

**Can Community Midwives establish
financially sustainable practices in
the private sector?**

Lessons from the Integrated Afghan Refugee
Assistance Program Midwifery Training Project,
Baluchistan

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Executive Summary

Introduction

Afghan refugees have been migrating to Pakistan to escape the recurring conflict in their home country since 1979. Most refugees are women and children, who need high quality maternal and child health services. However the host country itself has a fragile maternal and child care system, reflected in its high maternal mortality ratio of 276/100,000 live births. The province of Balochistan, which hosts the largest numbers of Afghan refugees, has the highest maternal mortality rate (785 per 100,000) in the country.¹ Not surprisingly, maternal mortality among Afghan refugee women in Pakistan is the most common cause of death in women aged 15-49.

Of the many challenges refugee women face in receiving maternal healthcare services, a lack of skilled birth attendance is one of the most important.² A large body of evidence - both historic from Sweden and more recently from Sri-Lanka - suggests skilled birth attendance is a key intervention that reduces maternal mortality rates.³ However, worldwide, skilled birth attendant programs have had mixed results. A common variable in successful programs is their location in the public sector, while private-sector models have faced challenges in ensuring universal coverage and equity of care.

In 2010-2011, Mercy Corps Pakistan (MC) introduced a midwifery training project as part of its poverty alleviation Integrated Afghan Refugee Assistance Program (IARAP). This project aimed to provide Afghan refugee women with self-sustainable, market-oriented, home-based livelihoods, while simultaneously improving maternal and newborn health status of these women's communities.

The private sector location of the Mercy Corps AMTP raises the question whether the CMWs - poor women aiming to provide care to poor Afghan women - can establish financially sustainable private practices'. This question is particularly relevant in the context of refugee populations in Pakistan and a war-torn Afghanistan, where the majority of the population is impoverished by 30 years of war. The poor by definition, cannot pay for maternal health care, at least at rates essential for a midwife to sustain a private practice. The

objective of this research, therefore, was to assess if the Afghan CMWs had established financially sustainable practices, and to identify factors that enabled (or disabled) establishment of such practices. We also aimed to assess the quality of care provided by these midwives.

Methods

A mix of methods was used: document review, a financial analysis of CMW practices, in-depth interviews and observations. Data were collected from two primary sources:

1) Program personnel and program documents; 2) CMWs, their family members and female clients over a period of 14 days from June 2- June 20 2014. A total of 6 program personnel, 12 CMWs, 8 family members and 7 clients were interviewed using semi-structured interview guides. Financial data was collected from 11 CMWs using a piloted financial analysis tool.

Findings

Ten out of the sample of 12 CMWs were practicing midwifery. They earned a mean net income of Rs 8323 per month. When stratified by when MC provided support of training, stipend, drugs and consumables (i.e. currently supported by MC versus previously supported by MC) the senior (i.e. previous batch) earned Rs 16,975, while the currently supported batch earned Rs 3,380. However, using Pakistan's minimum wage (Rs 11,000 per month) as a benchmark and assuming it is a living income, the data show that two of three practices of CMWs previously supported by MC and only 1 of 8 CMW practices currently supported by MC were financially sustainable. The former is a small number, the result of loss of MC contact with CMWs after their repatriation to Afghanistan and the latter rate was not unexpected given these women had established their practices just 6-months prior to evaluation.

Cost recovery ratio, a key indicator of financial performance, was Rs 3.32 amongst senior CMWs and Rs 1.75 amongst junior CMWs. General overhead ratios were, on the whole, low because most clinics were home-based. CMW productivity ratios, measured as the ratio of total income to number of hours worked, averaged Rs 4.24 for senior CMWs and Rs 4.11 for junior CMWs. In other words, the senior CMWs earned Rs 4.2 for every hour worked, while the junior CMWs earned Rs 4.1. These rates are very low compared to the minimum

hourly rate of Rs 68.75 (based on the minimum pay of Rs 11,000 per month and working 8 hours a day).

Qualitative data identified poverty, family support, interest in practicing midwifery and professionalism as key individual-level factors that led young women to work as midwives. The program structures and processes - sensitive recruitment criteria, targeted advertisement, and on-going, active and continuous support - greatly enabled the CMWs to establish their practices. The overarching enabling program factor was that program plans were implemented as designed.

The data suggested some concerns about the midwives' practices when assessed against recognized standards of good practice. However, the CMW-clients were happy with the care they had received from our sample of CMWs.

Conclusion

In conclusion, and within the context of the sample, our data suggests CMWs can establish financially sustainable practices in the private sector, but only if they serve clients who can afford to pay their fees. It should be noted, however, that the poorest of the poor by definition will not be able to pay for services. . Nonetheless, and despite this challenge, two out of the three senior CMWs have managed to establish financially sustainable practices. If we include CMW4, the Kabul-based CMW, this proportion increases to 3 out of 4. Amongst the junior CMWs, one out of eight had established a financially sustainable practice in only six months. These are not un-remarkable achievements given the context of poverty and the design of the strategy: serving a very poor population with private sector services. Nonetheless, there remains a need to devise more innovative ways to ensure the very poor women receive essential maternal care while the CMWs, themselves poor women, are fairly remunerated.

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Can Community Midwives establish financially sustainable practices in the private sector?

Lessons from the Integrated Afghan Refugee Assistance Program Midwifery Training Project, Baluchistan

Context

Afghan refugees have been migrating to Pakistan to escape the recurring conflict in their home country since 1979. Like most global refugee populations, many Afghan migrants are women and children. This vulnerable group needs high quality maternal and child health services. Refugee populations generally draw upon either the host country's health care resources or specially developed refugee health programs. In this case, the host country's, Pakistan's, maternal and child health care system is itself fragile and has failed to address the needs of its own population. Pregnancy and childbirth complications remain the leading cause of death and disability among women of reproductive age. The country's maternal mortality ratio of 276/100,000 live births,¹ makes Pakistan one of six countries that contributes to over two-thirds of the global burden of maternal mortality. The province of Balochistan, Pakistan, which hosts the largest numbers of Afghan refugees, has the highest maternal mortality rate (785 per 100,000) in the country.¹ Not surprisingly, maternal mortality among Afghan refugee women in Pakistan is the most common cause of death in women aged 15-49.²

Of the many challenges refugee women face in receiving maternal healthcare services, a lack of skilled birth attendance is one of the most important.² A large body of evidence - both historic from Sweden and the UK and more recently from Sri-Lanka, Malaysia and Thailand - suggests skilled birth attendance is a key intervention that reduces maternal mortality rates.³ However, worldwide, skilled birth attendant programs have had mixed results. Sri Lanka introduced public health midwives in the early 1900s,⁴ and reduced its maternal mortality rate (MMR) from 2,000 to 31/100,000 live births between in 1930 and 2011.⁵⁻⁷ Similarly, Thailand and Malaysia reduced their MMRs from 425 and 275/100,000 live births respectively in 1960 to less than 30 in 2010 using the same strategy.⁸ In contrast, the implementation of a community midwifery program in Indonesia for the past 30 years has

had disappointing results, with the MMR stagnating at 220/100,000 live births following an initial optimistic decline.⁹ Afghanistan's community midwifery program has produced little change in its MMR, currently at 1,400/100,000 live births.^{8,10} Pakistan adopted a community midwifery program more recently, in 2006, and emerging evidence suggests the program may not to be achieving the expected gains in skilled birth attendance or maternal mortality.^{8,11}

One factor differentiating the successful from unsuccessful programs is their funding structure. Both the historically successful programs in Sweden and UK and more recently the Sri Lanka and Malaysia are public sector programs, in which the women do not have to pay user fees.¹² In contrast, the Indonesian program is a mix of public and private sector. Between 1989 and 1996, Indonesia deployed 54,000 midwives in as many villages in the country.¹³ After training and deployment, the midwives received a three-year government contract while they established their private practice, with the expectation they would gradually shift to a full private practice after 3 to 6 years.¹⁴ Evaluations of the Indonesian midwifery initiative indicate the program has been less than successful in reducing maternal mortality rates, which has stagnated at 220/100,000 live births. A number of probable causes for the poor performance of the program have been identified, key amongst which was that the midwives' fees were felt to be too expensive.¹⁵ At the same time, the midwives found they could not sustain themselves via a private practice at the end of their government contract.¹⁶ One consequence has been that the use of the village midwives has remained considerably skewed towards wealthier groups, since the midwives see little incentive in serving the poor.¹⁴ According to the 2007 Indonesia DHS,⁵ 59% of poor women were still being attended by traditional birth attendants, while 80% of wealthy women were attended by nurses/ midwives.

