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A Comparison and Analysis of Community Midwifery Education Programs in Afghanistan with other Countries

Nematullah Niazi

University of Southern Maine, Muskie School of Public Service

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A COMPARISON AND ANALYSIS OF COMMUNITY MIDWIFERY EDUCATION PROGRAMS IN AFGHANISTAN WITH OTHER COUNTRIES

Nematullah Niazi

Capstone Project

Advisor: Andy Coburn, PhD

Second Reader: Elise Bolda, PhD

Graduate Program in Public Health

University of Southern Maine, Muskie School of Public Service

Acronyms

ANC	Antenatal care
AMA	Afghan Midwives Association
BPHS	Basic Package of Health services
BHC	Basic Health Center
BHU	Basic Health Unit
CME	Community Midwifery Education
CHC	Comprehensive Health Center
CMW	Community Midwife
CM	Community Midwife
EmONC	Emergency Obstetric and Newborn Care
HIS	Institute of Health Science
IMNC	Infant Illnesses and Integrated Management of Newborn Illnesses
MMR	Maternal Mortality Rate
MoPH	Ministry of Public Health
NAP	National Admission Policy
NUNEE	National University Entrance Examination
NMEAB	National Midwifery Education Accreditation
NGO	Non-Governmental Organization
PNC	Postnatal Care
PKR	Pakistani Rupee
PK	Pakistan
PPHD	Provincial Public Health Directorate
SBA	Skilled Birth Attendance
WHO	World Health Organization

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Executive Summary

Problem: In 2002 UNICEF and the U.S. Center for Disease Control (CDC) recognized Afghanistan as having one of the highest maternal mortality rates (MMR) in the world. To address this situation, in 2002 the Afghan government and international donors initiated the Community Midwifery Education Program (CME) to increase the number of midwives. It was an effective approach in reducing the MMR in the country as the maternal mortality rate dropped from 1,600 per 100,000 live births in 2002 to 400 in 2013.

Purpose: The purpose of this paper is to analyze and compare the Afghan Community Midwifery Education program with similar programs in other countries, to identify problems in CME implementation, and to develop recommendations to resolve gaps for a more effective and successful CME approach. To this end, the Afghan CME program is compared with midwifery programs in Pakistan, Kenya, and with Afghanistan's Institute of Health Science midwife program.

Findings: Afghanistan has 2 different midwife programs – the Community Midwifery Education (CME) program, started in 2002 and the older Institute of Health Sciences (IHS) program. Midwife education programs in Pakistan and Kenya are designed for shorter education and have country-specific deployment policies. There are core educational components and competencies shared by all of the programs as well as specific differences, and these are compared with European Union standards.

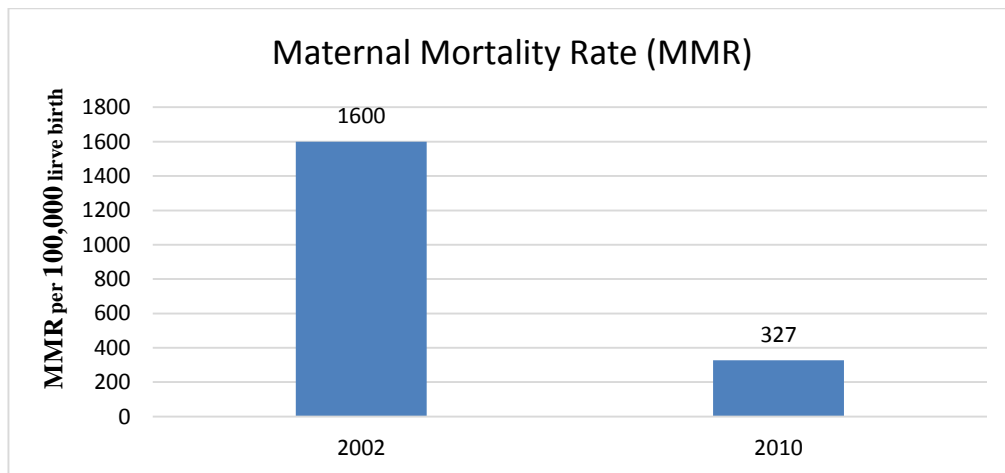
Community Midwifery Programs face many of the same challenges in these different countries including insufficient financial and clinical resources, security issues, poor support post-graduation, and accessibility problems. Cultural restrictions can sometimes prevent midwives from providing timely and high-quality health services for their clients.

Conclusion: Community based midwifery programs are one of the most effective ways to address problems of high MMR by educating, training and mobilizing midwives in communities to deliver urgent maternal and newborn health services. This approach has contributed to a reduction in the morbidity and mortality rates in the countries where it has been used. This paper also provides specific recommendations for each of the challenges confronting midwifery programs in these different countries.

Introduction and Background

More than three decades of war in Afghanistan (1978 – 2015) has destroyed the health infrastructure and impacted maternal health services across the country. In 2000, the estimated maternal mortality rate for Afghan women was the highest in the world due to poor access to emergency obstetrical services, lack of information regarding maternal health and safe deliveries, lack of female professional health providers, and a strong tendency and desire by women to only to receive health care from female health providers.¹ In 2000, Afghanistan's maternal mortality rate was the highest in the world at 1,800 deaths per 100,000 live births.¹ Community Midwife Education (CME) programs have increased the number of qualified midwives and the number of attended deliveries. The result has been a 40% reduction in maternal mortality to 1,273 per 100,000 births.² Mortality rate dropped further in 2010 (Table 1).

