Preservice Education of Community Health Extension Workers, Nurses, and Midwives in Nigeria: Findings and Recommendations from a Rapid Scoping Assessment

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EXECUTIVE SUMMARY

The purpose of the Rapid Scoping Assessment was to identify specific training institutions with which Capacity*Plus* may work, as well as to identify specific barriers to scaling up preservice nursing, community health, and midwifery education amenable to support by Capacity*Plus*. The intent of the assessment was to find areas where support by Capacity*Plus* may assist Nigerian training institutions in their efforts to maximize the number of newly trained health workers produced between August 2012 and October 2013.

Between the 18th of September and 3rd of December 2012, we assessed nineteen institutions training targeted health cadres using a modified version of the Capacity*Plus* Bottlenecks and Best Buys approach. An assessment team interviewed groups of stakeholders including administrative staff, faculty members, and, where possible, students using a semistructured interview guide. Also where possible, the team toured institutional facilities to observe infrastructural issues as noted by the interviewees. In one case (the School of Post-basic Midwifery, Lagos University Teaching Hospital), the team completed a single interview with the school's principal, and the expected tour was impossible due to an ongoing strike on the part of institutional staff.

Institutions visited by the assessment team included nine schools producing community health extension workers (CHEWs) and/or community health officers (CHOs) (denoted "schools/colleges of health technology") and seven schools producing midwives, either as a primary designation ("schools of basic midwifery") or as a follow-on certification for qualified nurses ("schools of post-basic midwifery"). In addition, the team visited two schools of nursing and one university teaching hospital hosting both a school of post-basic midwifery and a college of health technology.

The assessment findings indicate that the selection of candidates to be trained as midwives, CHOs, and CHEWs in Nigeria is constrained by three main factors: student enrollment limits, perceived high cost of education and low potential future remuneration, and the limitations of prospective students' secondary schooling. Basic infrastructure difficulties noted included insufficiency of hostels; lack of classroom space and/or classroom unsuitability due to structural and equipment deficiencies; and insufficient office space for faculty. Teams noted leaking roofs, insufficient ability to maintain electricity, insufficient basic science laboratories, and unreliable sanitary facilities in some schools. Schools also lack some basic equipment and textbooks needed for learners to practice and understand the requisite skills. The assessment noted textbook shortages in all schools visited. In every school visited, faculty and administrators lamented their lack of training and lack of both resources and time to complete continuing education.

Students who do not complete their studies tend to drop out for one of two reasons: either they are dismissed during a routine "weeding" process or they are financially unable to continue their studies. Students who choose to discontinue their studies often have personal, professional,

marital, or family difficulties with financial ramifications. Yearly, just over half of the graduates presented to sit national qualifying examinations in the community health worker disciplines pass them on the first attempt. Slightly more than two-thirds of those who take midwifery examinations do so. Noted challenges for students taking national examinations were academic in nature. Students are unprepared for the examinations, especially for practical skill demonstrations.

The assessment team recommended the following possible activities for Capacity*Plus* support to schools of midwifery and health technology.

1. Provide train-the-trainer courses in areas requested by faculty.
2. Provide opportunities for networking among facilities as well as with other stakeholders. Allow administrators to discuss common issues and needs and share "good practices" between and among supported schools.
3. Provide teaching aids, books, and equipment. Provide training (train-the-trainer courses) where applicable for use of demonstration models.
4. Provide scholarships and bursaries targeted to students in the final year of their studies.
5. Provide incentives for students to return for maximum allowable training periods (usually six months) to their training institutions.
6. Provide tutoring based upon students' individual difficulties as evidenced by examination results.

OBJECTIVES OF ASSESSMENT

The overall goal of the Capacity*Plus* Nigeria program of support is to increase the availability of health workers to meet the priority health needs of underserved populations through sustainable and scalable human resources for health (HRH) interventions. Implementation targets both federal and state levels through active engagement with a wide range of agencies, including federal and state ministries of health, the National Primary Health Care Development Agency, training institutions, and regulatory councils.

Beginning in August 2012, the project has supported increasing the number of new health workers produced in Nigeria—in particular, the preservice education and qualification of midwives, community health officers (CHOs), and community health extension workers (CHEWs)—accelerating Nigeria's contribution toward reaching health worker targets outlined by the President's Emergency Plan for AIDS Relief (PEPFAR). We are supporting the production of newly-trained health professionals by providing health professional schools with sufficient training resources. Capacity*Plus* activities also focus on the mentoring and learning support mechanisms needed to improve the overall learning environment; reduce student drop-out rates; increase the percentage and numbers of new graduates successfully completing their training and professional examinations in training institutions where there are persistent and significant drop-out and examination failure rates; and ensuring that faculty are adequately available, enabled, and trained.

The purpose of the Rapid Scoping Assessment was to identify specific training institutions with which Capacity*Plus* may work, as well as to identify specific barriers to scaling up preservice nursing, community health, and midwifery education amenable to support by Capacity*Plus*. The intent of the assessment was to find areas where support by Capacity*Plus* may assist Nigerian training institutions in their efforts to maximize the number of newly trained health workers produced between August 2012 and October 2013.

METHODS

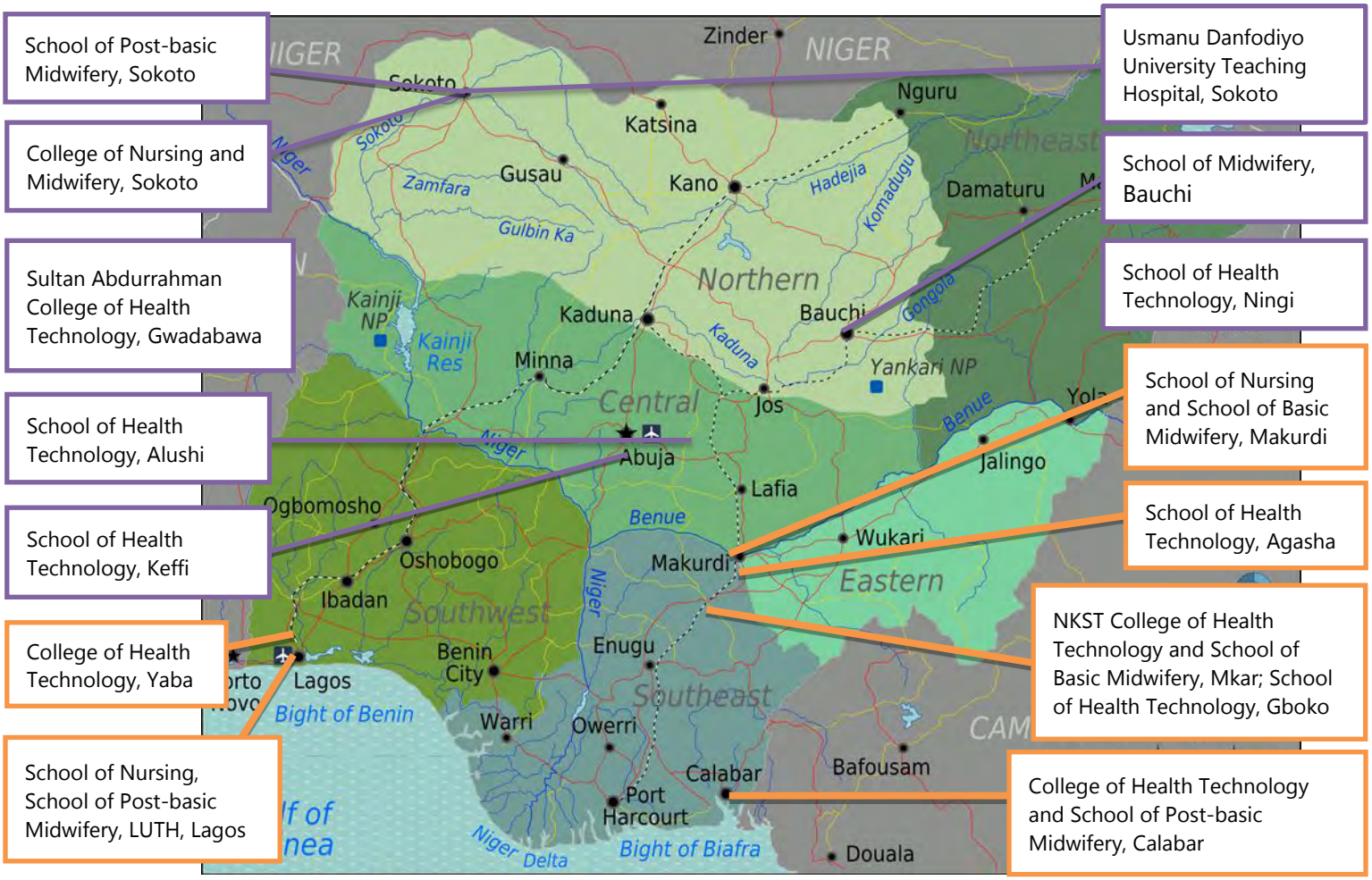
Over the course of ten days between the 18th and 28th of September 2012, the assessment team visited nine institutions training targeted health cadres. This team consisted of one full-time staff member and one consultant of Capacity*Plus*, a staff member of the Nigerian Federal Ministry of Health, and in most cases a staff member of the State Ministry of Health responsible for the institution in question.