Integrated Afghan Refugee Assistance Program

The Integrated Afghan Refugee Assistance Program (IARAP) is a poverty alleviation program implemented by MercyCorps Pakistan (MC) in 2002. The overall goal of the program is to improve livelihood opportunities for Afghan refugees and their host communities in Quetta district through sustainable, market-oriented solutions. In program cycle 2 (2010-2011) an additional strategy was launched, a midwifery project that would enable Afghan refugee women to develop self-sustainable, home-based livelihoods. The

program would also have the benefit of simultaneously improving maternal and newborn health status of these women's communities. Specifically, the Midwife Training Project had following four objectives:

1. To train Afghan CMWs in providing high quality maternal health services to Afghan refugees living both in Quetta City and in Afghanistan if they repatriated back to their home-villages in Afghanistan.
2. To teach Afghan CMWs the skills necessary to establish a financially sustainable home-based practice, both within Quetta City and in Afghanistan
3. To strengthen the capacity of four maternal health facilities within Quetta City
4. To improve the reproductive health seeking behaviors of Afghan refugee women within Quetta City and Afghanistan.

Activities to Achieve Objectives

The activities that aim to achieve the objectives of the Integrated Afghan Refugee Assistance Program's Midwifery Training Project entail 1) CMW recruitment 2) CMW training and 3) CMW deployment. CMW recruitment involves enrolling women into the CMW training program, adhering to a selection criteria based on, but not limited, to the woman's age, refugee status, language skills, status as a trained community health worker, as well as her status within the community, her mobility and ability to access at least 15 families in her community (See Annex 1 for selection criteria). The CMW training component involved developing midwifery curriculum that complies with competency criteria's of both Afghan and Pakistan Midwifery Councils. The selected women received training comprised of theory and practical skills regarding antenatal, natal, and postnatal care. Lastly, CMW deployment consisted of establishing their home-based practices, supervision of activities by program staff with clinical expertise and access to ambulance services.

To date, the Afghan Midwifery Training Project has provided 18-month training to 45 CMWs and supported them in the establishment of workstations equipped with basic equipment and supplies. They are provided supplies, drugs and a stipend of Rs 2000 per month for one year to support establishment of their practices. Of the 45 CMWs trained to date, 13 are working in semi-urban settlements in Quetta, 25 have repatriated to Afghanistan, and 1 immigrated to Australia. The first CMW repatriated to her home village in Afghanistan

in March 2012 and the most recent CMW repatriated in February of 2014. Starting September 2013, MC began supporting the training of an additional 15 women to become CMWs over a one year period. Internal monitoring reports and anecdotal evidence suggests that these CMWs have developed viable livelihoods and are providing life-saving maternal, neonatal and child health (MNCH) care. Program data indicate that in July 2013, each Afghan Midwifery Training Project (AMTP)-CMW in Quetta conducted an average of 18 ANC check-ups and four deliveries. Most of their clients were accessing care from a skilled birth attendant for the first time.

This is a remarkable achievement, particularly in comparison to the levels of functioning of the Government of Pakistan's Community Midwives. In this national program, young rural women, between the ages of 18 to 35 who meet minimum educational criteria, were recruited and provided 18-months of midwifery training. They were then deployed to their home-villages to serve a population of 5- 10,000, defined using administrative union council boundaries. The CMWs are expected to provide domiciliary antenatal, childbirth, and post natal care and refer women with complicated pregnancies/deliveries to facilities.¹⁷ They receive a stipend of Rs 2,000 per month for three years while establishing private practices. A closer look shows that the design of the Pakistani government program is similar to the Indonesian *One village, one Midwife* program.

Emerging research suggests that like the Indonesian Midwives, the Pakistani CMWs are facing considerable challenges in establishing their private practices. Between 2009 and 2011, they only attended 3% and 11.7% of births in Layyah and Jhelum, respectively.¹¹ Program monitoring data also shows that only 16% of the CMWs were conducting four or more deliveries a month, the minimum number required to maintain skills.ⁱ Our research also shows that 30 out of a randomly selected sample of 38 community midwives in districts Jhelum and were not practicing midwifery¹¹ Ethnographic research has highlighted poor training,¹⁸ gender norms that discourage women's work for wages in the absence of household poverty, devalued status of the midwifery profession and the CMWs limited mobility^{11,19} as some of the key reasons that underlie the low practice rates. Some of these issues arose as a result of recruitment of women who did not know what midwifery practice entailed and were not interested in the practice after training. Others could neither establish

their private practices as they did not have the necessary entrepreneurial skills nor could they access to start-up capital or support.¹¹

The similarities in design of the Pakistani CMW, the Indonesian *One village one Midwife* and Mercy Corps AMTP raises the question of effectiveness of the private-sector model for midwifery services. Can the CMWs, young Afghan refugee women aiming to provide care to poor Afghan Refugee women, establish financially sustainable private practices? This question is particularly relevant in the context of refugee populations in Pakistan and a war-torn Afghanistan, where the majority of the population is impoverished by 30 years of war. The poor by definition, cannot pay for maternal health care, at least at rates that are essential for a midwife to sustain a private practice. The present research aims to answer these questions.

Research questions

1. Have the AMTP-CMWs established financially viable midwifery practices (i.e. do they make a profit on their monthly services that allows them to purchase additional supplies, meet their household income needs, and save where possible?)
2. If yes, what factors, individual and programmatic, have led to this financial viability? Can these factors be replicated? If yes, how?
3. What is the quality of AMTP-CMW care, both from the perspective of evidence-based best practices and of women receiving services?

Research objectives

The fundamental objectives of the research are:

1. To identify what factors, both programmatic and individual, enabled establishment of financially viable private-sector midwifery practices that are both a source of livelihood for Afghan refugee women while simultaneously providing maternal and child health care to Afghan refugee and host community mothers and babies in Quetta and (?Afghanistan?).
2. To contribute to the evidence-base of innovative maternal and neonatal health care provision by community-based health care providers.

3. To inform positive developments in maternal health policy, service design and care delivery in Balochistan, Pakistan more generally and elsewhere.

Methods

A mix of methods was used: document review, a financial analysis of CMW practices, in-depth interviews and observations. Data were collected from two primary sources: 1) Program personnel and program documents; 2) CMWs, their family members and female clients over a period of 14 days from June 2- June 20 2014.

1. Data from program personnel and program documents

This data was collected by:

- 1.1. Reviewing program documents that included but were not limited to CMW selection criteria, CMW training manuals, lists of CMW workstation equipment and supplies, and costs.
- 1.2. Conducting a literature search using Web of Science and Popline. The following search terms were used: midwife, community midwifery models, entrepreneurial skills, small businesses and gender in Pakistan. Sets of combined and individual search terms were searched in the two databases, resulting in a total of 319 articles. The first assessment was based on the title and abstract of the article and the exclusion and inclusion criteria (written in English and published in the last 15 years). Fourteen articles were retrieved for a full text review. A targeted grey literature search complemented the academic literature.
- 1.3. Consultation meetings with Dr Saeedullah, Mercycorps Quetta, Dr. Farooq Azam Jan, Divisional Director Health Services, Quetta Division, Dr Nadira Khan, Principal Public Health School Quetta, Dr. Nabila Khan, Provincial Coordinator, Maternal Child Health (MCH) Program, Quetta, Mrs Nighat Durrani, Registrar, Pakistan Nursing Council and Mrs Shabina and Mrs Batool of Mercycorps Quetta

2. CMWs, families and clients

Data were collected from a triad of one CMW, a family member and one client. A total of 12 CMWs, 8 family members and 7 clients were interviewed using semi-structured interview guides. First, a random sample of 10 CMWs was selected from the program database. If a CMW was not available, she was replaced by another randomly selected CMW. At the end of this exercise it became apparent that only one CMW from the 'class of 2011' and one from 'class of 2012' could actually be contacted for participation in the evaluation. The majority of the class of 2011 and the class of 2012 (14 out of 15 in each class) had been lost to contact, primarily because they had repatriated to Afghanistan (see Annex 1). Given the older batches have had more time to establish their practices and work without MC support, an effort was made to purposefully recruit these CMWs. Two CMWs of the class of 2012 were contacted after some effort and invited to participate in the evaluation. The distribution of the final sample of 12 CMWs is presented in Table 1 below. In the remainder of the report, the 'class of 2011' and 'class of 2012' will be referred to as 'senior CMWs' and 'class of 2013' as 'junior CMWs'. See Table 2 for detailed CMW participant characteristics.

Table 1

Class	No. of CMWs
Class 1 (2011)	1
Class 2 (2012)	3
Class 3 (2013)	8
Total	12

- 2.1 To assess if AMTP CMW practices are an effective source of income, income/expenditure data was collected from 11 out of the 12 CMWs using a pre-tested financial analysis tool. Data could not be collected from one CMW because she is practicing in Afghanistan. At the time of the telephone interview, she had been in visiting Peshawar since 3 months for medical care and could not provide her practice's financial records. The financial analysis tool has been shared with MC.
- 2.2 In-depth interviews were conducted with the 12 CMWs to explore their experiences of establishing and running a private practice, and understanding the factors that promote or hinder their practice.
- 2.3 In-depth interviews were conducted with 8 family members, 6 mothers and 2 fathers.

The reasons for not interviewing the remaining 4 family members was as follows: One father refused to meet Principal Investigator Dr. Zubia Mumtaz (ZM) citing purdah concerns. Paradoxically, he was supporting his daughter's practice in Afghanistan in the face of Taliban opposition; One CMW was in her forties and de-facto head of her household; Two of the married CMWs' husbands were in Afghanistan and unavailable.