Table 1



Mohmand, K. Community Midwifery Education Program in Afghanistan. *Health*²

Maternal mortality rates (MMR) vary significantly across the country.³ In Kabul it is estimated at 400 death per 100,000 births where the access and quality of health services is high compared to other locations. In contrast, the MMR is estimated at 6,500 per 100,000 in the remote district of Badakhshan province in the north part of the country.⁴

According to the World Health Organization's recommendations, one midwife should be available to care for 175 women during their pregnancies.¹ Before 2005, there were only 467 trained midwives in Afghanistan for a population of 30 million people. According to that recommendation, Afghanistan should have had 4546 midwives for the total population.⁵

According to a study, 16 of the Basic Package of Health Services (BPHS) facilities had one midwife in 2003 and less than 10% of births were performed by Skilled Birth Attendants (SBA).² Lack of adequate maternal health services resulted in one Afghan woman losing her life from pregnancy-related causes every 30 minutes in 2003. After the CME program was implemented and community midwives deployed between 2002 and 2013, the maternal mortality rate was reduced as the direct result of increased skilled birth attendance.² In provinces where community midwives were deployed, increases in antenatal care (39%) and skilled birth attendance (62.3%) were observed.²

In 2002 the Ministry of Public Health (MoPH) decided to improve maternal health by addressing the shortage of female health providers and established health facilities such as clinics and hospitals across the country. The Ministry pursued a rapid mobilization of female health providers, particularly midwives in rural areas of the country, by starting *Community Midwifery Education* programs (CME) to help solve this supply and demand problem in the healthcare system. The CME program was one of the new educational strategies introduced in 2002 to quickly mobilize female health providers. It has experienced success as well as challenges in its implementation.²

This Capstone reviews the Afghan Community Midwifery Education programs and strategies in order to identify the gaps and implementation problems and develop recommendations for improvement to further reduce mortality rates of pregnant women and children. The paper reviews midwifery education standards established by the European (EU), and compares different national and international midwifery strategies and approaches including the Afghan Institute of Health Sciences, and the community midwifery programs of Kenya and Pakistan. These programs will be compared to identify effective and efficient ways of CME program implementation and to provide a basis for recommendations for the improvement of midwifery education and deployment for Afghanistan in particular and CME programs in general.

European Union Standards for Midwifery Programs

The European Union has developed standards for midwifery and nursing education programs that are acceptable within the EU member nations. The EU standards are presented in this paper for the purpose of establishing midwifery education standards in developed countries to help understand common elements and differences in educational needs between developed countries and the developing countries of Afghanistan, Pakistan and Kenya.

The European Union's standards for Midwifery Programs include the following principles and requirements:⁶

- Midwifery training programs consist of two types. A three-year program and an 18-month program. Both programs include theoretical and practical studies that are facilitated by the training institutions.
- Individuals who complete the first 10 years of school or those who possess nursing qualifications are eligible for midwifery training.
- Midwives should have the following skills and knowledge upon completion of the program:
 - Scientific knowledge and information on which midwifery services are substantiated with particular emphasis on obstetrics and gynecology as well as ethical and legislative knowledge of the profession;
 - Anatomical, physiological and biological knowledge of obstetrics and newborns along with adequate knowledge of human health status;
 - Clinical training experience in a certified health institution under the observation of qualified staff.
- The following midwife activities and skills should be confirmed by the institutions providing midwifery certification or evidence of qualification⁶. Midwives are expected to have the ability to:
 - Provide sound family planning information and advice;
 - To diagnosis pregnancies and monitor normal pregnancies, and carry out the necessary examinations to monitor the development of normal pregnancies;
 - A prescribe or advise on the examination necessary for the earliest possible diagnosis of pregnancies at risk;
 - Provide programs on preparing for parenthood and childbirth including advice on hygiene and nutrition;
 - Care for and assisting the mother during labor and monitor the condition of the fetus in utero using appropriate clinical and technical methods;
 - Conduct spontaneous deliveries including use of episiotomies when required, and breech deliveries in urgent cases;
 - Recognize the warning signs for abnormalities in the mother or infant which require referral to a doctor and provide assistance to the doctor where appropriate;

- To provide necessary emergency measures if a doctor is not available including the manual removal of the placenta, and manual examination of the uterus;
- Examination and care for new-born infants and to implement all necessary initiatives including immediate resuscitation if required;
- Monitor the progress of the mother during the post-natal period and provide essential care that may be required;
- Provide all necessary advice on infant care to the mother;
- Ensure optimal progress of the new-born infant;
- Implement and carry out treatments prescribed by doctors; and
- Fill out and complete required reports.

EU Midwifery Program Curriculum Standards.⁶

#	General subjects	Subjects specific to the activities of midwives
1	Basic anatomy and physiology	Basic pharmacology
2	Basic pathology	Psychology
3	Basic bacteriology, virology and parasitology	Principles and methods of teaching
3	Basic biophysics, biochemistry and Radiology	Health and social legislation and health organization
4	Pediatrics, with particular emphasis new-born infants	Professional ethics and professional legislation
5	Hygiene, health education, preventive medicine, early diagnosis of diseases	Sex education and family planning
6	Nutrition and dietetics, with particular emphasis on women, new-born and young babies	Legal protection for mothers and infants
7	Anatomy and physiology	Analgesia, anesthesia and resuscitation
8	Embryology and development of the fetus	Physiology and pathology of the newborn infant
9	Pregnancy, childbirth and puerperium	Care and supervision of the new-born infant
10	Gynecological and obstetrical pathology	Psychological and social factors
11	Preparation for childbirth and parenthood, including psychological aspects	
12	Preparation for delivery (including knowledge and use of technical equipment in obstetrics)	
13	Basic sociology and socio-medical questions	

EU Practical and Clinical Training Standards

Training should be provided and conducted under appropriate supervision and include the following elements:⁶

- Conduct at least 100 pre-natal exams and provide appropriate advice to the pregnant women;
- Supervise and care for at least 40 pregnant women;
- Conduct at least 40 supervised deliveries. If this number cannot be reached before program completion, it may be reduced to 30, provided that the student then assists with 20 further deliveries;
- Active participation in breech deliveries. Simulations can be substituted for practice if real breech deliveries are not available;
- Performance of episiotomy and suturing including theoretical instruction and clinical practice. Suturing instruction should include suturing of the wound following an episiotomy and repair of simple perineal lacerations. This may be done as simulations if absolutely necessary;
- Supervision and care of 40 women at risk in pregnancy, during labor or in the post-natal period;
- Examination, supervision, and care of at least 100 post-natal women and healthy newborn infants
- Observation and care of new-born infants requiring special care, including premature births, and post-term infants who are ill or underweight;
- Care of women with pathological gynecological or obstetrical conditions; and
- Basic introduction to the gynecological and obstetrical medicine and surgery including theoretical instruction and clinical practice.