The RSA team utilized a version of Capacity*Plus*'s Bottlenecks and Best Buys assessment methodology, modified to accommodate an extremely rapid timeframe (one to two schools in a single day). At each site visit, the team interviewed groups of stakeholders including administrative staff, faculty members, and, where possible, students using a semistructured interview guide (see Appendices 1–3). Also where possible, the team toured institutional facilities to observe infrastructural issues as noted by the interviewees. In one case (the School of Post-basic Midwifery, Lagos University Teaching Hospital or LUTH), the team completed a single

interview with the school's principal, and the expected tour was impossible due to an ongoing strike on the part of institutional staff.

The nine institutions visited by the full team included five schools producing CHEWs and/or CHOs (denoted "schools/colleges of health technology") and four schools producing midwives, either as a primary designation ("schools of basic midwifery") or as a follow-on certification for qualified nurses ("schools of post-basic midwifery"). In addition, the full team visited two schools of nursing. A team that did not include the full-time Capacity*Plus* staff member visited two schools of health technology from October 4–5, 2012. A further three schools of midwifery, two schools of health technology, and one university teaching hospital hosting both a school of post-basic midwifery and a CHO training program were visited between November 25 and December 3, 2012 by a single consultant; these schools were in areas where security concerns made visits by a full team impossible. In all, 19 institutions received a site visit, shown on the map below (Figure 1); those visited by the entire team are marked in orange and those with an abridged team in purple.

Figure 1: Site Visit Locations

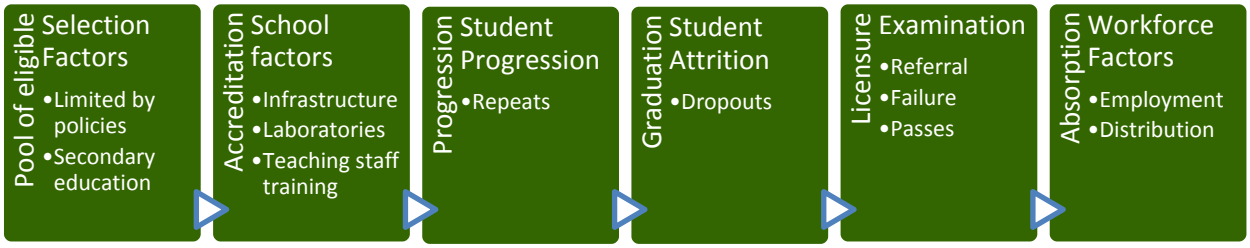


Those institutions denoted by the nomenclature "College" rather than "School" have several advantages. These include increased autonomy, priority treatment from the government, and higher prestige for both students and faculty. Several of the institutions visited are working toward gaining this appellation. In four cases, we included more than one school within a larger educational entity (LUTH, Lagos; Makurdi; University of Calabar; Usmanu Danfodiyo University Teaching Hospital [UDUTH], Sokoto). We found that the schools may present with different challenges and needs, making it beneficial to treat them as separate entities.

OBSERVATIONS

The production of new health workers, including midwives and CHEWs, is often pictured as a "pipeline," beginning with a given country's trainable employment-age population and continuing through preservice education and on to their eventual absorption into their country's health workforce or to any one of several less desirable endpoints. Figure 2 summarizes Nigeria's pipeline for the production of the targeted cadres, with context-specific issues highlighted. We provide detailed explanations of the site visit team's observations in the following sections.

Figure 1: The Pipeline of Preservice Midwife and CHEW Production in Nigeria



Selection Factors

The selection of candidates to be trained as midwives, CHOs, and CHEWs in Nigeria is constrained by three main factors:

1. The limitations of prospective students' secondary schooling
2. Intentional student enrollment limits set by regulatory bodies
3. Secondary school graduates' perceptions of inability to afford the long training and expected low remuneration inherent in becoming health workers.

The first factor was especially salient to interview respondents, who noted that the pool of eligible candidates for midwifery and community health worker education in Nigeria is restricted by what they termed "unreliable" secondary schooling, compounded by sometimes intentionally misleading secondary school qualifications. Administration and faculty members at many of the schools visited noted that a substantial portion of students provisionally accepted into their institutions lack the basic science, language, and mathematics understanding necessary to succeed in midwifery or CHEW training programs. This lack of preparation is often despite the students possessing certificates of relevant secondary schooling, an issue the interviewees

attributed to either mismanagement of certain secondary school records or to fraud on the part of some secondary schools or the prospective students themselves. The problem of students being unprepared for their courses of study is so widespread that more than half of the schools visited "provisionally" accept far more students to their programs than are ever officially enrolled. The schools then subject the students to several months of what is commonly termed "weeding," consisting of a series of courses and examinations intentionally designed to eliminate students with subpar preparation. In schools utilizing this weeding system, up to 50% more students are accepted into first-year programs than are eventually registered as students (range: 13% to 50%, mean: 37%). Use of such weeding mechanisms has the negative effects, as noted by several respondents, of requiring faculty members to devote significant time (and schools to devote significant resources) to students who will never become health workers.

Both the Community Health Practitioners Board and the Nursing and Midwifery Council of Nigeria (NMCN) limit the intake of students by training institutions. Nigerian schools of health technology are required to limit their intake of CHEW trainees to 50 and junior CHEW trainees to 75 per year. Schools of basic midwifery may admit 50 students, and post-basic midwifery schools may enroll 25 per year. Reasons given by interviewees as to why schools must narrow their intakes were twofold. First, according to the regulatory bodies, larger class sizes have a negative effect upon the quality of school graduates. Second (and more importantly in the opinion of most interviewed persons), low absorption of graduates into Nigeria's higher-paying public health workforce has allowed private employers to drive down health workers' wages, especially those of nurses and midwives. Moreover, some perceive that the rarity of graduates will increase their prestige, whereas graduating many students may lead to a loss of that prestige. Thus, schools restrict class sizes both to allow training institutions to improve individual students' performance, and to decrease the supply of these cadres in an effort to decrease health worker unemployment, increase the workers' perceived importance, and encourage private employers to increase workers' salaries.

Schools that enroll numbers of students above their allotment—for instance, due to weeding—risk loss of their accreditation. We discuss other reasons for potential loss of accreditation in "School Factors" below.

"The facility enhancement is the peak of our needs—we are on the verge of losing our status and accreditation because of the facilities. If we can give the NMCN a hint that there is a way we can improve, we will not lose our accreditation."

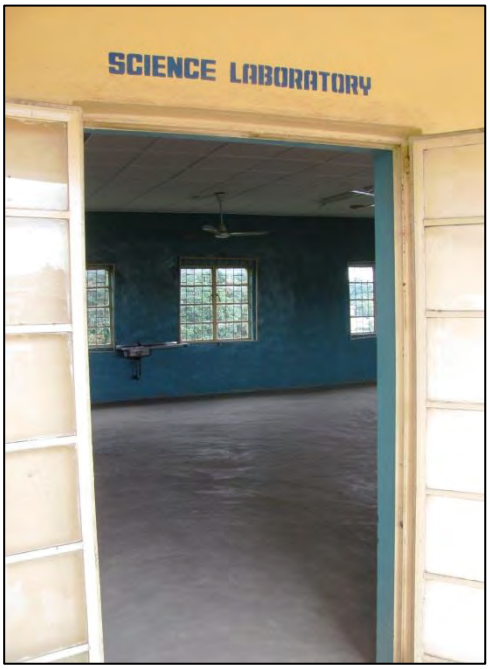
School Factors

Interviewees were specifically concerned about four main factors affecting the accreditation of schools of midwifery and health technology: basic infrastructure, laboratory availability and equipment, transportation for clinical supervision, and teacher qualifications. As the NMCN was in the process of visiting schools of midwifery contemporary with Capacity*Plus*'s visits, such factors were especially noted by administrators and faculty who felt their institutional accreditation was at risk due to one or more of these issues.