- 2.4 To assess women's understanding of quality and experiences of CMW care, in-depth interviews were conducted with 7 CMW clients. The clients were randomly selected from CMW registers and paid a home visit. The CMW provided the address and sometimes accompanied us although every effort was made to talk to the clients in the absence of the CMW. The reasons for not interviewing the remaining 5 clients were as follows: Two CMW clients' could not be contacted as these CMWs were practicing in Afghanistan; one CMW did not know the address of any of her clients; one CMW was not keen for us to visit her clients stating that they will be unhappy with strangers visiting them; one CMW failed to understand our request and instead took us to a neighborhood MNCH clinic.
- 2.5 CMW workstations were observed for: 1) type of construction, 2) availability of running water, 3) toilets, 4) whether the design of the labour room respected women's privacy, and 5) availability of essential drugs and supplies.

All interviews were conducted by ZM using piloted semi-structured interview guides. Since most CMWs parents and clients spoke Pushto, a MC colleague acted as a translator. Data were recorded mostly manually with the interviewer transcribing the data.

Table 2. Respondent characteristics

No	CMW ¹	Year started practice	Family member interviewed	Patient interviewed	Clinic observed	Financial analysis done	Comment
1	Noshaba	2011	N/A	Yes	Yes	Yes	30-month old practice. CMW defacto head of household as husband non-providing.
2	Eliza	2012	Mother	Yes	Yes	Yes	18-month practice
3	Atiya	2012	No	No	No, in Afghanistan	Yes	Based in Afghanistan. Working despite Taliban opposition.
4	Javeria	2012	No	No	No	No	Based in Afghanistan, interviewed on telephone. Could not interview her husband (Kabul-based), client or observe her clinic.
5	Yamna	2013	Mother	No	Kit-only CMW	Yes	6-month old practice. Could not speak Urdu or Pushto and was unable to understand our request to meet her client. Instead took us to visit a neighbourhood clinic.
6	Hania	2013	Father	Yes	Yes	Yes	6-month old practice
7	Zoha	2013	Mother	Yes	Yes	Yes	6-month old practice
8	Mariam	2013	Mother	Yes	Yes	Yes	6-month old practice
9	Seher	2013	No	No	Yes	Yes	6-month old practice Denied our request to talk to her clients
10	Hamna	2013	Mother	Yes	Yes	Yes	6-month old practice
11	Huma	2013	Mother	Yes	Yes	Yes	6-month old practice
12	Unaiza (Unaiza)	2013	Father	No	Yes	Yes	6-month old practice. Did not know the home address of any patient

¹ CMW names have been changed to protect respondent privacy.

Data analysis

1. First, using Microsoft Excel, the overall functioning of the CMWs was gauged by assessing the number of antenatal care (ANC) clients seen, numbers of births attended and number of post-natal clients. The CMWs were then rated as 'functional', 'somewhat functional' and 'non-functional'. We defined a 'functional' as one who had established a routine of work and attended at least 4 deliveries a month (attending 4 births is deemed the minimum requirement for maintenance of skills). A 'somewhat functional' CMW was one who was providing ANC, but had only attended 3 or less deliveries a month. A 'non-functional' CMW was one who was not working as a birth attendant, either as indicated by her or as observed and verified by the research team.
2. A financial analysis was done to assess if the CMWs had managed to establish financially sustainable practices. Given that financial sustainability without ongoing MC support is the goal of the project and an indicator of program sustainability, data were analyzed and presented stratified by when MC provided the support. In the report, a junior CMW is defined as a CMW within the first year of her practice who is currently supported by MC through the provision of a stipend, drugs and consumables for one year. Senior CMWs are defined as CMWs who do not currently receive a stipend from MC nor drugs or supplies.
3. Only 3 of the 11 CMWs - the senior-CMWs - had practices older than 12-months and were no longer receiving MC support. Data from CMW-4 (see Table 2), also a senior CMW currently not receiving MC support, was not available. The remainder of the 7 CMWs, as class of 2013 alumni, were currently receiving MC support. One CMW was unusual in that she was not currently receiving MC support (a 'kit-only CMW') although she is an alumni of class of 2013. She is included in the analysis as a CMW not currently receiving any MC support. The financial data was entered in Microsoft Excel and analyzed as follows:
 - Calculation of net income, of each CMW and averages. An income and expenditure statements for each CMW was developed. Income included both patient fees and the MC stipend if applicable. Expenditures included direct and indirect costs of providing care. Direct costs consisted of the cost of drugs and

supplies required to provide the clinical care. Indirect costs consisted of rent for the clinic facility, costs of procuring a one-month supply of drugs and supplies, and the cost of medicines provided by MC (if applicable). Opportunity costs, based on market rates, were also added as expenditures. Net income was calculated by subtracting total expenditures from total income.

- Calculation of Cost Recovery Ratio (CRR) for each type of service provided was conducted. CRR estimates cost recovery as a fraction of total costs and is a key indicator of financial performance. Total and service-specific CRR were calculated by dividing total income by total costs plus income from a specific service by total costs of that service respectively (Income/total cost). If the CRR equals 1.0, the operation as a whole is breaking even; if it exceeds 1.0 it is earning a surplus, while if it is below 1.0 the CMW is losing money. While the direct cost of a service were available in the data, indirect costs of a particular service were calculated using the formula: Total Indirect cost*Volume of service /Total volume of services.
 - Calculation of General Overhead Ratios (GOR). GOR estimates the less visible overhead and general costs. GORs were calculated by dividing overhead costs by total income. Overhead costs in this study only included clinic rent (if specifically rented) or a portion of total if the entire house was rented.
 - CMW Productivity Ratio. Although productivity is understood as a crucial factor in the performance of labour and in terms of outputs of an organization, for the purposes of the present research, we defined it as ratio of the CMWs' return on investment of her time. It was calculated by dividing a CMWs net income by number of hours she worked.
4. The qualitative data was translated and transcribed manually by ZM during data collection. It was later transcribed in Microsoft Word. Using a social constructivist, interpretative approach,²⁰ data were coded and broad themes identified. This involved an initial familiarization with the data by repeatedly reading the transcripts. Initial coding was guided by the stated research objectives and later by additional concepts as they emerged. The next stage of analysis was the identification of emergent themes from the

coded data – that is, synthesizing participant responses to the richest explanations and elaboration for addressing the research questions.

Findings

CMW functionality status

The key finding of the research is that 10 out of 12 CMWs that constituted our study sample were practicing midwifery. Eleven out of 12 CMWs had fully equipped birth-stations. The one CMW without a birth station had not been provided one by MC; she had been given a birth-kit only. Eight CMWs had a room in their house dedicated to a clinic, two had rented a room in houses about 15 and 5 minute's walk from their residences, respectively, and one Kabul-based CMW rented two rooms in a market. In the month prior to the research (May 2014), this sample of CMWs saw a mean of 9.6 ANC patients (range 1-23), attended 3 births (range 0-10) and provided care to 1.3 postnatal patients (range 0-7). Based on our criteria of functionality (see methods above), 3/12 CMWs were rated as 'functional' and 7/12 as 'somewhat functional'. Two CMWs, Yamna, the 'kit- only' CMW and Seher were rated as 'non-functional', although the latter had attended one delivery. See Table 3 for details.

Table 3: Patient load by CMW for May 2014.

No	CMW ¹	Time since start of practice	No of ANC clients	No. of deliveries	No. of clinic-based deliveries	No. of home-based deliveries	Number of PNC clients
1	Noshaba	30 months	18	10	10	0	Not available
2	Eliza	18 months	19	3	2	1	0
3	Atiya	18-months	23	7	7	0	7
4	Javeria	18 months	Afghanistan-based CMW. Data not available, but narrative suggests a functional practice.				
5	Yamna	6 months	2	0	0	0	1
6	Hania	6 months	5	2	1	1	0
7	Zoha	6 months	7	1	0	1	0
8	Mariam	6 months	4	2	1	1	0
9	Seher	6 months	1	1	1	0	0
10	Hamna	6 months	7	1	1	0	2
11	Huma	6 months	7	3	0	3	0
12	Unaiza	6 months	12	4	4	0	4

Financial analysis of CMW practices

The findings of this section are based on 11 CMWs as the data was not available for one Afghanistan-based CMW. Overall, the mean net income of these CMWs was Rs 8323 (range: negative 690 to 40,450). Nine out of the 11 CMWs had positive cash flows. When stratified by current MC support, the 4 CMWs currently not receiving MC support had a mean positive income of Rs 16,975 (range: 1,025 - 40,450). Five out of the 7 CMWs currently supported by MC had a mean positive income of Rs 4,336 (range 452 - 15,363). Two currently MC-supported CMWs had negative cash flows. See Table 4 for details of each CMW's revenue and costs.

A key indicator of financial performance is the ratio of patient revenue to total operating costs, also known as the cost-recovery ratio (CRR). Table 5 presents the cost recovery ratios by type of service. Overall, total CRRs were highest in the three senior CMWs. These CMWs earned an average of Rs 3.32 (range 3.25-5.08) for every rupee they spent as operating costs. The junior CMWs receiving current MC support earned a mean of Rs 1.75 (range 0.92-3.42) for every rupee they spent.