COMMUNITY MIDWIFERY EDUCATION PROGRAM IN AFGHANISTAN (CME)

Summary: Afghanistan had few academic institutions to train midwives in the country in 2002, and the MMR rate was ranked the second highest in the world. Many factors including war, lack of professional health capacity, particularly midwives, a culture of Afghan women seeking health services from female health providers, and lack of access to health services contributed to the high MMR in Afghanistan. To decrease the MMR rate and improve access to maternal health services, the Afghanistan Ministry of Public Health, in collaboration with international donors,

started a 24 month long community midwifery education programs (CME), in addition to the three year program that already existed in six provinces through the IHS (Institute of Health Sciences), to resolve the shortage of female health providers.

The MMR in Afghanistan dropped from 1600 in 2002 to 327 in 2010. The CME program is a key factor in this reduction¹. Another intervention that occurred during this time period was the introduction of BPHS (Basic Package of Health Services) to increase access to health care. Community midwives provide care through BHCs (Basic Health Center) and Comprehensive Health Center (CHCs), which are part of the BPHS program. However, the Program faced challenges during and after its implementation. Insecurity, low salaries, poor quality of life in remote areas, and lack of transportation were the major difficulties facing the newly trained midwives and the health facilities they serve.

Background: Community Midwifery Education programs have been designed and implemented to address the shortage of female health providers within the Afghan healthcare system. These are not Midwifery Schools. They are academic programs implemented based on community needs and then terminated once the demands or needs are resolved. CME is a 24-month training program instead of the traditional 3 years. This program seeks and recruits candidates who are from the regions where the delivery of child and maternal services is inadequate. The expectation is that candidates will return to their own communities once they graduate to fulfill the health service delivery system's needs since they are selected from those communities that need to be served.² They are required to provide commitment letters from their family and community that demonstrate their community ties and to provide service to those communities after graduation.

Midwife: A woman who graduates from one of the Institute of Health Science (IHS) campuses and then is deployed to a hospital or comprehensive health center.

Community Midwife: A woman who graduates from one of the recognized CME programs and then is deployed to a basic or comprehensive health center, most commonly to her own community.

There are challenges facing Community Midwives once they complete their education. According to one study, marriage, lack of proper living amenities, lack of position at clinics, insecurity and family disagreements were significant factors that contributed to CMs leaving

their deployment site.² Other factors include distance to clinics, and the need for *Mahram* (the requirement for a male relative such as brother, father, or husband who is religiously and culturally identified to accompany the midwife for her daily work), and whether the midwife has children of her own, also influence midwife retention rates.

Design and Implementation: The CME 24-month education program is designed on a competency-based model to let the student learn with one phase of pre-clinical modules and three phases of clinically-based practice. The program’s curriculum is designed to develop the trainee’s knowledge and clinical skills to deliver maternal and newborn health services in a proper way. In addition, the ability to manage complications during pregnancy and childbirth for women is emphasized, as well as care for newborn infants. The program includes both theoretical and practical clinical training of the midwives and their deployment to the clinical sites where health service gaps have been identified. The Community Midwifery Program has five standards that must be assessed and met for the program to be accredited, including:

- i. Classroom and Practical Instruction
- ii. Clinical Instruction and Practice
- iii. School Infrastructure, Curriculum and Training Materials
- iv. School Management
- v. Clinical locations where midwife students receive clinical training experience

These five standards are key and represent the fundamental assessment elements through which the program receives its accreditation. Accreditation goes through certain steps including binding and non-binding assessments. Accreditation of programs is repeated every two years. Following are the accreditation status specifications.

Table 2

Program Status	% Achievement of Standards	Time Frame
Full Accreditation	≥85%	Renewal every 2 years
Provisional Accreditation	75 - 84%	Reassessment in 1 year
Probation	65 - 74%	Reassessment in 6 months
Suspension	<65%	Close in 3 months

1. Goal of the program:

To provide a framework for midwifery programs to educate, select and deploy midwives in the country.

2. Deployment:

After completion of the program, students will be deployed to the health care center in their communities. This process is planned at the time of the program launch.

3. Education:

It is a competency-based education program. The school and clinical sites where students learn and practice their program should have the quality resources required to equip students with the knowledge, skill, competencies that are necessary for saving lives. The educational program is implemented according to Afghanistan National Education Standards.

4. Student Admission:

Students are admitted to the program based on entrance exams and existing National Admission policies. A contract to obey the rules and regulations of the program will be mutually signed by student, parent, and the school officials.

5. Recruitment:

Recruitment is done based on a community need assessment conducted by the Ministry of Public Health or by Donors. Students are recruited to the program from those areas where a shortage of midwives has been identified; mostly from remote areas in the provinces. A selection committee is established at the onset of the program that may include local and national health representatives directed by the provincial human resources directorate.

6. Competencies: CME programs expect students to master major competencies such as

1. Competency in social, epidemiologic and cultural context of maternal and newborn health;
2. Competency in pre-pregnancy care and family planning;
3. Competency in care and counseling during pregnancy;
4. Competency in care during labor and birth;
5. Competency for care for women in postpartum period;
6. Competency in care of newborns and young children;

7. Competency in promoting health in the community.

According to standards, each student is expected to conduct 25 deliveries during the program under the supervision of the preceptors².

1. Program Modules:

The two-year Afghan CME program is divided into three phases and a total of 36 specific topic modules. During the first phase, 15 modules are covered. Classroom activities, simulated practice of clinical skill and short period of supervised practices at clinical sites are also included during the first phase of the program. An assessment occurs at the end of the first phase, then a break of three weeks is scheduled between Phase 1 and Phase 2. Phase 2 includes modules 16 to 26 that last 32 weeks, and Phase Three reviews the clinical modules of the first and second phase in addition to the new modules 27 to 36.

COMPARING AFGHANISTAN CME AND INSTITUTE OF HEALTH SCIENCES (IHS) PROGRAMS

Summary: Institution of Health Science (IHS) is a government academic institution that was working in six of Afghanistan's 34 provinces prior to the introduction of the CME program. The IHS was providing a 3 year training program for midwives, but the MMR remained high.

