based antenatal care (PSLM, 2006-7). It is calculated on a scale of 1-10 by assigning 0.5 score to each 1-5 % in a reverse order. For example, if a district has 4% of antenatal care it will score 10, or if a district has 100% antenatal care it will score 0.5.

Factor B3 = Score of individual district for percentage of facility-based postnatal care (PSLM, 2006-7). It is calculated on a scale of 1-10 by assigning 0.5 score to each 1-5 % in a reverse order. For example, if a district has 4% of postnatal care it will score 10, or if a district has 100% antenatal care it will score 0.5.

District Phasing- Punjab

Priority setting of districts for CMWs' enrolment										Prioritised districts		
Names of Districts	# of CMWs enrolled/ trained by Feb2010*	Factor A	% of SBAs**	Factor B1	% of ANC in rural areas***	Factor B2	% of PNC in rural areas***	Factor B3	A (B1+B2+B3)	Priority Order	Districts in Order of Priority	Cumulative Score
Rajanpur	51	5	7	9.5	24	8	2	10	138	1	Bhakkar	188
Lodhran	73	3	14	9	48	5.5	12	9	71	2	D. G. Khan	165
Bhakkar	27	7.5	16	8.5	33	7	11	9.5	188	3	Khanewal	147
Muzaffargarh	57	4.5	16	8.5	42	6	8	9.5	108	4	Rajanpur	138
Bahawalpur	52	5	20	8.5	34	7	13	9	123	5	Layyah	126
Jhang	68	3.5	21	8	36	6.5	12	9	82	6	Bahawalpur	123
Rahim Yar Khan	88	1.5	21	8	55	5	46	5.5	28	7	M. B. Din	113
Pak Pattan	67	3.5	22	8	44	6	25	8	77	8	Kasur	113
Khanewal	34	7	22	8	54	5	22	8	147	9	Gujrat	111
Bhawal Nagar	63	4	22	8	53	5	9	9.5	90	10	Muzaffargarh	108
Kasur	51	5	23	8	49	5.5	12	9	113	11	Mianwali	105
Layyah	43	6	23	8	49	5.5	26	7.5	126	12	Jhelum	99
D. G. Khan	30	7.5	26	7.5	47	5.5	11	9	165	13	Gujranwala	93
TT Singh	59	4.5	38	6.5	71	3	33	7	74	14	Bhawal Nagar	90
Narowal	57	4.5	39	6.5	75	3	5	10	88	15	Narowal	88
Mianwali	43	6	41	6	71	3	16	8.5	105	16	Jhang	82
M. B. Din	50	5.5	41	6	46	5.5	11	9	113	17	Pak Pattan	77
Faisalabad	104	0.5	42	6	44	6	15	9	11	18	TT Singh	74
Sialkot	99	0.5	43	6	59	4.5	13	9	10	19	Lodhran	71
Gujranwala	54	5	45	6	62	4	18	8.5	93	20	Rahim Yar Khan	28
Jhelum	41	6	46	5.5	63	4	34	7	99	21	Lahore	26
Gujrat	37	6.5	47	5.5	66	3.5	23	8	111	22	Faisalabad	11
Lahore	85	1.5	60	4.5	64	4	12	9	26	23	Sialkot	10

District Phasing- Punjab
* Source: Provincial NMNCHP Cell, Lahore
** Source: MICS - 2003-04
*** Source: PSLM 2006-07

District Phasing- Balochistan

Priority setting of districts for CMWs' enrolment										Prioritised districts		
Names of Districts	# of CMWs enrolled/ trained by Feb2010*	Factor A	% of SBAs**	Factor B1	% of ANC in rural areas***	Factor B2	% of PNC in rural areas***	Factor B3	A (B1+B2+B3)	Priority Order	Districts in Order of Priority	Cumulative Score
Khuzdar	64	4	5	10	22	8	28	7.5	102	1	Zhob	260
Jaffarabad	21	8	8	9.5	15	9	19	8.5	216	2	Sibbi	217
Qila Saifullah	27	7.5	11	9	17	8.5	17	8.5	195	3	Jaffarabad	216
Lasbella	35	7	13	9	22	8	2	10	189	4	Qila Abdullah	213
Nasirabad	35	7	14	9	27	7.5	16	8.5	175	5	Qila Saifullah	195
Zhob	0	10	26	7.5	11	9	7	9.5	260	6	Gwadar	193
Sibbi	20	8.5	17	8.5	35	7	5	10	217	7	Lasbela	189
Qila Abdullah	20	8.5	18	8.5	28	7.5	17	9	213	8	Nasirabad	175
Gawadar	35	7	21	8	10	9.5	0	10	193	9	Loralai	159
Loralai	42	6	34	7	9	9.5	3	10	159	10	Panjgoor	144
Panjgoor	35	7	46	5.5	51	5	4	10	144	11	Khuzdar	102
Quetta	76	2.5	74	3	47	5.5	8	9.5	45	12	Ketch	89
Ketch	70	3.5	33	7	16	8.5	0	10	89	13	Quetta	45