As expected, the cost recovery ratio was highest for childbirth services. It averaged 3.70 amongst the senior CMWs and PKR 7.42 amongst the junior CMWs. The latter figure is inflated by three junior CMWs who charged rather high fees and ended up earning Rs 13 for every rupee cost (CRR -13.1). On the whole, the CMWs did not charge higher fees for home deliveries compared to a CMW clinic delivery.

The senior CMWs had higher ANC cost recovery ratios (1.08) compared to a CRR of 0.34 amongst the junior CMWs. If we exclude Unaiza, the high-charging junior CMW, the average ANC-CRR of the junior CMWs was just 0.17. In other words, the junior CMWs just earned paisa 17 for every rupee spent on antenatal care. They were in fact losing money when providing ANC care. But this was considered a business strategy aimed at retaining the patient and enticing her to deliver under their attendance. The fact that the senior CMWs, with more established practices, were able to charge more for ANC shows that this might be a good business strategy during the early stages of establishing a practice.

Table 4: Monthly Income and expenditure statements of each CMW practice

Monthly Income and expenditure statement CMW clinics (PKR)														
	Senior, previously CMWs					Junior, currently supported MC Support								Total Mean
	CMW1 Noshaba	CMW2 Eliza	CMW 3 Atiya	CMW5 Yamna	Mean	CMW 6 Haniya	CMW7 Zoha	CMW 8 Marium	CMW9 Sehar	CMW 10 Humna	CMW 11 Huma	CMW 12 Unaiza	Mean	
Income														
Patients fees	50700	5690	30170	1025	21896	4500	1220	3730	3650	1730	2570	19620	5289	11328
MC Stipend	0	0	0	0	0	2100	2100	2100	2100	2100	2100	2100	2100	1336
Total income	50700	5690	30170	1025	21896	6600	3320	5830	5750	3830	4670	21720	7389	12664
Expenditure														
CMW -Total direct costs	7350	2241	5537	0	3782	0	80	774	300	0	440	2741	619	1769
Indirect costs paid by CMW ¹	2900	1260	400	0	1140	0	0	2000	3000	1020	20	310	558	791
Indirect Costs paid by MC ²	0	0	0	0	0	2604	2604	2604	3140	3140	2978	3306	2911	1852
Total Indirect Costs	2900	1260	400	0	1140	2604	2604	4604	6140	4160	2998	3616	3389	2571
Total expenditure	10250	3501	5937	0	4922	2604	2684	5378	6440	4160	3438	6357	4009	4341
Net Income PKR ³	40450	2189	24233	1025	16975	3996	636	452	-690	-330	1232	15363	3380	<u>8323</u>

Net Income USD														
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¹Monthly medicines purchased by CMW and clinic rent.

²Cost of monthly medicines provided by MC

³Surplus/Deficit for the current one month

* CMW-4 data is missing from the table as her financial data was not available.

Table 5: Cost Recovery Ratios

Cost Recovery Ratios														
	No current MC Support*					Current MC Support								Total Average
	CMW1 Noshaba	CMW2 Eliza	CMW3 Atiya	CMW5 Yamna	Average	CMW6 Haniya	CMW7 Zoha	CMW8 Marium	CMW9 Sehar	CMW10 Humna	CMW11 Huma	CMW12 Unaiza	Average	
CRR¹	4.95	3.25	5.08	0	3.32	2.53	1.24	1.08	1.67	0.92	1.36	3.42	1.75	2.32
CRR-ANC	1.66	0.56	2.09	0	1.08	0.16	0.08	0.13	0.34	0.08	0.27	1.31	0.34	0.61
CRR-childbirth total	6.96	2.27	5.55	0	3.70	11.29	12.5	3.19	3.21	3.61	2.81	15.36	7.42	6.07
CRR-childbirth at static facility	6.96	0	5.55	0	3.13	5.91	0	1.89	3.21	3.61	0	15.36	4.28	3.86
CRR home based delivery	0	2.27	0	0	0.57	5.38	12.50	1.30	0	0	2.81	0	3.14	2.21
CRR-postnatal	0	2.50	2.99	0	1.37	0	0	0	0	0	0	1.42	0.20	0.63
CRR family planning services	3.25	0	0	0	0.81	0	0	0	0.13	0	0	0	2	3.01
CRR General Patient	1.72	0	2.28	0	1.15	0	0	0	34	0	0	1.25	0.23	0.51
General overhead ratio²	5	9	0	0	4	0	0	34	0	26	0	0	9	7
CMW productivity ratio³	6.91	2.51	7.10	0.42	4.24	6.92	0.40	3.11	3.13	1.82	1.72	11.66	4.11	4.15

* CMW-4 data is missing from the table as her financial data was not available.

¹ Income from patients/total costs of related services

² Overhead costs/total income

³ Total income/number of hours worked.

The senior CMWs also had higher postnatal CRRs. The junior CMWs, with the exception of Unaiza, earned no revenue from providing postnatal care. Similarly, general practice and family planning services had negligible CRRs. General practice consisted largely of measuring blood pressure, a service for which patients were loath to pay. Family planning services were really only provided by one CMW (Noshaba). See Table 5.

General overhead ratios (GOR) were, on the whole, low because most clinics were home-based. The CMWs (or rather their families) either owned the homes or the clinic was in their rental homes and the house rent did not vary by use of the room. Only Eliza's landlord had raised the rent after learning that she had a clinic in her home. However, renting space for a clinic increased GOR, as indicated in the case of CMWs Marium and Humna. Their GORs of 34 and 26 are significantly higher than CMWs with more established, but home-based practices. See Table 5.

CMW productivity ratios, measured as the ratio of total income to number of hours worked, averaged Rs 4.24 for the senior CMWs and Rs 4.11 for junior CMWs. In other words, the senior CMWs earned Rs 4.2 for every hour they worked, while the junior CMWs earned Rs. 4.1. These rates are very low compared to the minimum hourly rate of Rs 68.75 (based on the minimum pay of Rs 11,000 per month and working 8 hours a day).

Table 6 lists the balance sheet of each CMW, their total assets, liabilities, and fund balances. Overall, CMWs average total assets of Rs. 187,307. This average is however, skewed by the four CMWs whose families own their homes. If this home-ownership is excluded, the CMWs chief asset is their workstation (provided by MC). This suggests that the one key criteria of this poverty alleviation project - providing vulnerable women with an income generating opportunity- has been met. Seven out of 11 CMWs practices (63%) own nothing more than the MC-provided workstation and our observations of their homes and living conditions indicated a high level of poverty. However, that four CMWs (47%) or their families owned the house in which the clinic is located suggests not all recruits met the poverty criteria. Qualitative data, however, shows that one of these four CMWs was cash-poor despite owning their home. The remaining three CMWs were reasonably well-off. In one case, the father had invested Rs. 600,000 to build a comfortable clinic for his daughter.

Table 6: Balance sheet of each CMW to demonstrate assets, liabilities, and funds balances (PKR)

CMW practices*														
	No current MC Support					Current MC Support								Total Average
Assets	CMW1 Noshaba	CMW2 Eliza	CMW3 Atiya	CMW 5 Yamna	Average	CMW6 Haniya	CMW7 Zoha	CMW8 Marium	CMW9 Sehar	CMW10 Humna	CMW 11 Huma	CMW 12 Unaiza	Average	
<i>Fixed assets</i>														
Birth station space	0	0	400000	0	100000	200000	100000	0	0	0	0	600000	128571	118182
Equipment provided by MC	76032	76032	76032	1600	76032	76032	76032	76032	76032	76032	76032	76032	76032	76032
Equipment purchased by CMW	600000													
Total fixed assets (A)	676032	76032	476032	76032	176032	276032	176032	76032	76032	76032	76032	676032	204603	194214
<i>Current Assets</i>														
Inventory of MC Medicines	0	0	0	0	0	2604	2604	2604	3140	3140	2978	3306	2911	1852
Inventory of medicines	7,350	2241	5536	0	153781	0	80	774	300	0	440	2741	619	56315
Accounts receivables¹	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Assets	CMW1 Noshaba	CMW2 Eliza	CMW3 Atiya	CMW 5 Yamna	Average	CMW6 Haniya	CMW7 Zoha	CMW8 Marium	CMW9 Sehar	CMW10 Humna	CMW 11	CMW 12 Unaiza	Average	
Cash provided by MC	0	0	0	0	0	2100	2100	2100	2100	2100	2100	2100	2100	1336
<i>Total current assets (B)</i>	7350	2241	5536	0	153781	4704	4784	5478	5540	5240	5518	8147	5630	59503
Liabilities														
Accounts payable²	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Total Current liabilities (C)</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Net current assets (Liabilities) B-C</i>	7350	2241	5536	0	153781	4704	4784	5478	5540	5240	5518	8147	5630	59503
Net Assets A+B-C (PKR)	683382	78273	481568	1600	329813	280736	180816	81510	81572	81272	81550	684179	210233	253717
Net Assets A+B+C (USD)														

* No data available for CMW-4

¹Payments yet to be received from patients

² For example, a loan.