Background: Midwifery schools (IHS) and CME midwifery programs are almost the same⁷. According to one study, they have 95% similar content, competencies, and requirements. Both share the same academic content, and the midwives have the same competencies for their own profession such as performing vacuum aspiration, placenta removal, and vacuum-assisted deliveries. However, there are some differences as indicated below.⁸

Differences between Community Midwives and IHS-Trained Midwives

#	Community Midwife Program	Midwifery School (IHS)
1	Practices in BHCs, CHCs with outreach in rural areas.	Practice in Hospitals and CHCs
2	Minimum age 18 years old	Not specific
3	Married and preferably with children	Not specific
4	Chosen by community and expected to return to presumed community to serve	No restrictions and not selected by community
5	Candidates must take entrance exam and should have completed 10th grade	Candidates should take the entrance exam and should be graduated from 12th grade

A study was conducted to compare the deployment rate and the quality of the midwives who were selected by different selection processes and approaches such as students selected based on the National University Entrance Examination (UNEE), IHS exam, and those students selected by local communities. Students selected by the IHS entrance exam were mostly high school graduates and were required to go to urban areas. Students selected by the UNEE exam were all high school graduates and were not required to go to urban areas to provide services. Of the total

number of students enrolled in the program, 39% were selected by IHS, 28% by community mobilization, and 33% were enrolled based on the UNEE process.³

The results of this study showed that the program pass rate of midwives was similar regardless of whether they had completed the 12th grade or not. However, married students had lower pass rates and scores than single students. The performance of students selected by community mobilization methods was more consistent than those selected by other methods. The subsequent deployment rates were higher for midwife students recruited by communities - estimated at 96%, compared to 74% for IHS and 82% for NUUE (National University Entrance Exam).³

Another study compared the cost and quality of performance between Community Midwifery Education programs and IHS graduates. This study focused on midwifery school graduates between 2008-2010.⁴ The result of the investigation was that CME graduates had higher competency scores: 63.2% versus graduates from IHS, who averaged a 57% score. Over 90% of the CME graduates were deployed, while the average deployment for IHS midwives was lower.⁴

These comparisons indicate that the CME program is the more effective program for expanding maternal and child health services with a better quality and with a higher deployment level in the communities. The mean education cost per graduated midwife was \$10,784. The cost of the CME program is higher than that of the government funded IHS midwifery program as indicated in table 2.

Table 2 Estimated average costs per enrollee, graduate, midwife deployed, and group of graduates, by school type

School type	Per Enrollee	Per Graduate	Per Midwife Deployed
CME	\$11,922	\$12,201	\$13,659
IHS	\$5256	\$5474	\$7687
Overall	\$10,322	\$10,784	\$12,332

Zainullah, P. et al Establishing midwifery in low-resource settings: Guidance from a mixed-methods evaluation of the Afghanistan midwifery education program.⁴

The cost of CME education is higher because these programs are mostly implemented by non-governmental organizations (NGOs). Non-governmental organizations pay higher salaries than government, provide more extensive facilities, and have higher overhead costs than government programs. If the same program were implemented by a public institution such as the IHS, the

cost would automatically drop and the program will be more sustainable since the program would not depend on external donors that pay at higher rate. Non-governmental organizations implement the programs based on funds from external donors and when the donors stop funding the programs may not continue.

Challenges facing Afghan Midwifery Programs:

According to the CME program design, students are deployed into public health facilities, particularly BPHS health centers such as Comprehensive health centers (CHCs) and Basic health Centers (BHCs).⁷ There have been concerns about the poor retention of midwives after deployment to the health centers according to some studies. Some studies indicate there are additional factors that may influence the retention of CME midwives:⁷



Source: Mohamad, K. Community Midwifery Education Program in Afghanistan.²

- **Selection of students:** Sometimes powerful people in regions put pressure on the enrollment committee to accept certain candidates even if they are not from the right area, or are not the best qualified. This negatively impacts the appropriate selection of students.
- **Salaries:** Some midwives complain that they are not able to travel to remote areas without Mahram. In those situations requiring Mahram, it increases costs, and the demand for salaries. Public sector salaries are always lower than private, which encourages midwives to look for other job opportunities where they can obtain higher salaries.

- **Further educational opportunities:** Some midwives obtain additional education and career opportunities that make them choose to leave the site.
- **Transportation:** Midwives are provided daily transportation to the school while they are studying, but not for work, so that creates difficulties for them.
- **Insufficient clinical resources:** Lack of equipment and clinical resources discourage midwives from continuing in the health facilities and even the profession.
- **Insecurity:** Physical insecurity has also been one of the burdens for program assessors since they are not able to travel and conduct assessments.² Assessing the program is a key step for the program accreditation so that midwives will be allowed to practice.
- **Poor quality of life in remote areas:** In remote areas, water, sanitation, electricity, phone coverage, availability of high quality schools for children, transportation, roads and distance from bazar or markets makes life harder for midwives to stay in the communities.
- **Lack of job vacancies:** Sometimes, the pre-assigned vacant position is already filled before the midwife has graduated, and there is not an available clinical position.
- **Attitude of medical colleagues:** Sometimes competition between doctors and midwives emerges as a perception that the midwives have gained new skills for delivering maternal health services, and this can be interpreted as a threat by doctors.

Community Midwifery Program in Pakistan

Summary: Maternal mortality rates in Pakistan were high and estimated at 533 per 100,000 births in 1993. Health institutions implemented community based midwifery programs to reduce the MMR rate and increase access to maternal health services. The program started in 2006 and showed a positive impact in MMR reduction. Pakistan's MMR rate dropped to 260 per 100,000 births in 2008. Community midwifery programs cannot be considered as the only unique factors that impacts the MMR rate but can be an important element. Similar to Afghanistan, the program had its own challenges during and after implementation. The problems include lack of equipment, inadequate financial and logistical support, and lack of support from other community-based health workers.