Basic infrastructure shortcomings were pronounced at several of the schools visited. Common difficulties noted by both students and staff members included lack of/insufficiency of hostels; lack of classroom space and/or classroom unsuitability due to structural and equipment deficiencies; and insufficient office space for faculty and staff. Two schools pointed to leaking roofs, several had either no generator to maintain electricity or the generator was not functional, and one respondent noted that the school had only a single functioning toilet for more than 300 faculty, staff, and students.

Respondents reported that damaged classrooms in one of the schools visited had contributed to delayed graduations and stretched faculty. This is because the severe deficiencies made the classrooms unusable. The result was fewer classes being available to students in any given semester and students having to wait until required classes were offered. At institutions with compromised classrooms, the rooms that are in better condition are used in rotation, with some sessions scheduled for evenings. However, the evening classes are often cancelled when no electricity is available to light the rooms, further delaying or impeding student progress. Moreover, faculty must work late into the evenings to offer these courses.

One school of health technology pointed out that hostel and cafeteria capacity and quality make a difference in student safety (discouraging students from living in less safe off-site areas) and in student attrition, by saving students money which they would otherwise have to spend on food and housing. The lack of reliable methods of student and staff transport at many schools also contributes to students' logistic challenges and teachers' ability to supervise them in often distant clinical sites. Designated busses for students and clinical supervisors to get to practice sites would greatly improve student supervision. At one site visited, faculty stated that although they are required by their professional regulatory body to visit students on-site once per week, lack of reliable transport has curtailed the visits. Where one school had two working busses in the past, one is currently nonfunctional, and the only licensed driver for the second recently left the school. In many cases, the administration of the schools noted that a school may lose its accreditation if it does not address infrastructure and equipment issues such as these.



Unequipped basic science laboratory, SHT Agasha

In several schools of health technology visited, the team noted a pattern of newly created but often empty space for basic science laboratories. One faculty member at a school of health technology acknowledged that such laboratories are a requirement for school accreditation, but noted that many schools have only recently begun to develop laboratories as the regulatory bodies have focused more attention upon these facilities. Unfortunately, because the laboratories are new in many institutions, they are often unfinished and almost

"We would like to update our knowledge on modern issues of health. Short courses would be helpful—we are long out of school."

-Administrator

"So many of the recent workshops aren't sponsored by the [state] ministry. We can go on our own but need support to update our skills."

-Faculty member

"Trainings motivate the staff."

-Administrator

completely unequipped, lacking even furniture and shelving in some cases (see photo above). The team also observed a paradoxical situation wherein a few of the relatively new buildings created for this purpose are experiencing cracking roofs and walls, indicating lack of quality assurance in their construction. Lack of functional basic science laboratories can endanger accreditation at schools of health technology.

Faculty at schools of health technology and midwifery are required by their respective accrediting bodies to earn specific certifications in training for their disciplines (e.g., diplomas in health education, certifications in midwifery training) and to continue updating their training as health care evolves. Although respondents routinely listed training as a "pull factor" encouraging faculty retention, in every school visited, faculty and administrators lamented their lack of training and the lack of both resources and time to complete continuing education. Staff members specifically requested certain workshops, seminars, and trainings, unprompted by the interviewers (see Table 1 below). Some trainings of this type have been offered in various locations, and in some cases institutions have granted permission for attending the courses, but funding and time for training generally is lacking.

Although faculty report being stretched to perform their duties, most stated that the completion of training courses would be possible. Faculty members would have to organize their participation in training on a "staggered" time schedule so that they could attend in small groups. Ideally, trainings should be timed to occur during periods of the semester commonly used by students for their clinical attachments.

In addition to lack of training in some areas for faculty, some schools lack qualified, empowered administrators. These schools are operating with acting administrators who may not have either the management training or the mandate to make needed changes to strengthen their schools.

Table 1: Training Topics Requested by Faculty

Topics
Active postpartum management
Advanced life support (ALS trainer training)
Advanced life support in obstetrics (ALSO trainer training)
Basic life support (CPR trainer training)
Cancer transmission
Computer use/IT training

Topics
Family planning
Management of abortion
Management of obstetric emergencies
Neonatal resuscitation
Quality assurance (management)

Student Progression and Attrition

In every case, interviewees agreed that relatively few students of either health technology or midwifery drop or fail out of their courses entirely, except in the case of students eliminated through the institutionalized practice of "weeding." Rather, students are likely to fall back or defer to later classes, repeating any given course up to three times until they are able to pass. When students do completely discontinue their studies, the reasons given are usually financial (including the inability to pay school fees or housing rents or the need to support family members after a crisis) or personal (such as a student's inability to cope with schoolwork while caring for a newborn).

Deferred studies have two detrimental effects. First, they cause "clumping" of students in difficult courses as groups of students repeating classes stretch the class size of the following cohort. This phenomenon likely results in the largest class sizes where they are least welcome—in the hardest classes—and further stresses overworked faculty. Second, when students repeat several courses they may significantly delay their graduation, which delays the moment when they become needed health workers.

> *"Dropout is a very rare phenomena for us; the students do all they can to remain at school, as CHO qualification is the enviable peak for PHC workers, and with it they can get promoted to the rank of a director in the civil service."*
> *–Coordinator, CHO training*

The interviewees who commented on students actually dropping their studies tended to note several common issues. First and most commonly discussed, students who drop out tend to have financial stressors. They may be tuition-paying, either because they are not indigenes to the state in which their school is located (most state schools are free for indigenes students) or because the school is privately owned; or they may incur costs due to a lack of housing (hostel unavailability) or a lack of facilities to prepare inexpensive food. Hostels were unavailable either entirely or to large groups of students in six of the nine schools visited. In a seventh, the administrators stated that the hostel was vastly overcrowded, with ten students sleeping in rooms made for four. Where hostels were unavailable, students complained of the expenses of both renting housing and paying for transport to and from school. Where facilities for cooking food were unavailable to students in hostels, they remarked upon the expense of buying prepared foods.

The second common issue noted about students who discontinue their studies was that they often have personal, professional, marital, or family problems largely unrelated to their tenure at school. Again, these tend to have financial ramifications. Respondents gave examples of students dropping their studies to take care of sick relatives or of when a death in the family

made it necessary for a student to find full-time employment. One other example involved a CHEW studying to become a community health officer. As the CHO course is desirable for both the student and the community, this student was assured that he would be granted time to complete the qualification. However, after he had enrolled he was unable to gain study leave for the duration of the course. Such misunderstandings could be avoided if schools required potential enrollees into secondary qualification courses (post-basic midwifery, CHO) to obtain written permission for study leave before offering them admission.

When specifically asked about the likelihood of pregnant students or new mothers dropping out of school, most interviewees denied that this was a common factor encouraging student loss. Except when unmarried, such students were more likely to defer than to end their studies. In the case of married new mothers, one faculty member stated "Most of the students who are pregnant are married, and the married students are more likely to succeed on their exams." Likewise, respondents described students in the secondary qualifications courses (post-basic midwifery, CHO) as less likely to discontinue their studies than their younger colleagues. Said one manager, "The [secondary qualifications] students come on in-service with their salary and are more matured and focused about why they are in school, compared against a teenager just coming out of secondary school." Respondents also described the advanced students as more mature socially and better adjusted academically than the CHEW and basic midwifery students.

Examination

On average, just over half of those course graduates presented to sit national qualifying examinations in the community health worker disciplines pass them on first attempt. It was estimated by one informant and seemed consistent with assessment indications that slightly more than two-thirds of those who take midwifery examinations pass on first attempt. In either case, those who do not qualify are referred to re-sit the examination up to twice. Any person who does not pass their examination after three times is not welcome to attempt it again and is listed as having failed the exam.