Financial sustainability of CMW practices

As part of the Integrated Afghan Refugee Assistance Program, a key objective of the CMW training program was to improve livelihood opportunities for refugee women while simultaneously providing the much-needed maternity care, both to refugees and local host communities. Locating the Afghan CMWs in the private sector was viewed as a sustainable, market-oriented solution. This approach does, however, raise the question of whether the CMWs can establish financially sustainable practices given their clients are largely poor refugees, whom some of which, by definition, cannot to pay for their services. Assuming Pakistan's minimum wage of Rs 11,000 per month is a living wage and CMW practices that earn this amount as 'financially sustainable', the data was stratified into two groups: CMWs who earned PKR 11,000 or more per month and those who did not.

As Table 4 shows, only three out of 11 CMW practices can be considered financially sustainable. Two of these practices belong to senior CMWs, while one is a junior CMW, a graduate from 2013. These CMWs earn an average of Rs. 26,682, (range 15,363-40,450), which is more than two times the minimum wage. Their total CRR is nearly 5, meaning they earn about Rs 5.00 for every rupee spent. Their CRR for ANC is 1.7 and childbirth is 10. They earn Rs. 9.0 for every hour worked. All this is reflected in healthy average of total assets (Rs. 616,376). Two of these CMWs started off with a healthy asset-base, owning their clinic premises, but one (CMW 1, Noshaba) built her asset base from nothing.

Table 4 also shows that eight out of the 11 practices earned net incomes less than the minimum wage and can theoretically be defined as financially not sustainable. This statement, however, needs qualification as all but one of these practices are nascent junior CMW practices, having been working for only six months at the time of this research. While they are in the process of establishing their practices their financial data suggests their new practices are struggling. Even after taking into account current MC-support (a stipend of Rs 2100 per month, supplies and drugs), these practices are earning a mean net income of Rs. 1240 per month (range: -690 to 3996). Their total cost recovery ratio is just 1.5, suggesting they are earning just Rs. 0.50 for every rupee cost of care. They are hardly earning anything on ANC services, and Rs. 4.9 for every one rupee expenditure for providing childbirth services. These CMWs earn, on average, only Rs. 2.50 for every hour worked.

Table 7: Financially sustainable CMW Practices

CMW practices													
	Practices earning greater than minimum wages (PKR)				Practices earning less than minimum wages (PKR)								
	CMW1 Noshaba	CMW3 Atiya	CMW12 Unaiza	Mean	CMW2 Eliza	CMW5 Noorbibi	CMW6 Haniya	CMW7 Zoha	CMW8 Marium	CMW9 Sehar	CMW10 Humna	CMW11 Huma	Mean
Net monthly Income	40450	24,233	15363	26,682	2189	1025	3996	636	452	-690	-330	1232	1240
Total CRR	4.95	5.08	3.42	4.48	3.25	0	2.53	1.24	1.08	1.67	0.98	1.36	1.51
CRR-ANC	1.66	2.09	1.31	1.69	0.56	0	0.16	0.08	0.13	0.34	0.08	0.27	0.20
CRR-childbirth	6.96	5.55	15.36	9.29	2.27	0	11.3	12.5	3.19	3.21	3.61	2.81	4.86
CMW productivity ratio	6.91	7.10	11.67	8.56	2.51	0.42	6.92	0.40	3.11	3.13	1.82	1.72	2.50
Net current assets	683,382	481,568	684,179	616,376	78,273	1,600	280,737	180,816	81,510	81,572	81,272	81,550	108416

Private Sector location and poverty

Patients inability to pay emerged as a key factor in these CMWs low income levels and low CRRs. As stated above, these poor CMWs live and practice in low-income neighbourhoods, some simple *katchi abadis* (slums) and refugee camps. Their clients, all of whom are from their immediate neighbourhoods, are very poor women. These women, by definition, cannot afford to pay their fees. For example, Huma only charged Rs 500 (range: 400-600) for childbirth services. Her clients are very poor; the one client interviewed for the study was a wife of a day labourer, who barely managed to earn enough for food.

It is worth noting that one of these 8 struggling practices belongs to a senior CMW working for over two years. Eliza (CMW2) has an established practice with a healthy volume of clients: 19 ANC patients and 3 births in May. However, her net income was only just Rs. 2,189, with a CRR of 3.25 and productivity ratio of 2.50. The only reason for Eliza's low income was her patient's inability to pay, paying an average of Rs. 20 for an ANC visit and Rs 600 for childbirth. These fees barely covered the costs of Eliza's care. Patients often paid her less than what she requested on the rare occasions she cited an amount. More often she let the patient decide and pay a fair fee. Because of her small turn-over of cash, she could not purchase drugs and supplies in bulk directly from the supplier, a practice that could provide her significant savings. She purchased her medicines and supplies in small amounts from the drug-store, which reduced her profit margins. The income earned by the CMWs earning under a living wage was not enough to support their families. Some supplemented it by working additional jobs. Huma, for example, was working as a full time teacher in the mornings and washing people's clothes on weekends in addition to her midwifery practice. Eliza, not surprisingly, was looking for full time employment with better remuneration.

In contrast, the three successful CMWs with financially sustainable practices live in better-off neighbourhoods and their clients can afford to pay childbirth costs. Noshaba for example (CMW-1) requested and received Rs. 100 for a routine ANC visit and Rs. 3000-8000 for childbirth attendance. Unaiza routinely requested and received Rs. 300 or more for an antenatal visit and Rs. 3000-4000 for childbirth services. Her cost recovery ratio for childbirth services was 15.4 and cost productivity ratio 12. In other words, Unaiza earned Rs. 15 for every one rupee spent and earned Rs. 12 for every hour she worked. Unaiza's

practice is located in a well-established *pucca* (English word 'concrete') neighbourhood. The wealth of her family and, by extension her neighbourhood, can be gauged by the fact that her father spent Rs. 600,000 building a separate room for her clinic.

In conclusion, a CMW can only establish a financially sustainable practice in the private sector if she serves clients who can afford to pay her fees. The poorest of the poor cannot pay the fees required to sustain a practice. Nonetheless, and despite this challenge, two out of the three senior CMWs have managed to establish financially sustainable practices. If we include CMW4, the Kabul-based CMW (no data, but narrative suggested a functioning practice with a net income of Afghani 10,000-15,000 per month (PKR 20,000 -30,000), this proportion of those senior CMWs who have managed to establish financially sustainable practices increases to 3 out of 4. Amongst the junior CMWs, one out of eight had established a financially sustainable practice in only six months. These are not un-remarkable achievements given the context of poverty and the design of the strategy: serving a very poor population with private sector services.

In the next section individual and programmatic factors that have led to financial viability will be identified and insight into how these factors can be replicated will be highlighted.

Factors that promoted establishment of CMW practices

The two key findings of this research are that the vast majority of the AMTP-CMWs trained are practicing midwifery and that a reasonable proportion of the senior CMWs have managed to establish financially sustainable practices. The Afghan CMW practice rate of 92% (11 out of 12) greatly exceeds the government's practice rate of 21% in districts Jhelum and Layyah (8 out of 38 CMWs).¹¹ The qualitative data helped identify the programmatic and individual factors that led to the high rates of practice and financial sustainability of some of these practices.

Individual factors

1. ***The 'right' candidate:*** This emerged as the most important, if not the crucial factor in CMWs' practicing midwifery. While the importance of selecting the 'right candidate' is intuitively important, what exactly are these characteristics in the Afghani and Pakistani

contexts is unclear. Our data suggest the following characteristics are associated with candidate's practice of midwifery:

2. **CMWs' poverty:** The majority of the Afghan CMWs working, 10 out of 12, were **poor** women. Of these, five CMWs could be considered 'very poor'. These CMWs were the primary providers in their households despite the presence of men in the family. Haniya's practice was the only source of income for her family, which consisted of an old father and two older, unmarried sisters. Huma, together with her mother (a domestic) were responsible for running their households since the old father was too ill to work. Noshaba's husband had never provided well for his family, so Noshaba took over. Her practice not only supported the household, but also the schooling of eight children.

Afghanistan (and Pakistan) are contexts where gendered norms locate men as providers and idealise women as dependants. Women were not typically expected to take up paid employment. However, a long history of wars and consequent displacement has rendered many Afghan families destitute. Unaiza's father stated that that his grandfather had been an Afghani Prime-Minister. Noshaba was the daughter of an Afghan army official and a teacher. Eliza's father has owned restaurants in Saudi Arabia and Quetta. Poverty had now pushed these families to violate the gendered norm of male provision and allow their daughters to work as midwives or '*dais*', a profession generally held in low-esteem.²¹ In this context, women's willingness to practice this perceived low-status occupation usually indicates the extent of their financial desperation.