Background: The Government of Pakistan established the Community Midwife Program (CMW) in 2006 to improve the number of skilled birth attendants and reduce maternal and infant mortality rates. Since 1993, maternal mortality rates in Pakistan dropped from 553 deaths per

100,000 live births in 1993 to 260 in 2008. Nearly 39% of births take place with skilled birth attendants and 34% of births take place in health facilities.⁹The ratio of Community Midwives (CMWs) in Pakistan is estimated at 1 per 5000-10,000 population.¹⁰

Design and Implementation: The Pakistan CME is an eighteen-month education program that trains female health providers from rural areas of the country. As in Afghanistan, they are expected to return and serve those communities from which they selected.¹¹ The program is divided into two major educational components: 25% theoretical (612 hours), and 75% practical training study (1,836 hours) for a total of 2,448 hours. It is divided into 6 quarters and includes 3 weeks of annual leave and 3 weeks of exam preparations.¹¹ The Pakistan approach to community midwifery is different than Afghanistan's. In Pakistan, midwives establish Delivery Stations rather than working in CHCs or hospitals. The delivery station is usually located at the house of the midwife near the entrance door. In specific situations, or for complications, the midwives refer their patients to other centers.¹⁰

Goal of the program: to reduce mortality rates for mothers and children and improve their health.

List of CME Education Modules Comparing Afghanistan and Pakistan

The chart below indicates that the Afghan midwifery program includes total 35 modules classified under three major topic areas: Pregnancy and Child Birth, Pregnancy and Delivery Complications, and Family Planning with other RH (Reproductive Health) topics. Each of the three topic areas is covered within 32 weeks in three different phases during the total 24 months of the program. The Pakistan midwifery program has the same number of modules, but organized under 7 major topic areas that are covered during an 18-month program. The overall content of the two programs ultimately are similar and are designed for midwives to obtain standard competencies.

There are some differences between the Afghan and Pakistan programs. The Pakistan midwifery program does not cover HIV/STD, Basic Epidemiology and Surveillance, Supervision and Partnership or Mental Health during pregnancy, which are included in the Afghanistan program. Conversely, the Pakistan midwifery program does cover professional and ethical regulation, legislation and framework, evidence-based decision making, quality of care, and pregnancies with diabetes mellitus modules, which are not present in Afghanistan's program.

Modules

Afghan CME Curriculum		Pakistan CME Curriculum
#	Phase 1: Introductory Topics and Normal Pregnancy and Child birth care(32 Weeks)	
1	Module 1: Orientation	Module 1.1: Health and MNCH Situation
2	Module 2: The Role of the Community Midwife	Module 1.2: Safe Motherhood, Pakistan's Health Systems and MNCH Services
3	Module 3; Health Care in Afghanistan	Module 1.3: Community, Midwifery and Midwives Roles and Responsibilities
4	Interpersonal Communication Counseling's and Behavior Change Communication.	Module 1.4: Introduction to the Course
4	Module 5: Basic Nutrition	Module 2.1: Body Parts and Functions
5	Module 6: Basic Anatomy and Physiology	Module 2.2: Drugs Related to Community Midwifery
6	Module 7: Changes and Adaptation in Pregnancy	Module 2.3: Infection Prevention
7	Module 8: Foundation of Basic Maternal and Newborn Care	Module 2.4: Individual and Community Health Assessment
8	Module 9: Infection prevention	Module 2.5: Community-Based First Level Midwifery Care Including First Aid
9	Module 10: Ante-natal Care	Module 2.6: Information and its Use
10	Module 11: Childbirth Care	Module 2.7: Health Education and Communication
11	Module 12: Newborn Care	Module 3.1: Human Reproduction
12	Module 13 Postpartum Care	Module 3.2: Nutrition of Women
13	Module 14: Pharmacology	Module 3.3: Preparedness for Pregnancy and Infertility
14	Module 15: English language	Module 3.4: Physiological and Emotional Changes during Pregnancy
15	Phase 2 : Complication of Pregnancy and childbirth	Module 3.5: Antenatal Care (ANC)
16	Module 16: Vaginal Bleeding in Pregnancy and Labor	Module 3.6: Birth Preparedness and Emergency Planning
17	Module 17: Vaginal Bleeding After Childbirth	Module 3.7: Bleeding in Pregnancy
18	Module 18: Headaches, Blurred Vision, Convulsions or Loss of Consciousness, Elevated Blood Pressure	Module 3.8: Hypertensive Disorders of Pregnancy
19	Module 19: Unsatisfactory Progress in Labor	Module 3.9: Pregnancy with Infections
20	Module 20: Malpositions and Malpresentations	Module 3.10: Pregnancy with Diabetes Mellitus
21	Module 21: Shoulder Dystocia	Module 4.1: Principles of Care during Labor and Birth
22	Module 22: Labor With an Over Distended or Scarred Uterus	Module 4.2: Physiology and Management of First Stage of Labor
23	Module 23: Fetal Distress in Labor and Prolapsed Cord	Module 4.3: Physiology and Management of Second Stage of Labor
24	Module 24: Fever during Pregnancy and Labor and After Childbirth	Module 4.4: Physiology and Management of Third Stage of Labor
25	Module 25: Other Complications in Pregnancy and Childbirth	Module 4.5: Prolong and Obstructed Labor
26	Module 26: Managing Newborn Problems	Module 4.6: Post-Partum Hemorrhage
27	Phase 3: Family Planning and Other RH Topics (32 weeks)	Module 5.1: Physiology and Requirements of Newborn
28	Module 27: Family Planning	Module 5.2: Essentials of Newborn Care
29	Module 28: Other Reproductive Health Topics	Module 5.3: Breast Feeding and Lactation Management
30	Module 29: STIs and HIV/AIDS	Module 5.4: Feeding Difficulties and Disorders
31	Module 30: Mental Health	Module 5.5: Development in the First Year
32	Module 31: Care of the Young Child	Module 5.5: Major Infant Illnesses and Integrated Management of Newborn Illnesses (IMNCI)
33	Module 32: Supervision and Partnership	Module 6.1: Physiological and Emotional Changes during Puerperium
34	Module 33: Professional Issues in Midwifery	Module 6.2: Post Natal Care (PNC)
35	Module 34: Health Service management	Module 6.3: Birth Spacing and Post-Abortion Care
36	Module 35: Basic epidemiology & surveillance	Module 7.1: Professional and ethical Regulation, Legislation and Framework
		Module 7.2: Evidence-Based Decision Making
		Module 7.3: Quality of Care

Standards for Selection of Candidates: selection criteria include the following:

1. Female, preferably married;
2. Permanent resident of the area;
3. Minimum matriculation with at least a 45% mark on the entrance exam, preferably with science subjects;
4. Age: 18-35 years;
5. Previous Work Experience: Work experience in community will have added value.

