible extended to the hospitals I believe this will go a long way in reducing maternal and neonatal mortality.”
- “mMentoring quiz should continue. It's like a bell which reminds us about what we have learned and we are now teaching the right things to our students.”
- “The mMentoring has been very useful and I hope it will continue as the tutor is always kept on her toes.”
- “I think mMentoring should always continue because it helps us to refresh our mind when we are not ready to read from the books.”

⁸ Six participants could not be reached because some had travelled outside the country, were unwell, on maternity leave or had been transferred to another school.

placenta 85% and management of severe pre-eclampsia 68.5%. The results of the OSCE were higher for preceptors than tutors. This may be attributed to preceptors' constant practice of skills as they work in the clinical area. Tutors, however, teach skills in courses assigned semester-by-semester and would therefore not practice skills that are not part of what they teach during a semester.

Final data for mMentoring was disseminated to stakeholders. An abstract related to mMentoring was also accepted for presentation at the International Confederation of Midwives Conference in June 2014.

Figure 5. Performance by Technical Area of Tutors Before and After Receiving Mobile Phone Based Mentoring



eLearning

Implementing eLearning in midwifery education in Ghana is an exciting new initiative that MCHIP is proud to be supporting in collaboration with our longtime partner, the Human Resource for Health Development (HRHD) unit of the Ministry of Health (MOH). MCHIP and the Ghana government recognized the need for a creative solution to supporting students' learning. The MOH prioritized eLearning as an approach to standardize learning content and to increase opportunities for self-directed learning by students.



Tutors and technical experts work together to develop eLearning content for Malaria and HIV.

To generate experience on how to implement eLearning, MCHIP worked with HRHD to roll out eLearning in 6 midwifery schools using four existing modules for maternal health (eclampsia, postpartum hemorrhage, manual removal of placenta and newborn resuscitation) created by UNFPA and Jhpiego under a separate program.⁹ In addition, MCHIP also developed Ghana-specific eLearning modules for HIV/AIDS and malaria in collaboration with the National AIDS Control Program and the National Malaria Control Program. MCHIP conducted a pilot feasibility study to achieve the following objectives:

- Determine the feasibility (in terms of acceptability, usability, accessibility) of using eLearning in six midwifery schools in Ghana
- Understand the experience of tutors, students and information technology (IT) staff in implementing selected eLearning content as supplements to courses
- Identify priority areas for strengthening implementation of eLearning in midwifery education programs in Ghana
- Measure the timeliness of uptake at school-level (upload onto computers, use of modules) of newly released eLearning modules after dissemination from central-level

Implementation of the eLearning modules will be completed by June 30, 2014, but the final analysis of the information and write-up of this study is not expected to be finalized until August 31, 2014. The results will be disseminated and shared with USAID and MOH. Lessons learned from this pilot will provide needed information to scale-up to all midwifery schools.



In December 2012, MCHIP facilitated the development of a strategic plan to implement eLearning in Midwifery Education.

This initiative has represented many partnerships. Firstly, Ghana Investment Fund for Electronic Communications (GIFEC) established computer labs and internet access in almost all the training institutions. MOH, with Samsung, facilitated the purchase 7,500 laptops to be distributed to students in 2013 as part of a “buy-back” scheme. Finally, MCHIP and Intel are partnering to ensure that the eLearning platform (skool™) is operationalized.

⁹ Twifo Praso, Hohoe, Mampong, Pramso, Goaso and Jirapa Midwifery Schools

Cross-Cutting Themes

Scale-Up: MCHIP in Ghana scaled up from training tutors and preceptors from 13 schools in years one, two and three to training tutors and preceptors from 38 schools in year four, 40 schools in year 5 and 61 schools in year 6. MCHIP was able to train a larger and more diverse group of people ensuring that nursing and midwifery students across Ghana receive the best training possible.

mHealth: As the project scaled up from 13 to 61 schools, MCHIP on-site training and coaching/mentoring visits became more expensive and challenging. To address these issues, MCHIP Ghana began testing two new strategies, mMentoring and eLearning, to help the country bring technical updates to scale more efficiently and effectively.