3. **Family support:** All the CMWs in our sample had family support from key family members: fathers, mothers, and husbands. In some cases, the parents and husbands supported the CMW in the face of opposition from the larger family (often uncles and cousins) and in the case of one CMW, the Taliban. Eliza's parents supported her training secretly, as she had a cousin who opposed it on the grounds that educating their women was against their traditions. So fierce is this opposition that, according to Eliza's mother, 'he will cut us to pieces if he comes to know'. Haniya has a home-based practice in

Afghanistan. The local Taliban are unhappy with this practice and have asked her father to put a stop to this activity. However, the father has, so far, ignored the Taliban requests.

Family support consists of general permission, first for training, then for actually working and, in a few cases, travel to people's homes. It also consists of providing company for the CMWs to travel to people's home. During daytime, mothers or sisters accompanied the CMW when she was called for a home-birth. For example, Marium's parents, both her father and mother, stayed with her from midnight to 9.00 am when she referred and accompanied a patient to a hospital.

Family support is a crucial variable in the CMWs' ability to work. Its absence can render a highly motivated CMW non-functional.²² However, the very high level of family support observed in this study may not be tenable in the long-term nor possible if practices continue to grow. This requires further attention from program planners.

4. ***Interest in practising midwifery:*** Once the young woman is permitted to work, an interest in the health care field emerged as the second important variable in the calculus to practice midwifery. Not only did the CMWs (and their parents) view midwifery as an acceptable career choice, many viewed it as a practice of medicine. In fact, two CMWs viewed midwifery as a stepping stone to medical school and a career as an 'MD'. Another had already labelled herself a 'Lady Doctor' on a 15-ft long advertisement board. This approach is refreshing as our research from Punjab suggests that families and communities in general do not consider midwifery practice a high-status profession.¹¹ A large body of literature from South Asia documents that '*dai-practice*' is low-status work as childbirth care in this context is understood as polluting. Traditionally such work is performed by *dais*, usually poor, low caste women who are perceived to be ritually polluted and therefore suited to undertaking the task.²¹

5. ***Exhibit professionalism:*** A characteristic commonly identified among the CMW respondents was 'professionalism'. According to the Health and Care Professional Council (UK), professionalism is a meta-skill, comprised of situational awareness and

contextual judgement. It goes beyond technical competencies and allows individuals to draw on the communication, technical and practical skills appropriate for the given professional scenario.²³

Observations suggested that the CMWs' professionalism included having respect for, and taking pride in, their work, taking initiative, being organized planners, reliable providers, and putting in effort to provide best possible care. Some had taken the initiative in meeting the community, mostly their neighbours, relatives and friends, to inform them of their services. When referring a patient for complications during labour, a number of the CMWs reported accompanying them to the health facility and, in some cases, staying with them until the patient was safely delivered.

Furthermore, clients reported that the CMWS were providing respectful maternity care. Without fail, all seven clients interviewed were happy with the care they had received from CMWs. They appreciated the CMWs demeanour and behaviour, with one woman calling Huma a 'blessing'.

Program factors that led to success

1. **Program's establishment of 'recruitment criteria' and ensuring they are followed in practice:** The above findings, that most CMWs were poor women and were interested in practicing midwifery are not surprise findings since they are the result of recruitment criteria: CMWs 'economic vulnerability' and selection of CMWs after close observation during their community health worker training. Selecting poor women was a logical choice given the fundamental objective of the poverty alleviation project is to enable Afghan refugee women to develop sustainable livelihoods. However, it has, in the process and possibly inadvertently, managed to draw on a key factor that leads to women working as midwives in this cultural context. Recent research from Punjab (published after the launch of this program) shows that poverty is *the* key push factor for women's work as midwives.²²

However, more important than developing recruitment criteria is ensuring the criteria are followed in practice. The data suggest the MC Afghan midwifery program followed the

recruitment criteria closely. While this may not seem important, it is a crucial factor as implementing programs as designed is unusual in contexts characterised by poor governance. When it happens, it should be recognized and lauded.

2. **Program’s recruitment practices:** Most CMWs (or their parents, mostly mothers) reported they heard of the midwifery training opportunity from the MC IARAP outreach recruitment activities. These MC recruitment activities consisted of MC reaching out to potential candidates in Afghan schools and health centres. Clearly, our data suggest that these recruitment activities managed to attract the ‘right’ candidates. This again is an important element of program functioning that should be lauded. Previous research shows that the government CMW recruitment activities (advertisement in newspapers, initially only in the English papers and later Urdu) and word of mouth within the health system led to the recruitment of privileged candidates, who were later not interested in working in a difficult, low status occupation.²² An additional factor that increased the probability of selecting the ‘right’ candidate was selecting the CMWs out of a group of Community Health Worker trainees. All the CMWs had initially been recruited as Community Health Workers. Based on their performances and individual characteristics, as observed by their trainers in the School of Public Health, a sub-group of women were selected to proceed to midwifery training. This process increased the probability of selecting the ‘right’ candidate, but again, the fact that the plans were implemented as designed should be acknowledged.
3. **Program’s on-going, active and continuous support for the CMWs:** The second important programmatic factor that appears to have contributed to CMW functioning is on-going support from the program. The CMWs are, for the first year of their practice provided support that includes:
 1. Provision of workstations and on-going drugs, supplies and equipment support for one year. Annex 2 lists the elements of the workstation, supplies and drugs. All the CMWs attributed the provision of workstations as a key factor that enabled them to practice. In Fazila’s case, the CMW practicing in Kabul, it was her workstation that attracted her local partner to establish a clinic. This local partner was crucial to the

- establishment of her practice as she brought local knowledge and connections essential to establish a clinic in a new, unknown environment.
2. Provision of supervisory support, both clinical and administrative, from one person. The supervisor had extensive clinical experience and a supportive style of supervision that contrasted with supervisory styles observed in the national CMW program that denigrated and shamed CMWs not performing well. The AMTP supervisor was available at all times of the day and night to provide support if and when needed.
 3. Provision of back-up ambulances to transport women with birth complications to facilities equipped to provide emergency obstetric care. The ambulance service was available 24/7 and can be attributed with saving lives. Nasra, CMW7's client was referred to Civil Hospital Quetta as a high risk pregnancy. Nasra did not like the way women were treated and chose to seek Zoha's care. Zoha correctly diagnosed the patient's need for referral and the MC ambulance transferred the patient at 3.00 am. It is easy to see how an unskilled provider might have tried to deliver the baby or how lack of transport at 3.00 am in Quetta might have led to a maternal death.

This level of program support is commendable. It reflects not only on the design of the program, but more importantly its proper implementation. The government CMW planning document (PC-1) 2006-2012¹⁷ details the same kind of support for the government CMWs (provision of equipment and drugs, clinical and administrative supervision and a referral system). However, an emerging body of research shows that implementation of these strategies have not been fully realised. MC's comparatively successful experience shows that lack of proper implementation may be a bigger limiting factor than design issues in the current CMW programs in Pakistan.

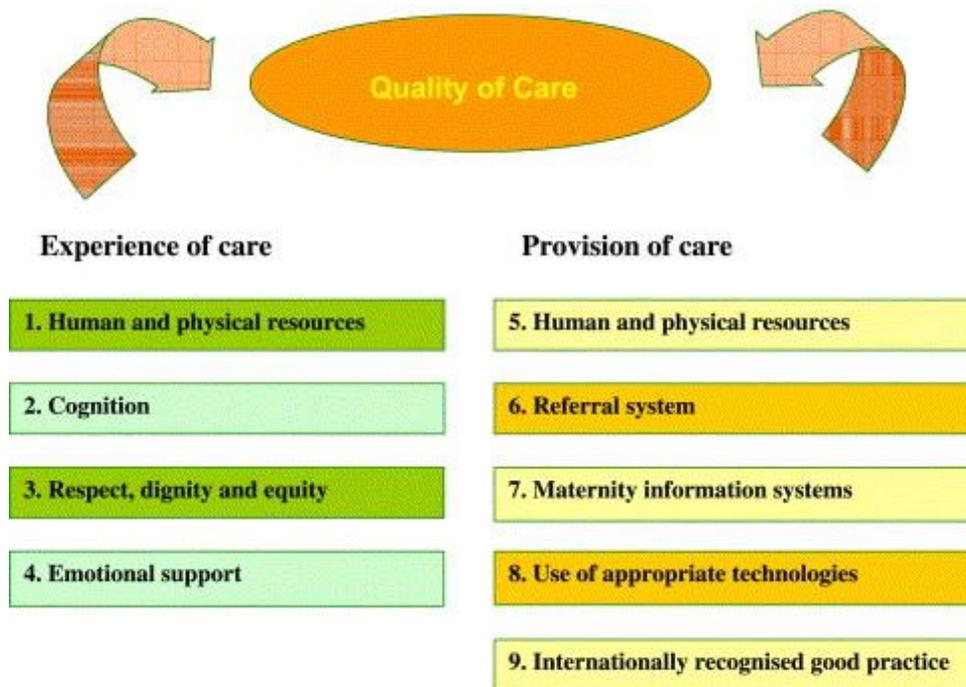
Quality of CMW Care

Quality of care in the maternal health domain is a complex, multidimensional concept. According to Houlton, Mathews and Stones²⁴ Quality of Maternal Health Care framework, quality of care can be divided into:

- 1) Quality of provision of care
- 2) Quality of care as experienced by users

Fig 1 below lists the elements in each category.