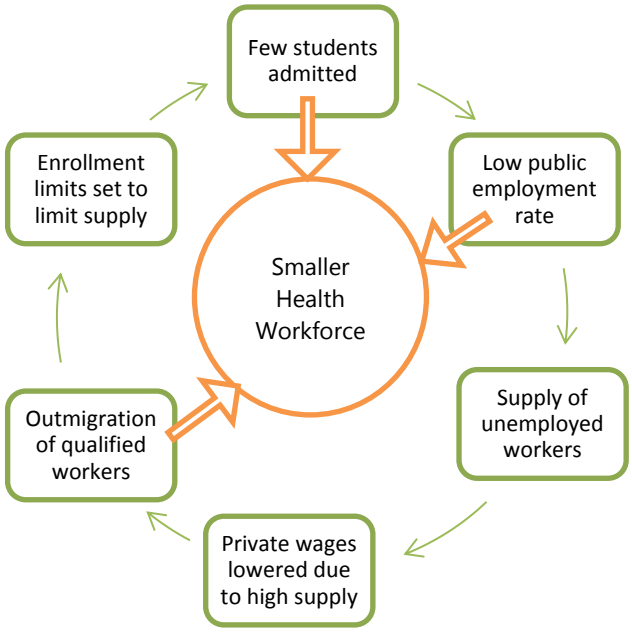
Noted challenges for students taking national examinations were academic in nature. Students and faculty agreed that graduates are often simply unprepared for the examinations, especially for the portions that include practical skill demonstrations. When queried about specific challenges to students' success, the students as well as faculty and administrators agreed that schools lack basic equipment and textbooks needed for learners to practice and understand the requisite skills. Respondents noted textbook shortages in all schools visited and often mentioned them as the number one limiting factor for improving and increasing teaching. It is important not only that books be present but that a school have the *correct* textbooks. The Commissioner for Health in Bauchi State noted that some donors had supplied textbooks to health technology schools, for instance, which were written with medical students rather than health technology students in mind.

In addition, faculty noted that they are sometimes untrained about the subjects tested and are, therefore, unable to train students. Of particular note was a pervasive lack of either the training or equipment necessary to teach basic and advanced life support skills, even though both are

competencies tested on national examinations of all cadres. Faculty in all but one visited school requested provision of basic cardiopulmonary resuscitation (CPR) and intubation manikins, and the training-of-trainers necessary for all faculty members to teach students these skills.

In each of the schools visited, the schools encourage graduates who are referred to re-sit examinations to attend some type of remedial or refresher coursework before reattempting the test at the following opportunity. This coursework tends to be three months in length, though some schools offer six months of assistance. Remedial work may consist of graduates joining the current final year class (and thereby basically retaking the schooling they recently completed) or may include specific assistance with topics noted as difficult for them on the examination. Interviewees stated that test takers receive comprehensive results with their notice of examination failure; that is, test results make clear to referred persons which areas of the test caused them particular trouble. In schools offering specific assistance to referred graduates, faculty stated that they worked with students on the areas of difficulty as noted in the results. While some schools offered this remedial teaching free of charge to graduates, others charged standard tuition fees to the referred students. Additionally, administrators, faculty, and students noted that referred graduates who gain employment (for instance, as an auxiliary at a clinic or hospital) may not return to receive tutoring.

Figure 2: Factors in Preservice Education Contributing to Reduced Health Workforce in Nigeria



Workforce Factors

Absorption of graduates of health worker training institutions is a perennial problem in Nigeria, as it is in many nations. Unusually perhaps, public sector health system employees in Nigeria are generally paid higher wages than are their private sector counterparts. As interviewees repeatedly stated, this has contributed to a negative "loop" for the schools visited and their graduates. Succinctly put, this loop begins with government at all levels being unable or unwilling to employ significant portions of qualified health workers, especially those who have fulfilled long, costly training requirements such as nurse-midwives. Unemployment of trained health workers may occur even where unfilled employment slots exist in a government institution, due to the cost of employing such cadres. Those trained personnel unable to find employment in the public sector turn to opportunities in private care provision, or leave the health workforce entirely. According to interviewees, pay offered by the private sector for the health cadres targeted in this assessment is often below a living wage, which is a factor noted by health workers who decide to emigrate from Nigeria. In large part due to health worker unemployment and low wages, the professional bodies such as the NMCN press to limit

health worker supply in hopes that openings will be filled, fewer health workers will be unemployed, and wages will rise. Professional bodies accomplish this by capping enrollment at schools training health workers, even where schools are equipped and staffed to train larger numbers of students. Thus, workforce strength in Nigeria is drained from many points along the pipeline. Too few students are training to become health workers; there is high unemployment or underemployment of trained personnel; and qualified personnel emigrate to take higher-paying employment elsewhere. As can be seen in Table 2, these and other factors have led to low densities of health workers, especially in rural states.

Table 2: Population of Targeted Cadres Registered to Practice in USAID/PEPFAR-Supported States, 2009

State	Population	Nurses and Midwives Registered**	Community Health Officers in Good Standing*	Community Health Extension Workers in Good Standing*
Abia	3,081,479	1,376 (4.47:10,000)	52 (0.17:10,000)	1,262 (4.10:10,000)
Abuja (FCT)	1,527,911	1,508 (9.87:10,000)	90 (0.59:10,000)	1,000 (6.54:10,000)
Anambra	4,547,541	1,214 (2.67:10,000)	24 (0.05:10,000)	1,000 (2.20:10,000)
Akwa Ibom	4,262,541	2,311 (5.42:10,000)	238 (0.56:10,000)	1,556 (3.65:10,000)
Bauchi	5,084,839	519 (1.02:10,000)	108 (0.21:10,000)	1,457 (2.87:10,000)
Bayelsa	1,852,104	255 (1.38:10,000)	98 (0.53:10,000)	1,000 (5.40:10,000)
Benue	4,587,691	368 (0.8:10,000)	897 (1.96:10,000)	2,803 (6.11:10,000)
Borno	4,513,475	1,190 (2.64:10,000)	235 (0.52:10,000)	2,362 (5.23:10,000)
Cross River	3,141,246	409 (1.3:10,000)	196 (0.62:10,000)	1,542 (4.91:10,000)
Edo	4,456,284	1,949 (4.37:10,000)	34 (0.08:10,000)	1,000 (2.24:10,000)
Enugu	3,541,743	1,906 (5.38:10,000)	161 (0.45:10,000)	2,996 (8.46:10,000)
Gombe	2,559,433	577 (2.25:10,000)	50 (0.2:10,000)	900 (3.52:10,000)
Kaduna	6,596,327	2,120 (3.21:10,000)	247 (0.37:10,000)	5,249 (7.96:10,000)
Kogi	3,564,782	2,850 (7.99:10,000)	99 (0.28:10,000)	971 (2.72:10,000)
Lagos	9,800,644	5,506 (5.62:10,000)	167 (0.17:10,000)	870 (0.89:10,000)
Nasarawa	2,025,986	1,106 (5.46:10,000)	110 (0.54:10,000)	1,111 (5.48:10,000)
Plateau	3,456,294	1,772 (5.13:10,000)	174 (0.5:10,000)	2,319 (6.71:10,000)
Rivers	5,638,217	1,001 (1.78:10,000)	129 (0.23:10,000)	2,715 (4.82:10,000)
Sokoto	4,019,841	1,407 (3.5:10,000)	174 (0.43:10,000)	423 (1.05:10,000)
Taraba	2,501,648	908 (3.63:10,000)	72 (0.29:10,000)	1,111 (4.44:10,000)
	80,760,026	**30,252 (3.75:10,000)**	**3,355 (0.42:10,000)**	**33,647 (4.17:10,000)**

* In good standing: Health workers current on registration and legally able to practice.
** Registered: Health workers listed in their registry but who may or may not be legally able to practice.

Source: FMOH 2010. "Nigeria Health Workforce Profile as at December 2009."

RECOMMENDATIONS

The purpose of the Rapid Scoping Assessment was to identify specific training institutions with which Capacity*Plus* may work, as well as to identify specific barriers to scaling up preservice nursing, community health, and midwifery education amenable to support by Capacity*Plus*.

Capacity*Plus* utilized the findings of the assessment detailed in this report to formulate a range of recommendations which have the potential to increase the availability of health workers to meet the priority health needs of underserved populations through sustainable and scalable HRH interventions. The recommendations are explained below; many are currently being implemented in Nigeria with the active support and engagement of the educational institutions, Federal and State Ministries of Health, and relevant professional bodies.

Cadres

Cadres to be targeted by the Capacity*Plus* program of support include preservice CHEWs, junior CHEWs, CHOs, basic midwives, and post-basic midwives. Table 3 summarizes the current preservice production of each of these cadres in the states visited or recommended for site visits (Bauchi, Benue, Cross River, Lagos, Nasarawa, Sokoto, and the Federal Capital Territory or FCT). Data represent reports or estimates by interviewees, the 2011 Community Health Practitioners' Registration Board CHPRB report, and/or the NMCN.