Training: MCHIP Ghana trained 154 tutors and preceptors in PFP, FP and PAC, 162 in FP, 183 in Malaria, 190 in HIV/AIDS, 66 in BEmONC, 83 in Helping Babies Breathe and 132 in Nutrition. These tutors and preceptors will in turn ensure better training for the nursing and midwifery students in those 61 schools in Ghana. MCHIP also trained tutors and clinical preceptors in effective teaching skills to ensure that they are better able to impart their knowledge and skills on their students. Over the course of the MCHIP project, 100 tutors were trained in effective teaching skills. Finally, ensuring that skills labs are well equipped ensures that students will be well trained to become effective healthcare professionals.

Recommendations and Way Forward

Overall, the implementation of this program has progressed well due to the strong collaborations with Ghana Health Service and the HRHD unit of the Ministry of Health of Ghana. MCHIP will leave behind highly competent tutors and preceptors, improved skills labs, manuals teaching how to implement and manage skills labs and preceptorships. In addition, MCHIP has provided all training materials to GHS and HRHD at the national-level and to all the schools so they can continue to implement the programs long term.

The main challenges encountered were:

- Rapid increase in opening of schools put significant strain on the very limited human and material resources available for pre-service education and contributed to a decrease in the current quality of education with an insufficient ratio of tutors to students, limited textbooks and teaching materials. The clinical preceptor sites are also pressured due to increased number of students. MCHIP has tried to help address some of these gaps, but the sheer number of schools and geographic location made it difficult within the scope of this project. MCHIP has employed new technologies to support this expansion and reduce the need for on-site visits.
- eLearning: MOH/HRHD made technology and computers a priority and promised that each school would have internet connection and an IT support staff and all students would have access to computers via a buy-back program. However, the baseline IT assessment showed that not all these objectives had been achieved. The feasibility assessment will help MOH better understand what is needed to implement eLearning.



The poor ratio of tutors to students makes it difficult for an adequate emphasis on skills and competencies in pre-service education.

To handover the eLearning component, MCHIP trained MOH and HRHD staff on eLearning and provided the necessary eLearning implementation guides. Likewise, MCHIP's feasibility assessment shows the key steps undertaken and lessons learned to enable the GHS to continue to scale up eLearning to the remaining schools.

Based on lessons learned and Ghana priorities, midwifery education should continue to be a focus to ensure that the momentum and work that MCHIP and MOH/HRHD have done together to improve the teaching and technical competencies of the tutors and preceptors in technical domains is maintained. Specific recommendations include:



The integration and utilization of skills labs into teaching calendars and structure will be essential to support student's learning.

- **Improve skills labs:** All midwifery schools in Ghana need at least a minimum package of models and teaching materials as outlined in the *Standardized Skills Lab Reference Manual* produced by MCHIP. This is essential to provide students with the opportunity to gain competence before practicing on patients. The MOH requires support to roll out this standardized package to all schools.
- **Support the integration and utilization of skills labs into teaching calendars and structure:** Once all schools have the models and teaching equipment that they need, it is recommended that tutors are supported to develop an integrated teaching approach to incorporate practice into classroom learning. In addition, as the schools are so severely overcrowded, this requires particular thought to develop strategies to use smaller groups and peer supervision as there are insufficient tutors to manage practice sessions.
- **Increase support to preceptors and clinical sites:** As students learn new skills and become competent it is essential for them to practice in a clinical environment that reinforces what they have learned in the classroom. Using the *Preceptor Management Reference Manual* produced by MCHIP, this process needs to be strengthened to ensure that students receive adequate support and to ensure standardization of practice.
- **Scale-up eLearning:** Based on the positive response from the feasibility study, eLearning should be scaled up to all midwifery schools. In addition, additional methodologies such as smart phone-based learning needs to be explored and tested. This seems to be one of the most effective supportive approaches to provide standardized content to students and to enable self-study.
- **Update technical content work with MOH and NMC:** The Midwifery Procedure Manuals were last updated in early 2000 and these are in desperate need to be updated. The National Curriculum for Midwives has been updated twice already but these manuals used for teaching content and examinations remains out of date. This is causing problems in examinations for students as examiners sometimes use these manuals to set exam questions.
- **Scale up mMentoring for clinical training and supervision and support:** mMentoring was found to be highly appreciated and accepted in addition to enabling the maintenance of clinical competence in essential lifesaving skills. This very cost effective approach needs to be expanded to support supervision and management for both principals and tutors.