Fig 1: **The Hulton-Mathew Framework for assessing the quality of maternal health services²⁴**



Drawing on elements of this framework applicable to midwifery practice, our data shows:

1. Quality of Provision of Care:

1.1 Human and physical resources

1.1.1 **Human resources are available:** All the 12 sampled midwives in the program were trained skilled birth attendants, having received one-year of midwifery training and six-months of Community Health Worker training. Importantly, all of the sample CMWs were personally providing clinical care including childbirth attendance. None had hired assistants to provide care in their absence, a common practice observed amongst physicians and other providers, where the actual childbirth is attended by untrained '*ayahs*'.

While assessing CMWs' training and knowledge base was beyond the scope of the present research, the data shows that the CMWs were identifying complications of pregnancy and referring the patients, averting unnecessary morbidity and mortality. All CMWs narrated examples of complications they had diagnosed and referred. For example, Zoha, identified Naima's cephalo-pelvic disproportion and referred her for a c-section. Naima had been informed of her condition by an obstetrician, but had sought care from Zoha in an attempt to avoid a c-section. This is a common situation in Pakistan and untrained providers often risk delivering the child vaginally.

The data also suggests the CMWs are providing skilled care to women who had previously sought care from untrained *dais*. For example, Noshaba's client's previous six deliveries had been attended by a local *dai*. During her seventh pregnancy, the patient switched providers and chose Noshaba. Importantly, none of these women were seeking care because they saw them as skilled providers, but because these CMWs were available nearby and had developed a reputation for providing respectful care. For example, Eliza's client reported seeking Eliza's care because she was available next-door and is '*no less than a dai*'.

1.2. Infrastructural resources

1.2.1. **Clean, well-equipped and well-maintained clinics are available:** A total of 10 CMW Quetta-based clinics were observed; the Afghanistan-based clinics could not be observed. Eight of these 10 clinics were home-based, in which a room was dedicated to a clinic. Two clinics were in rented premises about 3 minutes and 15 minutes' walk from the CMWs primary residence respectively. Seven out of the 10 clinics observed were in a '*pucca*' house and three in a '*katcha*-mud' house, of which two had mud floors. Irrespective of building material, all were clean and well-maintained. Two of the three '*katcha*' clinics had sheets covering the wall and roof as protection against falling debris. Only four of 10 clinics had running water. All had an electricity connection. Although not examined in all clinics, the toilet facilities were invariably ill-kempt.

All the clinics were designed in a way that respected the patient's privacy. They were located at a distance from the family quarters, by design as most were former 'men's *baitaks*' (drawing rooms) that had been converted into a clinic. Within the clinic, delivery beds had curtains around them in a way that a person entering a clinic could not see the delivery bed. All the clinics were equipped to provide care for a normal birth.

1.2.2. **Necessary drugs and medical supplies were available.** As indicated above, 8 out of the 10 clinics observed were currently being supplied with drugs and supplies by MC and could therefore be considered fully equipped to provide normal pregnancy and childbirth care. However, the two older clinics were also fully equipped with essential drugs and supplies, indicating that CMWs are managing to maintain well-equipped clinics after cessation of MC support. All clients interviewed stated that they had not purchased any drugs or supplies when seeking care from the CMWs.

1.2.3. **Laboratory support services.** No CMW had any laboratory-support services. In fact no CMW ever mentioned testing for hemoglobin levels or

blood groups and Rh factor as part of antenatal care. Although most CMWs reported conducting urine tests for a pregnancy, not a single CMW reported testing for protein urea (for pre-eclampsia) or for urinary tract infections.

1.3 Maternity Information Systems

1.3.1 Poor maintenance of records: Both patient and supply records were observed. MC had provided all the CMWs with stock registers to maintain records of equipment and supplies and patient records. It appears that such records were maintained satisfactorily, but for only as long as the CMWs had to report their use rates to MC. All the junior CMWs, who were required to maintain stock registers and, did so, but only of the equipment that was supplied by MC. They did not maintain records of drugs and supplies they had bought outside of the MC support. Once the MC reporting requirement lapsed, all CMWs had stopped maintaining any kind of records. None of the four batch 1 and 2 CMWs maintained stock registers or patient records despite availability of MC-provided registers. No CMW, junior or senior, maintained financial records. All data presented in the first part of the report was based on their recall.

1.4 Referral systems

A key objective of CMW deployment was to reduce maternal deaths by identifying, stabilizing and referring complicated births. Although a detailed exploration of the CMWs referral systems was beyond the scope the present research, CMW and client narratives suggested the CMWs routinely referred complicated births to tertiary care facilities, mostly Civil Hospital Quetta or the Bolan Medical Complex. The MC-ambulance service was also helpful, although it is not clear if senior CMWs had access to this service. None of the CMWs appeared to have as defined referral system or established links with providers to whom they regularly referred patients.

1.5 Evidence-based clinical practice

The CMWs are trained to provide evidence-based domiciliary maternity care that includes antenatal, normal childbirth and postnatal care. CMW and client narratives and my observations (as a physician) suggest issues with quality of CMW clinical

care. It is worth taking a moment here to discuss the role played by syncretism of local cultural practices into biomedical practice. Although there is limited published literature around this topic from Pakistan, my research suggests there is ‘a certain way medicine is practiced’ in Pakistan which diverges considerably from western biomedical practice. This includes the practice of ‘drips’, intravenous vitamin B12 and even iron for *kamzori* (weakness), easy use of antibiotics without evidence of bacterial infection, often at incorrect dosages and duration and polypharmacy. So powerful are these practices that a provider’s refusal to give a ‘drip’ can damage his/her reputation as a healer. Not surprisingly, all practitioners, from physicians, nurses, midwives to the untrained lab technicians and health facility sweepers who practice after hours, quickly learn to practice this form of medicine.

All the sampled CMWs were practicing what I call ‘Pakistani medicine’. A large part of their practice consisted of patients who only wanted a ‘drip’. Of more concern were issues with care that could potentially lead to serious implications. I observed one CMW, whose narrative included her care of a pre-eclamptic patient with a calcium-channel blocker, measure a patient’s blood pressure (BP) incorrectly. She cited a BP reading of 80/0 in an alert young woman. Nearly all the CMWs narrated blood pressure readings as a single number, mostly the systolic reading. Only one out of nine respondents asked named the BP readings in terms of systolic and diastolic readings.

There was also evidence of prescription practices that suggested either poor knowledge or financial considerations overriding evidence-based best practices. Unaiza, for example, prescribed an average of four to six different types of medications during routine ANC visits - an antibiotic, an antiemetic, one, and sometimes two painkillers, one multivitamin preparation and calcium pills. It is difficult to imagine that seven out twelve ANC patients needed a gram-negative antibiotic (Flagyl). Her prescription of the drug Motilium (Domperidone) for nausea of pregnancy is not supported by evidence. This drug, while prescribed for nausea and vomiting, has not been tested for pregnant human subjects, nor is it the drug prescribed for nausea during pregnancy in North America. She charged an average of

PKR 300 during an antenatal visit (range 270-450), most of which was due to drugs on which she made a healthy profit.

Querying patients for practices around childbirth also showed that CMWs did not place the baby on the mother's abdomen immediately after birth. Only two patients (out of seven interviewed) stated that the CMW had placed the baby on her abdomen. All reported breastfeeding was initiated 3-4 hours after birth. Most of the babies had been fed water, butter and sugar mixtures until the flow of milk on day 3. These babies continued to be bottle-fed in addition to breast milk, thus negating the principle of exclusive breastfeeding. In all cases, the newly delivered mother and newborn had been discharged within 30-60 minutes of birth. The latter is a dangerous practice as the majority of deaths occur in the first 24 hours following delivery (Ronsman 2006). It is noteworthy that all the babies discussed in this study had been bathed about three days following the birth.

Of particular concern was the CMWs' provision of general medical care, what they called 'OPD' and constituted nearly 40% of their practice. While their training does include basic general medical training, our data indicates the CMWs care that does not meet evidence-based practices. During the team's presence, a young woman (about 21 years old) presented with severe headache and nausea. The CMW diagnosed that she had 'high BP', incorrectly measured the patient's BP and was preparing to prescribe an anti-hypertensive (one-dose of injection Lasix). I thought the differential diagnosis included a migraine headache and an enteric infection, the latter needing further testing. So I prescribed an analgesic and a blood culture if the condition persists.

2. Quality of CMW care as experienced by users

It is important to assess the users' experience of quality of care because even if the provision of care maybe deemed high quality against all recognized standards of good practice, it might be unacceptable to the woman and her family and vice versa.

Our data suggests that while there may be concerns about the midwives' practices when assessed against recognized standards of good practice, the CMW-clients were happy with the care they had received from our sample of CMWs. All answered in the affirmative to the question of whether they were satisfied with the care they received. An analysis of client narratives suggests that it was the CMWs' respectful care that was the key source of their satisfaction. All stated, without prompting, that CMWs respected their privacy, that the clinic door was closed during examinations and the delivery bed had a curtain around it. The CMWs allowed a family member to be present in the delivery room. She informed them what to expect during a vaginal exam and her reason for conducting it. Our observations showed that all the sample CMWs were soft-spoken, if somewhat less-than-confident girls. Although not clearly stated by the women, it seems this gentle demeanour, which is a sharp contrast to the loud, rude behaviour of staff in government hospitals, is highly appreciated. In fact, so important is respectful maternity care for women that one client chose to deliver with a CMW despite having been referred to Civil Hospital by a gynecologist for pre-eclampsia.