Table 3: Production of Targeted Cadres in States Selected for Site Visits

State	Cadre	Produced	Possible
Bauchi	Midwives	50 c	50
	CHO	0	0
	CHEW	28 b	96 b
	JCHEW	67 b	129 b
Benue	Midwives	66 a	100 a
	CHO	0	0
	CHEW	47 a	184 a
	JCHEW	70 a	200 a
Cross River	Midwives	71 a,c	75 a,c
	CHO	27 a	54 a
	CHEW	48 a	82 a
	JCHEW	77 a	131 a
Lagos	Midwives	46 a	50 a
	CHO	17 a	35 a
	CHEW	71 a	75 a
	JCHEW	0 a	0 a
Nasarawa	Midwives	0 a	0 a
	CHO	0 a	0 a
	CHEW	42 b	127 b
	JCHEW	91 b	181 b
Sokoto	Midwives	75 a,c	75 a,c
	CHO	27 b	60 b
	CHEW	16 b	121 b
	JCHEW	28 b	149 b
FCT	Midwives	50 a,c	50 a,c
	CHO	0 a	0 a
	CHEW	0 a	0 a
	JCHEW	0 a	0 a
Totals	Midwives	358	400
	CHO	71	149
	CHEW	252	685

State	Cadre	Produced	Possible
	JCHEW	333	790
	All CHWs	656	1,624

a) As reported by interviewees (2012)
b) CHPRB report (2011)
c) NMCN estimates (2012)

Together, in 2011, all schools in each of the six states selected for site visits and the Federal Capital Territory produced 656 community health workers of all grades and an estimated 358 midwives. A further 42 midwifery program students and 968 students of CHEW, JCHEW, or CHO programs completed their courses of study and sat for relevant national examinations but did not pass to become qualified as health workers in 2011. Such students should be considered the persons most likely to benefit from any support given in a program focused upon measurable impact in a very short time.

If larger numbers of preservice health workers are to be reached, Capacity*Plus* will have to extend its efforts beyond the states covered by the assessment, including as many locations as are feasible given security, programmatic, and time constraints. Table 4 summarizes production of targeted cadres in all relevant schools and colleges throughout all PEPFAR-supported states, where an estimated 960 midwives and 1,640 community health workers (including CHO, CHEW, and JCHEW) passed qualifying examinations in 2011. Table 5 lists the number of accredited midwifery and health technology schools or colleges in USAID/PEPFAR-supported states.

We estimate that the maximum reasonable number of new health workers Capacity*Plus* would be able to support in preservice education in USAID/PEPFAR-supported states through the strategies suggested below is 650.

Table 4: Production of Targeted Health Workers in USAID/PEPFAR-Supported States, 2011

State	Midwives		Community Health Workers (All Cadres)	
	Graduates (estimate**)	Produced (estimate**)	Graduates*	Produced*
Abia	75	45	114	37
Abuja (FCT)	50	50	0	0
Akwa Ibom	100	60	228	69
Anambra	175	105	60	42
Bauchi	50	30	225	95
Bayelsa	0	0	64	36
Benue	100	66	384	117
Borno	50	30	0	0
Cross River	75	71	267	152
Edo	250	150	223	100
Enugu	75	45	346	230
Gombe	50	30	68	31
Kaduna	150	97	348	200
Kogi	25	15	147	38

State	Midwives		Community Health Workers (All Cadres)	
	Graduates (estimate**)	Produced (estimate**)	Graduates*	Produced*
Lagos	50	46	110	88
Nasarawa	0	0	308	133
Plateau	100	60	188	113
Rivers	25	15	43	38
Sokoto	75	45	330	71
Taraba	0	0	100	50
	1,475	**960**	**3,553**	**1,640**

* *Source:* Community Health Practitioners Registration Board

**Estimates of midwifery graduates and production based upon professional council enrollment caps and average production per enrollee noted in rapid assessment

Table 5: Accredited Schools or Colleges Training Targeted Cadres in USAID/PEPFAR-Supported States

State	Midwifery		Health Technology	
	Basic Midwifery	Post-Basic Midwifery	CHO	CHEW/ JCHEW
Abia	-	3	-	1
Abuja (FCT)	1	-	-	-
Anambra	2	3	-	1
Akwa Ibom	-	4	1	1
Bauchi	1	-	-	1
Bayelsa	-	-	-	1
Benue	2	-	-	3
Borno	1	-	-	-
Cross River	-	3	1	3
Edo	4	1	1	1
Enugu	-	3	1	3
Gombe	1	-	-	1
Kaduna	2	2	1	3
Kogi	-	1	-	1
Lagos	-	2	1	1
Nasarawa	-	-	-	2
Plateau	1	2	1	2*
Rivers	-	1	-	1
Sokoto	1	1	1	1
Taraba	-	-	-	1
In 18 states	**16**	**26**	**8**	**28**
Nationwide	**23**	**44**	**14**	**50**

*Examination results withheld by the CHPB for the School of Health Technology in Pankshin

Institutions

Capacity*Plus* will select ten schools in the site visit states for institutional support. Capacity*Plus* will support the schools in a variety of ways, including through equipment, training, and other non-scholarship programming. To qualify, schools should meet the following criteria:

1. Be located within a PEPFAR-supported state
2. Train the cadre(s) of focus
3. Be accredited by the appropriate professional body
4. Have needs which are amenable to support by USAID-approved interventions and which can be fulfilled within the program period to effect an increase in the number of graduates passing qualifying examinations required to become health workers in Nigeria
5. Have challenges which, when met in collaboration with Capacity*Plus*, would result in measurable impact per PEPFAR's indicators regarding increased production of health workers
6. Display an interest in working with Capacity*Plus*.

Of the schools visited, 15 of the 19 institutions fulfill all six criteria:

1. College of Health Technology, Yaba
2. School of Post-basic Midwifery, LUTH
3. School of Midwifery, Makurdi
4. School of Health Technology, Agasha
5. NKST College of Health Technology, Mkar
6. NKST School of Basic Midwifery, Mkar
7. School of Health Technology, Gboko
8. School of Post-basic Midwifery, Calabar
9. School of Health Technology, Alushi
10. School of Health Technology, Keffi
11. School of Midwifery, Bauchi
12. School of Health Technology, Ningi
13. College of Nursing and Midwifery, Sokoto
14. Community Health Officer Training School, UDUTH, Sokoto
15. Sultan Abdurrahman College of Health Technology, Gwadabawa

Not meeting the criteria are the College of Health Technology (Calabar) and the UDUTH School of Post-basic Midwifery (Sokoto), which are unlikely to see significant countable increases in production of health workers given the types of support Capacity*Plus* is likely to be able to implement in a single year. The schools of Nursing at LUTH, Lagos and Makurdi were excluded due to an intent to focus upon institutions training Midwives and Community Health Extension

Workers. Site visitors noted particular need in Makurdi, Mkar, Gwadabawa, Gboko, Agasha, Keffi, and Ningi. In meetings, policy-makers at the state level specifically listed the schools in Mkar, Gboko, Keffi, Gwadabawa, and Ningi as those of highest priority for Capacity*Plus* support.

Due to the small number of health workers trained in the country, the professional accreditation bodies' desire to continue to cap enrollment of students, and the short timeframe of the support activity, it seems desirable to offer Capacity*Plus* scholarship and other direct financial student support to the widest possible number of institutions of learning. This will allow financial support to contribute toward the education of the targeted number of students (600) and the formation of Nigerian health workers. Scholarships and bursaries will be available through an application process to students in all relevant training institutions. Further, institutionally-based support will be offered through memoranda of understanding to no more than ten schools. Support will be based upon school needs and budgetary concerns. Selection of schools will be made through conversations with the regulatory bodies, government agencies, and other stakeholders.

Challenges and Activities

Appendix 4 summarizes the logic model for recommended strategies and activities that Capacity*Plus* can support in the short term. The logic model in Appendix 5 outlines longer-term strategies that are outside of the timeframe of Capacity*Plus* (or do not address PEPFAR indicators) but would be beneficial in addressing some of the challenges listed below.

Selection Factors

Selection challenge one

Unreliable secondary school qualifications

*This challenge is unlikely to be affected by any activity implementable by Capacity*Plus *at this time.* Most of the visited schools meet the challenge of unreliable secondary school qualifications by admitting more than their enrollment cap of students during a "weeding" period.

Innovative practice. UCT Calabar does not "weed" but uses strict application standards to eliminate students lacking necessary abilities to succeed in school.