Effective Teaching Skills enables tutors to use diverse methods of learning with their students.

MCHIP leaves a legacy of competent tutors and preceptors, improved skills labs, and manuals that teach how to implement and manage skills labs and preceptorship programs. In addition, MCHIP has provided the necessary training materials to the MOH/HRHD and the NMC at national level and to the 61 schools with which the program worked so that they can continue to implement quality pre-service education over the long term.

Annex 1: Indicator Table and Achievement Year 6 (October 1, 2013–June 30, 2014) as of March 31, 2014

MCHIP Ghana: *Strengthening HIV/AIDS, Malaria in Midwifery, Public and Community Health Nursing Schools and strengthening Basic Emergency Obstetric and Neonatal Care (BEmONC) in six targeted midwifery schools*

OBJECTIVES & INDICATORS	DATA SOURCE	FREQUENCY	TARGET (1 OCTOBER 2013 – 30 JUNE 2014)	JANUARY-MARCH 2014	CUMULATIVE ACHIEVEMENT (1 OCTOBER 2013 – 31 MARCH 2014)	STATUS AND COMMENTS
Objective 1: <i>eLearning in midwifery pre-service education is piloted and implemented in six midwifery schools¹⁰ with Jhpiego/UNFPA developed BEmONC modules and locally developed content in malaria and HIV</i>						
Number of eLearning modules developed for HIV and malaria. Jhpiego and UNFPA developed BEmONC modules	Project report	Quarterly	2	1 module for HIV and 1 module for malaria	2	HIV and malaria modules have been finalized and have been uploaded for tutors and students in the six targeted midwifery schools
Number of schools that successfully piloted and implemented eLearning content	Project report	Quarterly	6	6	6	Piloting of modules are in progress in the 6 targeted schools
Number of tutors and students who completed an eLearning module on both HIV and malaria	Project report	Quarterly	20 tutors,	0	0	Tutors and students are still going through the modules and this will be evaluated in May 2014
			400 students	0	0	

OBJECTIVES & INDICATORS	DATA SOURCE	FREQUENCY	TARGET (1 OCTOBER 2013 – 30 JUNE 2014)	JANUARY-MARCH 2014	CUMULATIVE ACHIEVEMENT (1 OCTOBER 2013 – 31 MARCH 2014)	STATUS AND COMMENTS
Objective 2: 61 health training institutions (28 midwifery schools, 10 community nursing schools, 21 general nursing schools, 1 public health school and 1 medical assistants training program) have 122 tutors with updated knowledge and skills in malaria						
Number of tutors who have updated knowledge and skills in malaria	Project report	Quarterly	120	75	109	34 were trained by 31 December 2013 and an additional 75 were trained by 31 March 2014
Number of tutors who participated in mMentoring	Project report	Quarterly	42 (tutors from 21 General Nursing schools)	34	34	34 tutors are still participating in the mMentoring process
Number of curricula updated	Project report	Quarterly	4	0	0	Curricula reviews are planned in May 2014 (Q3)
Objective 3: Increase competency of tutors and their students in 38 Health Training Institutions (10 Community Health Nursing, 1 Public Health Nursing, 1 Medical Assistant Training School and 26 Midwifery Schools) in current best practices for addressing stigma and discrimination in HIV/AIDS teaching and learning with special emphasis on addressing HCW stigma for most- at -risk populations (MARP)						
Number of tutors who have updated knowledge and skills in HIV stigma and discrimination	Project report	Quarterly	100	58	86	28 tutors were trained by December 2013 and an additional 58 were also trained by 31 March 2014
No of schools that received teaching and learning materials for HIV stigma and discrimination	Project report	Quarterly	38	38	38	Electronic copies of training materials given to the schools
Objective 4: Ensure six targeted midwifery schools continue to provide quality BEmONC and nutrition education						
Number of tutors who are competent in BEmONC	OSCE results	Quarterly	12	0	0	Follow up visits will be conducted in May
Number of tutors who are competent in nutrition	OSCE results	Quarterly	12	0	0	Follow up visits will be conducted in May