Competencies: The following are the standard competencies for the Pakistan CME¹¹

1. Competency in Social, Epidemiologic and Cultural Context of Maternal and Newborn Care;
2. Competency in Pre-Pregnancy Care;
3. Competency in Provision of Care during Pregnancy;
4. Competency in Provision of Care During Labour and Birth;
5. Competency in Provision of Care for Women during the Postpartum Period;
6. Competency in Postnatal Care of the Newborn;
7. Competency in Facilitation of Birth Spacing and Post-Abortion Care.

Problems during and after CME training: Research on the CME program in Pakistan found a lack of professional trainers, inadequate equipment for training, and inappropriate hostels (housing) were some of the problems that students encountered during the training program.⁹ Students did not receive adequate orientation about the program, particularly about their roles and responsibilities post-graduation or about deployments into health facilities. As a result, they learned about some of the CME expectations only after they were recruited into the program such as that they were expected to serve a Basic Health Unit for a year without any payment. In 2010, a stipend of 2000PKR/ per month was initiated in response to this problem. Other challenges and problems facing midwives include lack of public transportation to reach all of the coverage areas, which required midwives to use other types of transport such as van, car, and motorbike in addition to walking in some area.⁷ Equipment, family planning supplies, and medicines were inadequately supplied to deliver sufficient health services to their clients. Midwives were also not given anesthetics or sutures for stitching tears or cuts.⁹ And finally, the monthly stipend provided to midwives was not sufficient as they were using the stipend to purchase the medicine required to deliver their services and at times the payment of the stipend was delayed.

Community midwives are faced with a wide array of problems from training start-up issues, to the community resources where they provide health services. The problems include a lack of equipment, inadequate financial and logistical support, and lack of support from other community based health workers.

CMW program problems in the field: Community midwives were required to sign a commitment for three years of service delivery upon completion of the program and their diplomas were held in escrow for the duration of that time.⁹ This put Community Midwives under pressure as they were not able to obtain employment with other health entities to earn additional income, and at the same time they were from poor and rural families. Financial insufficiency was a major burden for CMs. This burden became more serious when they needed a family member to accompany them while traveling distances for service deliveries. This usually increased their cost. Lack of transportation for referral cases undermined the CM's professional performance.

Uncooperative and perverse community attitudes: One of the problems CMs experienced is that many communities had anti-social responses to their work.⁹ A common perception was, that midwives should be married and that midwives who are single cannot provide services or discuss pregnancy with women. To address this, the midwife may have women who are married such as their sister or mother accompany them for their work. To some extent this has been effective. Some of the families thought that midwives might bring evil spirits, and so to prevent harming the woman and their baby, the family would not allow the CM to enter their house. CMs were faced with abusive attitudes and harassment within communities where they provided health services.⁹ This experience even existed in the training stage of the program. Such behavior was demotivating to the CMs.

Retention Incentives for CMs: One of the important problems facing the Pakistan midwifery program was that trained CMWs joined with for-profit organizations because of higher salary opportunities. To solve this problem, Pakistan initiated policies that pay CMs 2000 PKRs per month immediately after they are deployed.⁶ This strategy helps both sides. It helps make the midwives be more responsible and accountable while increasing services to the target population. A referral allowance in the amount of PKRs 500 was also provided for each referral along with transportation costs and other expenses. This happens in the case of emergencies when the CMs accompany the patients to health facilities. Appreciation awards are also provided

each year in the amount of PKs 5000. This award is paid to the best performer for the year for each district.¹⁰

Monetary Incentives	Non- Monetary Incentives
Fixed stipend CMW should receive PKR 200 per months as a retainer fee	Provision of safe delivery kits and Supplies
CMW should be given an allowance of PKR 500 for each referral plus reimbursement of travel expense	Refresher courses
Appreciation award for best performance	
User charges of 500 PKR for normal delivery	

MIDWIFERY PROGRAM IN KENYA

Summary: Among developing countries, Kenya's maternal mortality rates are high at 488 per 100,000 live births. Lack of professional health providers, particularly doctors, midwives, low utilization of skilled providers during pregnancy, childbirth, and the postnatal period, and limited provision of basic emergency obstetric and newborn care are factors contributing to high mortality rates in Kenya.¹² The total number of doctors serving the country is 5000, with 4,813 enrolled nurses (out of 30,212 registered) for a total population of 40 million people¹²

Background: Similar to Afghanistan, the government created a strategy to fill the gaps and initiated a community midwifery program in 2005. The purpose of the program was to increase the access to skilled birth attendance and improve the maternal health services in the country. Since many of the women in Kenya prefer to birth at home, this module helps midwives deliver maternal health services in the home. In this module, delivery should be conducted at the home of patients but recent research indicated that the number of deliveries at midwives' home has increased due to lack of privacy and inadequate space in patients' homes.

Design and Implementation: With this program, pregnant women are provided care by midwives within their communities, and referred to EmONC (Emergency Obstetric and Newborn Care Centers) in the case of emergencies. Midwives are also connected to existing health facilities within their own communities to get local assistance in the case of complications. The midwives are provided birth kits to assist with deliveries in the client's home or more likely at the midwife's home.¹² Clients pay the midwives in a variety of ways including cash or by giving them cloth, soap, or even working on the midwife's farm.¹²

Challenges and Opportunities of Kenya CMs:

The Kenya Midwifery program has challenges similar to those faced by other CM programs in the world. These include lack of availability of drugs, equipment and supplies, lack of transportation for referrals, long distances and bad roads, limited funding, inadequate remunerations, lack of supportive supervision, heavy workloads, high cost of registration fees, insecurity, and lack of refresher trainings.¹²

Opportunities within the Kenya CM Program:

- **Culturally acceptable interventions:** One of the most important and interesting cultural elements is that, people in some parts of Kenya want their first birth to happen at home and to have a role in the disposal of the placenta. The Community midwifery program provides skilled birth attendance and facilitates this opportunity to deliver services at the home of the client so that pregnant women can give birth at home, get support from their family, and perform the birth according to their own cultural values. This is different than the experience in Pakistan when CMs were introduced.
- **Deployment in own communities:** One of the selection criteria was that CM be from the community in which she will serve since they will be able better to understand the local customs. CMs write their phone numbers on their doors, and give their contact information to their community and clients which is an important and contributing step towards improving access to community midwives and health services.
- **Capacity building of CMs:** Refresher and other supportive training facilitated by donor and government improve CMs` skills and knowledge to provide better and high-quality services to their clients.
- **Support from governmental and non-governmental organizations (NGOs):** CMs are supported by governmental and non-governmental organizations through providing delivery kits, supplies and family planning commodities, and autoclaves. This is free or at a lower cost.
- **Recognition within the community and self-actualization:** Community midwives have been appreciated and welcomed by their communities.¹² They are well recognized and governmental and non-governmental organizations come to visit them. Community members give them gifts and work on their farms. Some clients pay them cash for their services, and others provide alternate forms payment or provide work.