Discussion

The objective of this evaluation was to assess if the Afghan CMWs had established financially sustainable practices, and to identify factors that enabled (or disabled) establishment of such practices. The results show that the majority of our sample of 12 CMWs are practicing midwifery. However, only two out of three practices not currently receiving MC support and 1 out of the 8 practices receiving such support were financially sustainable. The former is a small number, the result of loss of MC contact with the CMWs upon their repatriation to Afghanistan. The latter rate was not unexpected given these women had established their practices just 6-months prior to evaluation.

Given these elements of ground reality, it is difficult to conclude, with absolute certainty, that the MC Afghan Midwifery Training Program has enabled establishment of financially sustainable practices. The average net income of Rs 8232 is about 25% less than the minimum wage, which is assumedly a living income. There is however, vast variation in these incomes, ranging from Rs 40,450 at the high end and a negative 690 on the low end. If we exclude the outliers, simply eyeballing the data suggests that the average income is about

Rs. 4000 or 36% of minimum wage. The CMW productivity ratio is also low, about Rs. 4 for every hour worked compared to a minimum hourly rate of Rs. 68.75 (based on the minimum pay of Rs 11,000 per month and working 8 hours a day).

These findings are new and some of the first to assess financial sustainability of private sector midwives in a context of poverty, where the majority of clients are poor, and therefore by definition unable to pay the amount of fees required to sustain a practice. Ensor et al.¹⁶ estimated the total incomes of the Indonesian midwives to explore the effect of financial incentives on working in remote rural areas. The Indonesian 'One village, One Midwife' program, is one of the few skilled birth attendant programs worldwide in which midwives are located in the private sector. Ensor's evaluation showed the midwives in Batun province, Indonesia were able to earn around US\$364 per month or US\$4368 per year (median \$3113), even in remote areas.¹⁶ Since they also had government contracts, the income from their private clinical practices constituted about 60% of their total income.

However, further analysis of the data showed that these village midwives services remained considerably skewed towards wealthier groups, primarily because they saw little incentive in serving the poor.¹⁶ Our data also suggests that the Afghan CMWs can also establish financially sustainable practices if they serve clients who can afford to pay a fee necessary to sustain their practices. But since the number of Afghan CMWs who were providing care to relatively well-off women was small, only three out of 11 CMWs had financially sustainable practices. All this raises a crucial question: Can poor women provide care to poor women in the context of the private sector? Is the private sector model the most suitable strategy for providing maternal health services in the contexts of Pakistan and Afghanistan?

The research also highlighted factors that promoted establishment of CMW practices. At the individual level, these include CMWs poverty, family support, an interest in the profession and a difficult to describe, but crucial characteristic, professionalism. These findings align with previous research from Punjab which also showed the government CMWs in Punjab were more likely to work if they were poor.²² This necessity to work led to more family support as these CMWs became the family bread winners. Women with a sense of professionalism were more likely to succeed in establishing a practice.¹¹

The research has also identified a number of programmatic factors that promoted the establishment of CMW practices. These include sensitive recruitment criteria, advertisement of the program in an effective way that reached the target population, providing the new graduates with a fully-functional workstation and drug and medical supplies for one year, provision of clinical supervision and an ambulance service for transporting complicated cases to referral facilities. A review of the government PC-1 (2006-2012)¹⁷ which detailed out the design of the government CMW program, suggests major similarities in the design of the program. The government was also supposed to provide its CMWs with a work station, drugs and supplies, and clinical supervision. The government recruitment criteria did not include women's vulnerability or poverty. However, the key difference between the government program and the MC program is in the processes of implementation. MC implemented all the plans as designed as opposed to the implementation of the larger government program in which implementation processes were incomplete. Given the importance of proper implementation, credit should be given to the MercyCorps program managers.

Limitations

A key limitation of this study is that only four CMWs without current MC support were analysed. The real data regarding financial sustainability would have come from this group of providers, given they had the time to establish their practices and were 'out there in the real world' with no current MC support. Research from Indonesia shows that midwives' level of income is closely related to the amount of experience a midwife has, represented by the number of years since qualification.¹⁶ As stated previously, we were unable to contact the older midwives because they had repatriated to Afghanistan. This is a sign of the success of the Integrated Afghan Refugee Assistance Program since the Afghan refugee women were trained with the objective of their repatriation to their homeland equipped with income generating skills. It is recommended that a mechanism be developed to longitudinally follow-up the current and, if possible, future batches of CMWs long after they have 'graduated' from MC support.

Another limitation is the sensitivity of the data. Financial and particularly income data are always sensitive and CMW respondents might have underreported the fees they charged or

the amount the patient paid. We did find the CMWs tended to state that they did not ask for a specific amount and left it to the patient to decide the amount. The third limitation is that most of the data, particularly the fees paid by patients and the cost of medicines, were based on recall. No CMW maintained financial records of her costs or income.

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Annex1

Selection Criteria for CMWs training at Public Health School (PHS) Quetta

Program Goal: To improve health and livelihoods outcomes for Afghan Refugees and their host communities in Quetta district through sustainable, market-oriented solutions.

General:

- Should be an Afghan refugee residing in project catchment areas
- Evidence of Afghan identification proof viz. Refugee Card (POR) /Afghan, Government document (Tazkira)
- Age should be between 18-35 years
- Preference will be given to vulnerable, headed house hold, disable, and widow, divorced, unemployed, unskilled, unaccompanied, have no specific source of income and TB cured or newly registered patient
- Desire to repatriate to their homeland Afghanistan
- Have a good reputation in the community and should be physically and mentally sound
- Only one beneficiary will be selected from one family
- A candidate will not be provided the CMWs training for more than one time
- Can speaks local language of Balochistan/ Afghanistan (Urdu Pashto, Persian, Dari or English language is compulsory
- Willing to work, cooperate and easily accessible for any Mercy Corps Office interventions

Specific:

- Minimum education: Matric (secondary school level) from a recognized board
- Has successfully completed the six months' CHWs training in Public Health School on Afghan Curriculum offered by Mercy Corps
- Willing to attend the CMWs training course for one year and establishing the CMW homes
- Has successfully conducted deliveries during the CHWs course or in the community
- Active and mobile can access to 10-15 or more families in the community
- Follow the rules and regulation assigned by Mercy Corps and Public Health School, Quetta

- A candidate will be terminated for low attendance, poor performance and gross misconduct of MC/PHS policies such as use of mobile or any other electric device in workshops during training course

Annex 2

Elements of the CMW Workstation

List of Items for CMW Workstation				
Sr. #	Description of Items	Unit	Quantity	Unit Price
1	Office Table	No	1	4800
2	Office Chair wooden	No	1	2800
3	Delivery Table	No	1	23000
4	Patient Examination Stool	No	1	1035
5	Weight Machine (Infant)	No	1	1700
6	Plastic sheets (3x2 Yards)	Yards	2	400
7	Cord clamps Blister Pack sterilized	No	1	200
8	Patient Blanket large (Red Coloure)	No	1	1200
9	Baby Blanket	No	1	500
10	Kidney Tray 8" , Stainless steel	No	1	172
11	Rectangular tray 12" x 10"	No	1	600
12	Episiotomy Scissors (medium)	No	1	150
13	Plain scissor 6"	No	1	70
14	Small Artery Forceps	No	2	150
15	Allies Forceps 4n half"	No	1	100
16	Non Toothed Forceps 4"	No	1	90
17	Tooth Forceps 4"	No	1	65
18	Sponge Forceps 9"	No	1	185
19	Needle Holder 7"	No	1	100
20	Instrument Trolley (Steel) standard size	No	1	2900
21	Dressing drum 12"	No	1	1200

22	Ambu Bag	No	1	2600
23	Surgical Gloves (7#)	No	1	70
24	Disposable gloves	Pack	1	25
25	Stand light (As per sample)	No	1	1200
26	Patient Screen (3 folded) As per sample	No	1	3000
27	Mackintosh (Apron)	No	1	0
28	Patient bed	No	1	6000
29	Suction Bulb	No	1	70
30	Thermo meter	No	1	30
31	I/V stand	No	1	1620
32	3 step Stairs	No	1	1550
33	Bucket Plastic	No	1	600
34	Mug Plastic	No	1	350
35	Dust Bin Large with Cover	No	1	300
36	Pillow with covers	No	1	400
37	Matress with leather cushion	No	1	4000
38	Bed sheets	No	2	600
39	Emergency Light	No	1	1500
40	Gas Heater	No	1	2500
41	Disposable Delivery Kits (Clean Delivery Kit)	No	50	4000
42	Green Board	No	1	2000
43	Sign Board	No	1	2200
Total				76032