OBJECTIVES & INDICATORS	DATA SOURCE	FREQUENCY	TARGET (1 OCTOBER 2013 – 30 JUNE 2014)	JANUARY-MARCH 2014	CUMULATIVE ACHIEVEMENT (1 OCTOBER 2013 – 31 MARCH 2014)	STATUS AND COMMENTS
Number of skills labs that are well maintained and managed	Project report	Quarterly	6	6	6	Six skills labs were fully refurbished and are fully functional Seven additional skills labs will receive additional models (Zoe, fetal skulls, NeoNatalies, MamaNatalies, implant arms, condom models)

Annex 2: Success Stories

SKAMGOA – LOW COST AND INNOVATIVE APPROACH TO NEWBORN RESUSCITATION

As the international community refocuses its attention on further reducing child mortality through initiatives such as “A Promise Renewed”, there is much to learn from Ghana. Over the past twenty years, Ghana has almost halved its under-five child mortality rate (from 120 to 78 per 1,000 live births).¹¹ Yet the country is unlikely to meet the 2015 MDG 4 target for child mortality (40 per 1,000 live births), due largely to stagnation in the newborn mortality rate. The major causes of newborn mortality in Ghana are asphyxia (27%), sepsis (29%) and pre-term birth (29%).¹²

Ghana is addressing this by combining local innovation and drive with donor support, technical assistance, and private partnerships. One of the best examples of this is the invention of the SKAMGOA – a locally developed, low-cost and effective ambulatory (ambu) bag that skilled clinicians use to resuscitate newborns in the critical first minute of life, “the Golden Minute” – a key concept of the internationally recognized Helping Babies Breath (HBB) program.

A little more than a decade ago six reproductive health champions (doctors and midwives) from the Safe Motherhood team of the Ghana Health Service’s Family Health Division were conducting field visits in the northern part of Ghana and saw that many service delivery sites did not haveambu bags. In fact, more than 35 percent of health clinics still do not have these life saving devices. Unable to accept the status quo, this enterprising group designed the SKAMGOA (representing the first initials of the team members),¹³ a short-term solution to an equipment and supply chain gap. They fashioned the bag from a water bottle, foam and formica glue for around \$2 (US), a short term solution until facilities are able to obtain ambu bags.

The story could have ended there, with only several centers and clinicians having access to this low-cost, low-technology tool, but with funding from USAID, MCHIP was able to highlight this innovation as a low cost interim alternative to the ambu bag through a series of projects. Specifically, tutors, students and clinicians learned how to make and use the SKAMGOA through: the Training in Reproductive Health (TRH III) project (1998 - 2004) which focused on 11 midwifery schools; the MNH Performance and Quality Improvement Project (2001 – 2003), which focused on clinicians at 26 health facilities including district hospitals; and most recently, the Maternal and Child Health Integrated Program (MCHIP) (2010-present), which targeted 58 preceptors, 14 tutors and approximately 1,000 students at six midwifery schools.



Figure 1: Low-tech, low cost SKAMGOA (ambulatory bag).