Selection challenge two

Limits on enrollment to health training institutions

*This challenge is unlikely to be affected by any activity implemented during the Capacity*Plus *programmatic timeline.* Long term, it is advisable that professional bodies increase enrollment limits, especially in states with the greatest need. Capacity*Plus* should encourage such allowances where facilities and faculty have the capacity. Two schools of midwifery (in Lagos and Calabar) and one of health technology (Mkar) specifically told site visitors that, given permission,

they are capable of increasing their enrollment of students without decreasing educational quality and are interested in doing so.

School Factors

School challenge one

Lack of staff training in specific areas of need

Good practice. At NKST Mkar, faculty members are allowed to train for multiple-year degrees while earning their salary. Each faculty member interested in this program must sign a bond to work at the school twice the number of years of the training or refund all salary paid in a lump sum. Administrators noted that no faculty member trained under this program has yet failed to return to the school.

Recommended activities. Provide train-the-trainer courses in areas requested by faculty, which may include:

- Active postpartum management
- Advanced life support (ALS)
- Advanced life support in obstetrics (ALSO)
- Basic life support (CPR)
- Cancer transmission
- Computer use/IT training
- Family planning
- Management of abortion
- Management of obstetric emergencies
- Neonatal resuscitation

School challenge two

Infrastructure deficiencies

Recommendation. *Although strategies to meet this challenge are outside the scope of Capacity*Plus *programming at this time,* we recommend sharing findings in this area with other organizations. Organizations can connect training institutions with agencies, nongovernmental organizations (NGOs), and bilateral organizations specializing in infrastructure repair or construction; other entities may be able to provide generators, transportation (busses), maintenance for schools with severe power issues, and additional transportation resources for clinical supervision.

School challenge three

School administrators' empowerment

Recommended activities. Engage and empower acting and permanent administrators by providing opportunities for networking with experienced personnel at other facilities as well as other stakeholders. Allow administrators to discuss common issues and needs.

Student Progression and Attrition

Progression challenge one

Lack of teaching aids, textbooks, library books, and equipment

Recommended activities. Provide teaching aids, books, and equipment. Provide training (train-the-trainer courses) where applicable for use of demonstration models. Faculty interviewed also indicated that this activity would increase the rate of graduates passing national qualifying examinations, as they felt graduates were unprepared for practical portions of their exams. Requested relevant teaching aids include:

- Partograph poster (Example: http://maternova.net/health-innovations/who-modified-partograph)
- Models of fetus, placenta, maternal pelvis
- Manikins useable for CPR and adult and child intubation
- White boards
- Basic sciences laboratory equipment
- Practical demonstration equipment including intubation kits, forceps, etc.
- Instructor's manual, equipment for ALSO and BLSO courses (training required). See: http://www.aafp.org/online/en/home/cme/aafpcourses/clinicalcourses/also.html
- Pictorial resources for microbiology and pathology courses (may be posters, texts, etc.); respondents requested digital resources (however, digital resources would necessitate also supplying computers and multimedia projectors)
- Multimedia projector and laptops with CD-based teaching aids (requested; not recommended)

Attrition challenge one

Economic barriers

Recommended activities. Provide scholarships and bursaries targeted to students in the final year of their studies.

Examination

Examination challenge one

Referred students not retaking examinations or not attending offered tutorials

Recommended activities. Provide incentives for students to return for maximum allowable training periods (usually six months) to their training institutions.

Examination challenge two

Graduates presenting for examination multiple times without passing

Recommended activities. Provide tutoring based on students' individual difficulties as evidenced by examination results. Tutoring may be encouraged through remuneration for existing teachers' time (paid overtime to provide individualized tutoring), through sourcing additional teaching staff from local facilities, or through identifying and hiring highly successful graduates with the ability to peer-tutor referred students.

Recall that test takers who are considered to have failed their examination have taken it unsuccessfully three times. To illustrate the magnitude of this examination challenge, Table 6 summarizes the total number of referred and failed community health worker test takers in the 18 USAID/PEPFAR-supported states in 2011. (Similar in-depth information regarding midwifery graduates was unavailable.) Whereas only about 7% of CHOs candidates presenting for examination eventually failed (29/417), at least from one-fourth of CHEW (26%) and JCHEW (29%) test takers (433/1638 and 532/1809, respectively) failed on the third try.

Table 6: Examination Results for Community Health Workers in USAID/PEPFAR-Supported States, 2011

State	CHO			CHEW			JCHEW			Total Referred
	Presented for Exam	Referred	Failed	Presented for Exam	Referred	Failed	Presented for Exam	Referred	Failed	
Abia	-	-	-	114	53	22	93	26	21	**79**
Abuja (FCT)	-	-	-	-	-	-	-	-	-	**0**
Akwa Ibom	39	17	1	87	31	30	102	27	36	**75**
Anambra	-	-	-	60	9	8	61	9	24	**18**
Bauchi	-	-	-	96	33	31	129	23	37	**56**
Bayelsa	-	-	-	64	22	6	91	13	33	**35**
Benue	-	-	-	120	40	55	153	37	76	**77**
Borno	-	-	-	-	-	-	-	-	-	**0**
Cross River	54	21	6	95	18	15	118	20	18	**38**
Edo	66	29	13	64	17	13	93	14	35	**60**
Enugu	52	22	3	128	19	9	166	42	18	**83**
Gombe	-	-	-	51	8	26	17	1	2	**9**
Kaduna	49	22	2	129	39	17	170	24	43	**85**
Kogi	-	-	-	147	41	58	70	9	33	**50**
Lagos	35	15	1	37	4	5	-	-	-	**19**
Nasarawa	-	-	-	127	54	28	181	50	37	**104**
Plateau*	62	11	3	55	26	7	71	12	12	**38**
Rivers	-	-	-	43	3	1	38	0	1	**4**
Sokoto	60	24	0	121	24	80	149	20	95	**44**
Taraba	-	-	-	100	26	22	107	23	11	**49**
Total	**417**	**161**	**29**	**1,638**	**467**	**433**	**1,809**	**350**	**532**	**923**

*Results for test takers from the School of Health Technology in Pankshin (Plateau state) withheld

Workforce Factors

Workforce challenge one

Poor absorption and remuneration

*This challenge is unlikely to be affected by any activity implementable by Capacity*Plus *at this time*. In the long term, Capacity*Plus*, USAID, and the Federal and State Ministries of Health in Nigeria should encourage absorption and higher remuneration of trained personnel. This can be done by highlighting the advantages of hiring highly-trained health workers to work in local government and private health institutions. All stakeholders should encourage government entities with openings to fill them quickly and appropriately, and encourage patients to attend only clinics and hospitals with qualified staff.

APPENDIX A: INTERVIEW GUIDE FOR DISCUSSIONS WITH ADMINISTRATORS

General information

Name of School/University

Title (if speaking with single person)

Description of duties (if speaking with single person)

Type(s) of health workers trained at your institution

Cadre	Trained Y/N	Number admitted/year	Total currently enrolled	Number of graduates/year
Basic Midwives				
Post-Basic Midwives				
Community Health Officers				
Junior Community Health Extension Workers				
Senior Community Health Extension Workers				

Educators and Staff

In your opinion, are there a sufficient number of instructors at your facility?

Category of educators	Quantity of Educators			
	I don't know	Too few	Sufficient	Too many
1. Classroom teachers, such as professors, assistant professors, and lecturers at the school				
2. Clinical teachers, such as preceptors, clinical instructors, or supervisors at health facilities				

How can the administration best support faculty in their responsibilities?

Type here (comments)

In your opinion, what could be done to ensure the availability of sufficient numbers and high quality of instructors in your program?

Type here

Do you (FEMALE) feel unsafe or harassed because of your gender while at the school?

☐ Yes ☐ No ☐ No female administrators present

Are there programs to support female staff who are pregnant or have small children at your school?

	Yes:
	No

Students

What proportion of students who begin studies here, graduate from the program?

Cadre	N/A	I don't know	0-25%	25-40%	40-60%	60-75%	75-100%
Community Health Officer							
Junior CHEW							
Senior CHEW							
Basic Midwife							
Post Basic Midwife							

In your opinion, what are the main reasons why students leave or drop out of school before completing their studies? (Check all that apply)

- ☐ 1. Students are not prepared for their studies through previous education
- ☐ 2. Students are not interested in becoming CHEWs or midwives
- ☐ 3. Students cannot afford school costs, such as fees and materials
- ☐ 4. There is too much information to cover in a short time
- ☐ 5. The courses are too difficult
- ☐ 6. School are too far from students' homes
- ☐ 7. Students not attending classes/not studying sufficiently
- ☐ 8. Marriage
- ☐ 9. Pregnancy or giving birth
- ☐ 10. I don't know
- ☐ 11. Other (Specify) _____

Type comments here

What should be done to retain students in school? (Check best answer)

- [ ] 1. Students must be selected from those who are interested in profession
- [ ] 2. A counseling service
- [ ] 3. A tutoring service for difficult courses
- [ ] 4. A financial assistance system
- [ ] 5. Peer support groups of students helping other students
- [ ] 6. Support for job search and/or placement
- [ ] 7. I don't know
- [ ] 8. Other:

Type comments here

About what proportion of graduates of this school pass the examinations which qualify them to practice?