Challenges:

- **Lack of availability of drugs, basic equipment and supplies:** There have been shortages and restrictions of drugs and other necessary supplies, such as renovation of the midwifery kits, lack of storage and unauthorized use of Magnesium Sulphate (used to prevent eclampsia) which is a substantial need for saving lives of pregnant women at the community level.
- **Lack of transportation for referrals:** Transportation and referral of clients to health facilities has been tremendously problematic due to lack and affordability of transport and the low quality of roads. Most of the time CMs move by donkeys and use wheelbarrows, sometimes even in emergency situation.
- **Limited funding for Community Midwifery Programs:** Lack of funding and inadequate support from NGOs has caused poor implementation of some projects and has led to low quality of services provided by midwives because birth kits and medical supplies were not properly supported.
- **Remuneration:** There have been complaints and concerns regarding the financial burdens experienced by the midwives. CMs expect government to pay them but if it is not possible, they recommend alternatives. They ask for payment by the families of the client in cases when the government does not pay. The payment system and expectations requires clarification.
- **Heavy work load:** One of the concerns CMs face are higher workloads, as some have abandoned their midwifery work for other jobs such as farming.
- **Lack of supportive supervision for CMs:** There have been complaints from CMs that they are not regularly supervised due to lack of logistics.
- **High cost of registration fees paid to regulatory bodies:** CMs are required to register with the Kenya Nursing and Midwifery Council to be allowed to practice. If they are not registered prior to starting practice, this will lead to withholding of licenses. Each midwife is required to pay 10,000 Ksh each year to the nursing council.
- **Insecurity:** Lack of physical security is one of the major problems and challenges for the CMs. However, communities have agreed to provide midwives with an escort to provide health services. Complaints still are received that it didn't work in all areas and sometimes the escorts were not provided. Thus, in some areas it is not possible to travel far for their client because of the danger of being raped or attacked.

- **Lack of refresher training:** Lack of refresher training was one of the complaints recorded by CMs.

COMPARING MIDWIFERY PROGRAMS IN AFGHANISTAN AND PAKISTAN AGAINST EU STANDARDS

- **Differences between Afghanistan CME and EU Midwife Education standards:** The Afghan CME program seems to be aligned with the EU midwifery standards but there are some differences. The CME program does not include basic sciences: biophysics, biochemistry; radiology or legal protection for mothers and infants in the educational curriculum. These can be an important part of theoretical knowledge and skills. It could be better to add these topics into the program.

The EU standards indicate 40 supervised deliveries should be conducted by midwifery students during the training period but the Afghan CME program recommends students to conduct 25 deliveries during the course of training. The EU standards require completion of the first 10 years of the school to be eligible for the midwifery program but that requirement is not often met in Afghanistan due to lack of educated women in some areas and the fact that this is a high education requirement. There is quite a bit of flexibility in Afghan CME admission requirements (completion of 8th class, completion of 12th class) which may reflect educational opportunities and standards in different parts of the country.

- **Variance with EU standards: Pakistan Midwifery vs EU standards:** Pakistan midwifery program is designed for 18 month as the EU midwifery standards recommend. This 18 month program contains most of the EU standards recommended for midwifery programs. There are some differences between the EU standards and the 18 months midwifery program in Pakistan. Age is not restricted in EU standards for enrollment in the program, while in Pakistan the age eligibility criteria for enrollment is 18-35 years. It is not been mentioned in EU standards if there is any entrance exam while eligibility for the Pakistan program is to obtain 45% score of the entrance exam. There are some differences in curriculum as well. The Pakistan midwifery curriculum doesn't contain basic biophysics, biochemistry, radiology or legal protection for mothers and infants subjects while it is recommended by EU standards.

DISCUSSIONS AND RECOMMENDATIONS FOR MIDWIFERY PROGRAMS

- **Selection of Students:** The best way to minimize fraud and corruption in the student selection process in CME and to ensure the best person is selected for enrollment in the program is to divide the selection process into two parts. The first step should be conducted by regional selection committee as is currently the case. The second step should be a review of the selected student by Ministry of Higher Education in collaboration with Afghan Midwives Association (AMA) and Afghan Midwifery National Accreditation Board (AMNAB) and Department of Labor at Ministry of Public health (MoPH). This might be a longer process, but it will eventually help to select the best candidates for the program.
- **Salaries:** The national salary policy has to be updated according to the demand and need for female health providers. There should be an increase in the salary scale for midwives working in remote areas where there are greater needs for more midwives. To better sustain remuneration for the midwives in the community, the government could provide a monthly salary, as is done in the Pakistan midwifery program. In addition, the BPHS(Basic Package of Health Services) implementer could pay midwives, or alternatively Afghan CMs could be allowed to charge their clients a minimum fee amount for the services they provide.
- **Further educational opportunities:** Providing additional education for midwives such as an advanced Certificate program, or other types of education, will increase their knowledge and professional capacity however this may have a negative effect on the deployment rate and the efforts to retain midwives at their deployed sites. As some of the midwives currently leave their station for additional education, this leads to a shortfall. To solve the problem is to create an agreement signed between the midwives and the program in order to serve the region for a defined period of time before leaving for additional education.
- **Transportation:** The correct selection of students for the program may help to reduce the transportation burden. A midwife selected from a different area than the community she is deployed to will likely need transportation since she will be not from the community where the health facility is located. In addition, increasing the monthly salary or fee allowances may also help to solve this problem to some extent.
- **Insecurity:** The Community Health Shurah (group of people observing health services delivery at the community level), and community Mullah (religious leader) can be a great bridge between the government and opposition to gain approval from both sides to help

protect the health provider serving their community. In Kenya, communities provide escorts to protect midwives. The same approach could also be applied in Afghanistan and the PPHD (Provincial Public Health Department) could get a commitment from the community to protect the midwife serving their region.