¹¹ Countdown to 2015: Maternal Newborn and Child Survival. 2012 Ghana Country Profile

¹² Welaga P, Moyer CA, et al. 2013. Why Are Babies Dying in the First Month after Birth? A 7-Year Study of Neonatal Mortality in Northern Ghana. *PLoS One* 8(3). <http://www.ncbi.nlm.nih.gov/pubmed/23527050>

¹³ Dr. Sylvia Deganus, an ob-gyn at Tema General Hospital; Kate Agyei-Sakyi – a principal of the Koforidua Midwifery School; Dr. Patrick Aboagye, then the Ghana Health Service Deputy Director of Family Health; Gladys Kankam – a principal of the Midwifery training School at Korle Bu; Mary Dampson, a principal of the Public Health Nurses Training School; and Dr. Henrietta Odoi-Agyarko, then the Director of the Ghana Health Service Family Health Division.

With support from USAID, MCHIP gave current and future providers the ability to resuscitate a newborn even if they found themselves in poorly equipped sites. Additionally the tutors retain the knowledge of how to make and use the SKAMGOA and they will use their knowledge to train the next generation of midwives and nurses. “Knowledge alone cannot save a newborn’s life but knowledge in action can,” says Martha Serwah Appiagyei, USAID/MCHIP Sr. Technical Advisor.



Figure 2: Ms. Appiagyei demonstrating use of ambu bag on NeoNatalie model.

This intervention has been spread even further through a community health project known as STAR-CHPS (Supportive Technical Assistance to Revitalize Community Health Planning and Services), a public private partnership funded by a consortium of oil companies and implemented by Jhpiego and the Ghana Health Service. The community level primary health facilities in Ghana, known as CHPS zones, do not have ambu bags so Jhpiego highlighted the SKAMGOA and incorporated it and the lessons of MCHIP into the HBB training of 191 community health officers (CHO) at CHPS zones in six districts in the Western Region. In cases of emergency delivery or when a woman has already delivered at home, and there is no time for referral, these trained CHOs are still able to help a baby breathe.

Most recently Jhpiego has been funded by the Bill & Melinda Gates Foundation to test a model of low-dose, high frequency, on-site training approach using a variation of HBB – including the SKAMGOA. This will be conducted at 11 sites in year 1 and scaled up to 110 sites over three years, yet another example of how the SKAMGOA will continue to be taught and expanded throughout the country.

While there is still a long procurement process to buy the real ambu bags since they are not on the Ghana Health Services essential procurement list -- as noted most recently at the “Ghana Health Services Newborn Bottleneck Workshop” held at Swedro in October, 2013 -- there is hope that the new emphasis on reducing newborn mortality will encourage the GHS to put ambu bags on the list. In the meantime, Jhpiego will continue to support the SKAMGOA as a viable option and a lifesaving tool that is important to have at hand for the estimated 770,000 babies born nationally every year.¹⁴ Based on Ghana’s newborn mortality rate, 21, 560 can be expected to die,¹⁵ with asphyxia being the major cause of 27% of these deaths.

When donors and technical agencies support and expand the ingenuity and enterprising spirit of local innovations, lives can be saved; it happened in Ghana with a simple water bottle, some foam and formica glue.

¹⁴ United Nations Children’s Fund, State of the World’s Children 2012: Children in an Urban World, 2012

¹⁵ 28 per 1,000 live births. Countdown to 2015: Maternal Newborn and Child Survival. 2012 Ghana Country Profile.