Cadre	N/A	I don't know	0-25%	25-40%	40-60%	60-75%	75-100%
Community Health Officer							
Junior CHEW							
Senior CHEW							
Basic Midwife							
Post Basic Midwife							

What should be done to ensure students pass their national qualifying examinations after graduating?

Type comments here

If graduates do not pass their examinations the first time, and are referred to take the examination again, what support is offered to graduates to ensure they pass the exam the second time?

Type here

In general, do you think the infrastructure at your institution – such as classrooms, skills labs, libraries, computer rooms, etc. are sufficient in quality and quantity? (Prompt conversation regarding the following)

1. Classrooms	2. Clinical practice or Internship Sites
3. Libraries	4. Accommodation or dormitories
5. Laboratories	6. Cafeteria
7. Technical rooms/skills labs	8. Water
9. Computer rooms	10. Electricity
11. Internet	12. Transportation

☐ Yes ☐ No ☐ I don't know

What infrastructure should be improved? In what way do these items need to be improved?

Type comments here

How would you rate the quantity of the following materials and equipment at your institution? (Check one box for each material)

Materials and Equipment	**Supply/Quantity**			
	Don't know	Not available	Poor supply	Good supply
1. Textbooks				
2. Journals				
3. Computers				
4. Anatomical Models				
5. Basic Clinical Equipment				

Final Comments

APPENDIX B: INTERVIEW GUIDE FOR DISCUSSIONS WITH FACULTY

General information

Name of School/University

Title (if speaking with single person)

Classes taught

Type(s) of health workers trained at your institution

Cadre	Trained Y/N	Number admitted/year	Total currently enrolled	Number of graduates/year
Basic Midwives				
Post-Basic Midwives				
Community Health Officers				
Junior Community Health Extension Workers				
Senior Community Health Extension Workers				

Educators

In your opinion, are there a sufficient number of instructors at your facility?

Category of educators	Quantity of Educators			
	I don't know	Too few	Sufficient	Too many
3. Classroom teachers, such as professors, assistant professors, and lecturers at the school				
4. Clinical teachers, such as preceptors, clinical instructors, or supervisors at health facilities				

How can the administration best support faculty in their responsibilities?

Type here (comments)

School factors

What courses do you believe will be most beneficial to students when they are practicing?

Type here

What courses do you think are *missing* from your curriculum, which would be beneficial for students to have before graduation (what would you like students to learn more about)?

Type here

Do students receive sufficient time "by the bedside", that is, in clinical settings working with patients?

	Yes:
	No:

Are students required to maintain a "logbook" or other record of clinical interactions?

	Yes:
	No:

Do you (FEMALE) feel unsafe or harassed because of your gender while at the school?

☐ Yes ☐ No ☐ No female faculty present

Are there any programs to support female faculty who are pregnant or have small children at your school?

	Yes:
	No

Graduation and Examination

What proportion of students who begin studies here, graduate from the program?

Cadre	N/A	I don't know	0-25%	25-40%	40-60%	60-75%	75-100%
Community Health Officer							
Junior CHEW							
Senior CHEW							
Basic Midwife							
Post Basic Midwife							

In your opinion, what are the main reasons why students leave or drop out of school before completing their studies? (Check all that apply)

☐ 12. Students are not prepared for their studies through previous education
☐ 13. Students are not interested in becoming CHEWs or midwives
☐ 14. Students cannot afford school costs, such as fees and materials
☐ 15. There is too much information to cover in a short time
☐ 16. The courses are too difficult
☐ 17. School is too far from students' homes
☐ 18. There are not enough course materials (textbooks/study aids) available
☐ 19. Students not attending classes/not studying sufficiently
☐ 20. Marriage, pregnancy or giving birth
☐ 21. Other (Specify) _____

Does your school offer tutoring or other help to students who are thinking about dropping from their studies?

☐ Yes ☐ No ☐ I don't know

If yes, what type?

Type here

What should be done to retain students in school? (Check best answer)

☐	9. Students must be selected from those who are interested in profession
☐	10. A counseling service
☐	11. A tutoring service for difficult courses
☐	12. A financial assistance system (scholarships/stipends)
☐	13. Peer support groups of students helping other students
☐	14. Support for job search and/or placement
☐	15. Other:

Do most students who graduate from your program pass their qualifying examination to practice?

☐	Almost all students pass the exams
☐	Most students fail
☐	Most students must be referred to take the test again
☐	Many students fail
☐	Many students must be referred to take the test again
☐	I don't know

Why might a student not pass their qualifying examination?

Type comments here

In your opinion, what might best assist graduates who are in danger of failing their examinations?

	Type of assistance	Would students use this assistance?
	1. Extra study materials	
	2. A counseling service	
	3. A tutoring service through the test date	
	4. Transportation to the test site	
	5. Peer support groups (graduates helping other graduates)	
	6. Other:	

Type comments here

If graduates do not pass their examination on the first try, and are referred to take the examination again, what support is offered to graduates to ensure they pass the exam the second time?

Type here

Infrastructure

In general, do you think the infrastructure at your institution – such as classrooms, skills labs, libraries, computer rooms, etc. are sufficient in quality and quantity? (Prompt conversation regarding the following) ☐ Yes ☐ No ☐ I don't know

13. Classrooms	14. Transportation	15. Clinical practice or Internship Sites
16. Libraries	17. Internet	18. Accommodation or dormitories
19. Laboratories	20. Computer rooms	21. Cafeteria
22. Technical rooms/skills labs	23. Electricity	24. Water

What infrastructure should be improved? In what way do these items need to be improved?

Type comments here

How would you rate the quantity of the following materials and equipment at your institution? (Check one box for each material)

Materials and Equipment	Supply/Quantity			
	Don't know	Not available	Poor supply	Good supply
6. Textbooks				
7. Journals				
8. Computers				
9. Anatomical Models				
10. Basic Clinical Equipment				

Final Comments

APPENDIX C: INTERVIEW GUIDE FOR DISCUSSIONS WITH STUDENTS

Name of School/University

Year/Month of study **Program of study** **Length of Program**

Type(s) of health workers trained at your institution

Cadre	Trained Y/N	Number in your class *now*	Number who *began* in your class
Basic Midwives			
Post-Basic Midwives			
Community Health Officers			
Junior Community Health Extension Workers			
Senior Community Health Extension Workers			

What attracts students to study (Circle one) Midwifery/CHW? (Check all that apply)

1. Interest in the profession
2. Interest in helping people in need
3. Opportunities for professional development
4. Attractive compensation
5. Government influence
6. Family influence
7. Influence of friends/others outside the family
8. They have no other choice
9. Other (Specify)

Why do students choose to study at your institution? (Check all that apply)

	1. Assigned by local/state/federal government
	2. Location
	3. Quality of school
	4. Scholarship/monetary incentive
	5. I don't know
	6. Other (Specify)

While in school

What information do you think is *missing* from your curriculum, which would be beneficial to have before you graduate (what would you like to learn more about)?

Type here

Do you feel that you receive sufficient time "by the bedside", that is, in clinical settings working with patients before you graduate?

	Yes:
	No:

Are you required to maintain a "logbook" or other record of clinical interactions?

	Yes:
	No:

Do you (FEMALE) feel unsafe or harassed because of your gender while in school?

☐ Yes ☐ No ☐ No female students present

Are there any programs to support female students who are pregnant or have small children at your school?

	Yes:
	No:

Graduation and Examination

Do most students who begin your program complete it?

☐ Yes ☐ No, many students drop out

☐ No, a few students drop out ☐ I don't know

Does your school offer tutoring or other help to students who are thinking about dropping from their studies?

☐ Yes ☐ No ☐ I don't know

If yes, what type?