- **Poor quality of life in remote areas:** Providing living quarters around the health facilities for midwives will solve most of this problem. The midwife will not need transportation, will feel safer and secure, and the quality of life could be better than being in a village. In the short run this might be a costly approach but it could increase retention and help to solve the shortage of midwives.
- **Attitude of medical colleagues:** Unfortunately, this is a social problem rather than a professional problem. Increasing understanding of the respective professions, educating about ethics and respective responsibilities, and imposing specific regulations to avoid interfering each other's work and authorities, can help reduce the intensity of the problem.
- **Uncooperative and perverse community attitudes:** A specific and defined approach advocating the importance of maternal health services should be conducted. Community religious and political leaders, mosques, and schools can all play important roles to improve public awareness about maternal health services from religious and cultural perspectives. Community attitudes will change as the information is improved.
- **Lack of transportation for referrals:** If the government and international NGOs can't help solve this problem, another alternative option could be community wide participation to recruit transportation for pregnant women and midwives. Wider participation could help to make it affordable since the cost will be distributed among all families in the community.
- **Heavy work load:** The job description for midwives needs to be updated in accordance with standards in midwifery programs aligned with other developing countries.
- **High cost of registration fees paid to regulatory bodies:** Dropping registration fees from the registration policy could help retain midwives in their profession and reduce the national shortage of midwives.
- **Extension of the program:** An effective approach is to expand and stabilize the midwifery training program across the country. The responsible entities such as MoPH, PPHD (Provincial Public Health Directorate), donors, NGOs need to substantiate strategies for increasing number of midwives by establishing Community Midwifery Training Centers in each province. Once midwives are deployed, providing oversight and additional training

opportunities by BPHS implementers or other organizations such as the Afghan Midwifery Association (AMA) and PPHDs, will be good initiatives to improve midwife retention and enhance the capacity and quality of midwifery services.

CONCLUSION

CMEs, particularly those focused on community-based midwives are one of the most successful programs for reducing maternal mortality rates in developing countries. These programs have improved access to Antenatal Care, Postnatal Care and increased maternal health education. It has also been documented that providing maternal health care by midwives is one of the most culturally appropriate programs that can be accepted by communities that have religious and cultural restrictions. There are different types of midwifery programs such as the program conducted by Afghanistan IHS, CME, and the programs found in Pakistan and Kenya. Each has had positive impacts in reducing on MMR and improving access to health services.

It may be argued that midwifery programs in Pakistan and Kenya could be more effective than that found in Afghanistan in improving the access to maternal health services because the approach in those two countries involves delivering health services at the client's home which make it more accessible and affordable, particularly in poorer communities. The quality of the CME program versus midwives graduated from IHS was higher despite the fact that the IHS program was cost effective but both Afghan programs are improving access to higher quality health care and accomplishing the goal of reducing maternal mortality rates.

In addition to this success, the midwifery programs have also had challenges, as it has been difficult to keep the midwife deployment rate constant due to lack of financial support, transportation issues, and security in addition to other challenges. In Kenya, community based escorts for midwives and the types of payment received suggest an interesting model that could be applied in Afghanistan, Pakistan, or other developing countries. It remains a fundamental need for all developing countries to sustain midwifery programs, to increase skilled birth attendance, and to improve the access and quality of maternal health services.

References

1. Speakman EM, Shafi A, Sondorp E, Atta N, Howard N. Development of the Community Midwifery Education Initiative and Its Influence on Women's Health and Empowerment in Afghanistan: A Case Study. *BMC Womens Health*. 2014;14:111.
2. Mohmand KA. *Community Midwifery Education Program in Afghanistan: Striving for Safe Delivery*. Washington, DC: The World Bank; August, 2013. Health, Nutrition, and Population Discussion Paper. 87076.
3. Mansoor GF, Hill PS, Barss P. Midwifery Training in Post-Conflict Afghanistan: Tensions between Educational Standards and Rural Community Needs. *Health Policy Plan*. Jan 2012;27(1):60-68.
4. Zainullah P, Ansari N, Yari K, et al. Establishing Midwifery in Low-Resource Settings: Guidance from a Mixed-Methods Evaluation of the Afghanistan Midwifery Education Program. *Midwifery*. Oct 2014;30(10):1056-1062.
5. Unicef. *The State of the World's Children 2009: Maternal and Newborn Health*. New York: Unicef; December, 2008.
6. Keighly T. *European Union Standards for Nursing and Midwifery: Information for Accession Countries*. Copenhagen, Denmark: World Health Organization Regional Office for Europe;2009. Second Edition, Revised and Updated.
7. Wood ME, Mansoor GF, Hashemy P, et al. Factors Influencing the Retention of Midwives in the Public Sector in Afghanistan: A Qualitative Assessment of Midwives in Eight Provinces. *Midwifery*. Oct 2013;29(10):1137-1144.
8. U.S. Agency for International Development. *Program Evaluation of the Pre-Service Midwifery Education Program in Afghanistan*. Washington, DC: USAID;2009. Final Phase One Report.
9. Sarfraz M, Hamid S. Challenges in Delivery of Skilled Maternal Care - Experiences of Community Midwives in Pakistan. *BMC Pregnancy Childbirth*. 2014;14:59.
10. National Maternal, Newborn and Child Health Programme. *Deployment Guidelines for Community Midwives*. Pakistan: MNCH Programme;2013.
11. National Maternal, Newborn and Child Health Programme. *Guidelines for the Deployment of Community Midwives*. Pakistan: NMCH Programme; April 20, 2010.
12. Mannah MT, Warren C, Kuria S, Adegoke AA. Opportunities and Challenges in Implementing Community Based Skilled Birth Attendance Strategy in Kenya. *BMC Pregnancy Childbirth*. 2014;14:279