PUBLIC/PRIVATE PARTNERSHIP PROVIDING A STRONG START FOR ELEARNING FOR MIDWIFERY SCHOOLS

Implementing eLearning in midwifery education in Ghana is an exciting new initiative that MCHIP is proud to be supporting in collaboration with our longtime partner, the Human Resource for Health Development (HRHD) unit of the Ministry of Health (MOH). In order to meet the MDG 4 & 5, the Government of Ghana has prioritized increasing the number of midwives to ensure that all births are attended by skilled providers. In order to meet this goal more midwifery schools were needed to train more skilled providers. Hence, the numbers of schools increased dramatically from 11 schools in 2010 to 28 schools in 2013. Student numbers also increased from as low as 50 students per school per year to as many as 250 students in some schools. Unfortunately, in some schools the required infrastructure and qualified tutors to support quality education for the increased number of students is not in place. For example, in one school the tutor to student ratio is 1:126. This has contributed to poor performance by student midwives at licensure examinations. MCHIP and the Ghana government recognized the need for a creative solution to supporting students' learning. The MOH prioritized eLearning as an approach to standardize learning content and to increase opportunities for self-directed learning by students.



Tutors and technical experts work together to develop eLearning content for Malaria and HIV.

To generate experience on how to implement eLearning, MCHIP is working with HRHD to roll out eLearning in 6 midwifery schools using four existing modules for maternal health created by Jhpiego and UNFPA (eclampsia, postpartum hemorrhage, manual removal of placenta and newborn resuscitation).¹⁶ In addition, MCHIP is also developing Ghana specific eLearning modules for HIV/AIDS and malaria in collaboration with the National Malaria Control Programme and the National AIDS Control Programme. Lessons learned from this pilot will provide needed information to scale-up to all midwifery schools.

To date, MCHIP has conducted an eLearning readiness needs assessment in the six selected pilot schools. The assessment found that all the 6 training institutions have space allocated for computer laboratory with most fully operational. MCHIP also trained five MOH IT staff to provide technical assistance to the ICT tutors in the training institutions and manage eLearning at the national level. The trained IT staff also successfully trained six ICT tutors from the six targeted pilot schools where eLearning.

This initiative has represented many partnerships. Firstly, Ghana Investment Fund for Electronic Communications (GIFEC) has established computer labs and internet access in almost all the training institutions. MOH, with Samsung, facilitated the purchase 7,500 laptops to be distributed to students in 2013 as part of a “buy-back” scheme. Finally, MCHIP and Intel are partnering to ensure that an eLearning platform (skool) is operationalized from national to school level.

¹⁶ Twifo Praso, Hohoe, Mampong, Pramso, Goaso and Jirapa Midwifery Schools

Annex 3: List of Materials and Tools Developed by MCHIP Ghana

- PFP Performance Standards for Midwifery, Public and Community Health Nursing Training Schools
- Performance Standards for Classroom Presentation and Preparation for Teaching and clinical teaching
- HIV, Malaria, TB,FP, Newborn Resuscitation (Helping Babies Breathe, HBB) and Nutrition performance standards:
 - HIV/AIDS Performance Standards for Midwifery, Public and Community Health Nursing Training Schools
 - Tuberculosis Performance Standards for Teaching content in Midwifery, Public and Community Health Nursing Training Schools
 - Malaria Performance Standards for Teaching content in Midwifery, Public and Community Health Nursing Training Schools
 - Family Planning Performance Standards for Teaching content in Midwifery, Public and Community Health Nursing Training Schools
 - Nutrition Performance Standards for Teaching content in Midwifery, Public and Community Health Nursing Training Schools
 - Helping Babies Breathe Checklist
- Reference Manual for Simulation Laboratories in Midwifery Education Programs
- Reference Manual for Preceptorship in Midwifery Education
- Strategic inputs into the curriculum revision process of the Nursing and Midwives Council (NMC) of Ghana ensuring that the technical updates implemented are sustained:
 - Registered Midwifery Curriculum
 - Registered General Nursing Curriculum
 - Registered Community Health Nursing Curriculum
 - Registered Mental Health Nursing Curriculum
 - Community Health Nursing Curriculum

Annex 4: Presentations at International Conferences and Publications

- “Evaluation of Mobile Phone-based Mentoring to Support Post-Training Retention and Performance in Midwifery Tutors/Preceptors in Ghana” was accepted for oral presentation at International Confederation of Midwives Conference in June 2014.