Type here

In your opinion, what are the main reasons why students leave or drop out of school before completing their studies? (Check all that apply)

☐ 22. Students are not prepared for their studies through previous education
☐ 23. Students are not interested in becoming CHEWs or midwives
☐ 24. Students cannot afford school costs, such as fees and materials
☐ 25. There is too much information to cover in a short time
☐ 26. The courses are too difficult
☐ 27. School is too far from students' homes
☐ 28. Students not attending classes/not studying sufficiently
☐ 29. Marriage, pregnancy or giving birth
☐ 30. Other (Specify)

What should be done to retain students in school? (Check best answer)

- ☐ 16. Students must be selected from those who are interested in profession
- ☐ 17. A counseling service
- ☐ 18. A tutoring service for difficult courses
- ☐ 19. A financial assistance system (scholarships/stipends)
- ☐ 20. Peer support groups of students helping other students
- ☐ 21. Support for job search and/or placement
- ☐ 22. Other:

Type comments here

Do most students who graduate from your program pass their qualifying examination to practice?

- ☐ Almost all students pass the exams
- ☐ Most students fail
- ☐ Most students must be referred to take the test again
- ☐ Many students fail
- ☐ Many students must be referred to take the test again
- ☐ I don't know

Why might a student not pass their qualifying examination?

Type comments here

What should be done to ensure students pass their national qualifying examinations after graduating?

Type comments here

If you do not pass your examination on the first try and are referred to take the examination again, what support is offered to ensure you pass the exam the second time?

Type here

If any of the following was available, would it help you to pass your qualifying examinations?

	Type of assistance	Would you use this assistance?
	7. Extra study materials	
	8. A counseling service	
	9. A tutoring service through the test date	
	10. Transportation to the test site	
	11. Peer support groups (graduates helping other graduates)	
	12. Other:	

Infrastructure

In general, do you think the infrastructure at your institution – such as classrooms, skills labs, libraries, computer rooms, etc. are sufficient in quality and quantity?

☐ Yes ☐ No ☐ I don't know

25. Classrooms	26. Internet	27. Clinical practice or Internship Sites
28. Libraries	29. Computer rooms	30. Accommodation or dormitories
31. Laboratories	32. Transportation	33. Cafeteria
34. Technical rooms/skills labs	35. Electricity	36. Water

What infrastructure should be improved? In what way do these items need to be improved?

Type comments here

How would you rate the quantity of the following materials and equipment at your institution? (Check one box for each material)

Materials and Equipment	Supply/Quantity			
	Don't know	Not available	Poor supply	Good supply
11. Textbooks				
12. Journals				
13. Computers				
14. Anatomical Models				
15. Basic Clinical Equipment				

Final Comments

Appendix D: Logic Model for Recommended Strategies and Activities

Goal	Activity	Inputs	Predicted outcome	Indicators	Mechanism to collect data
Provide higher quality education to students, relevant to national and local needs and qualifying examinations	Provide train-the-trainer courses in areas requested by faculty and relevant to national examinations, local needs, and proper use of provided equipment	Trainers Texts Equipment Location	Faculty better prepared to teach skills and knowledge students need to succeed on examinations and in practice	Number of faculty trained	Attendance sheets
				Skills and knowledge taught/gained	Class curriculum
			Fewer students repeating classes	Proportion of students repeating relevant classes	Registration information
				Number of skills taught essential to meet local needs	Curricula, national health priorities, local epidemiology
			More students passing national exams	Number of skills taught relevant to national examinations	Curricula, national examinations
				Proportion of students passing national exam	Records from professional bodies
	Provide equipment and materials needed for faculty to demonstrate required skills and for students to practice them	Detailed list of needs Equipment Materials Logistic chain	Students will gain more practical learning	Ratio of equipment to students	Inventory, registration information
				Amount of time students spend in demonstration rooms	Curriculum, attendance sheets
				Number of times teachers use equipment for demonstration	Curriculum, interviews with faculty and students
			Fewer students failing practical portions of examinations	Proportion of students passing practical portion of national exam	Records from professional bodies
	Provide teaching aids for use in classrooms, demonstration rooms, and by students studying	Detailed list of needs Study aids Logistic chain	Fewer students repeat classes	Proportion of students repeating classes	Registration information
			Fewer students fail written portions of examinations	Proportion of students passing written portion of	Records from professional bodies

Goal	Activity	Inputs	Predicted outcome	Indicators	Mechanism to collect data
				national exams	
	Provide texts for libraries and student personal use	Recommen-dations for textbooks: professional bodies Detailed list of library needs Books Logistics chain	Fewer students repeat classes	Proportion of students repeating classes	Registration information
			Students increase knowledge of theoretical information	Usage of library books	Library records
				Internal examination grades	Internal (school) examinations
			Fewer students fail written portions of examinations	Proportion of students passing written portion of national exams	Records from professional bodies
Reduce student and referred graduate attrition due to economic barriers to attendance	Provide scholarships to pay for final-year students' tuition, fees, and hostel accommodation	Funds Registration information Logistic chain	Fewer students leave schools	Proportion of students who complete studies	Registration information
					Records of students presented to take examinations
			Fewer students defer studies for economic reasons	Proportion of students who complete studies within expected timeframe	Registration information
Increase the number of referred test takers passing national qualifying examinations	Provide tutoring based upon students' individual difficulties	Trainers Funds Detailed exam results Location	Higher proportion of referred test takers passing examinations on next attempt	Proportion of referred test takers passing examinations	Records from professional bodies
				Proportion of referred test takers attending tutoring sessions	Attendance sheets
Empower school admins and faculties to collaborate in	Provide networking opportunities for school officials in	Funds for logistics Contact	Administrators meet with those from other schools	Participation in networking event(s)	Attendance records

Goal	Activity	Inputs	Predicted outcome	Indicators	Mechanism to collect data
solving mutual issues	collaboration with Federal MOH and professional bodies	information for school officials List of meetings/ workshops to which opportunity could be appended	Collaborative problem solving	Collaborative plan(s) of action or partnership(s) created	Plan documentation or MOUs

APPENDIX E: LOGIC MODEL FOR LONG-TERM STRATEGIES

Goal	Activity*	Inputs	Predicted outcome	Indicators	Mechanism to collect data
Improve infrastructure at visited facilities	Suggest NGOs/ organizations with mandate related to infrastructure work with schools	Research Time Meetings	Schools interface with organizations capable of improving infrastructure	Connections made	Conversations with school administrators
					Conversations with partnering organizations
			Infrastructure-related projects begun with relevant organization	Partnerships formed	Conversations with partnering organizations
				Projects begun	Reported by school in final evaluation
Improve employment opportunities for highly trained health professional school graduates	Encourage uptake of qualified school graduates to fill open employment slots at government facilities	Research Meetings with Federal, State Ministries Commun-ications re: importance of proper staffing	Open opportunities filled by appropriately trained and qualified personnel in a timely manner	Open opportunities filled within 3 months of approval	Ministry and locality records
				Opportunities filled with fully qualified, appropriate staff	Ministry, locality, and facility records
	Encourage hiring of highly qualified school graduates by private organizations	Baseline utilization data Commun-ications re: importance of proper staffing Commun-ications re: importance to patient	Increase in opportunities for fully qualified health workers	Increased hiring of appropriately qualified personnel	Survey data, Professional bodies' records
			Decreased utilization of health workers without professional certification/ qualifications	Decreased hiring of inappropriately qualified or uncertified personnel	Survey data, professional bodies' records
			Increased demand for full qualifications of health workers by community	Calls by community members for higher-level staffing of facilities	Popular press and media
			Increased patient utilization of fully qualified health workers	Decreased utilization of facilities staffed by uncertified personnel	Facility utilization data
				Increased utilization of facilities staffed by fully certified	Facility utilization data

Goal	Activity*	Inputs	Predicted outcome	Indicators	Mechanism to collect data
				personnel	
Increased production of community health extension workers, junior community health extension workers, and midwives	Encourage professional bodies to lift caps to enrollment on schools with adequate facilities and faculty	Baseline survey of schools Meetings with professional bodies Research	Increased enrollment at schools of midwifery and health technology	Undifferentiated enrollment cap lifted for schools of midwifery	Policy and accreditation standards of NMCN
				Undifferentiated enrollment cap lifted for schools of health technology	Policy and accreditation standards of CHPB
				Increased enrollment in schools with adequate staffing and facilities	Survey of schools

* Strategies/activities beyond Capacity*Plus* timeframe or unrelated to PEPFAR indicators

Capacity*Plus* is the USAID-funded global project uniquely focused on the health workforce needed to achieve the Millennium Development Goals. Placing health workers at the center of every effort, Capacity*Plus* helps countries achieve significant progress in addressing the health worker crisis while also having global impact through alliances with multilateral organizations.

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