District Phasing- Balochistan
* Source: Provincial NMNCHP Cell, Quetta
** Source: MICS - 2004
*** Source: PSLM 2006-07

District Phasing- Sindh

Priority setting of districts for CMWs' enrolment										Prioritised districts		
Names of Districts	# of CMWs enrolled/ trained by Feb2010*	Factor A	% of SBAs**	Factor B1	% of ANC in rural areas***	Factor B2	% of PNC in rural areas***	Factor B3	A (B1+B2+B3)	Priority Order	Districts in Order of Priority	Cumulative Score
Jacobabad	56	4.5	12	9	17	8.5	10	9.5	122	1	Ghotki	213
Larkana	19	8.5	15	9	41	6	62	4	162	2	Sanghar	204
Shikarpur	17	8.5	15	9	82	2	14	9	170	3	N. Feroze	203
Badin	19	8.5	22	8	37	6.5	14	9	200	4	Badin	200
Dadu	97	0.5	23	8	34	7	29	7.5	11	5	Thatta	192
Ghotki	18	8.5	23	8	27	7.5	10	9.5	213	6	Hyderabad	181
Thatta	22	8	23	8	33	7	14	9	192	7	Mirpurkhas	180
N. Feroze	12	9	28	7.5	35	7	21	8	203	8	Shikarpur	170
Khairpur	73	3	29	7.5	36	6.5	23	8	66	9	Larkana	162
Mirpurkhas	14	9	32	7	50	5.5	29	7.5	180	10	Karachi	147
Sanghar	19	8.5	32	7	31	7	4	10	204	11	Jacobabad	122
Sukkur	56	4.5	47	5.5	26	7.5	5	10	104	12	Sukkur	104
Hyderabad	9	9.5	51	5	50	5.5	17	8.5	181	13	Khairpur	66
Karachi	10	9.5	73	3	70	3.5	12	9	147	14	Dadu	11

District Phasing- Sindh
* Source: Provincial NMNCHP Cell, Karachi
** Source: MICS
*** Source: PSLM 2006-07

District Phasing Khyber Pakhtunkhwa

Priority setting of districts for CMWs' enrolment										Prioritised districts		
Names of Districts	# of CMWs enrolled/ trained by Feb2010*	Factor A	% of SBAs**	Factor B1	% of ANC in rural areas***	Factor B2	% of PNC in rural areas***	Factor B3	A (B1+B2+B3)	Priority Order	Districts in Order of Priority	Cumulative Score
Kohistan	15	9	1.5	10	14	9	1	10	261	1	Kohistan	261
D. I. Khan	62	4	13	9	32	7	8	9.5	102	2	Battagram	191
Battagram	20	8.5	14.5	9	50	5.5	21	8	191	3	Kohat	153
Shangla	67	3.5	14.5	9	28	7.5	22	8	86	4	Mansehra	124
Dir Upper	66	3.5	19.9	8.5	31	7	12	9	86	5	Chitral	124
Swabi	68	3.5	20.1	8	43	6	16	8.5	79	6	Swat	105
Mansehra	40	6.5	21.1	8	60	4.5	37	6.5	124	7	D. I. Khan	102
Chitral	40	6.5	23.2	8	65	4	33	7	124	8	Buner	91
Tank	61	4	24.3	8	45	6	16	8.5	90	9	Tank	90
Lakki Marwat	71	3	24.5	8	36	6.5	17	8.5	69	10	Shangla	86
Abbottabad	65	4	25.1	7.5	50	5.5	50	5.5	74	11	Dir Upper	86
Kohat	45	6	26.1	7.5	25	8	3	10	153	12	Swabi	79
Karak	88	1.5	26.1	7.5	15	9	12	9	38	13	Abbottabad	74
Charsadda	105	0.5	28.3	7.5	36	6.5	12	9	12	14	Haripur	70
Haripur	63	4	29.1	7.5	76	2.5	30	7.5	70	15	Lakki Marwat	69
Buner	66	3.5	29.1	7.5	18	8.5	3	10	91	16	Karak	38
Swat	47	5.5	30.6	7	33	7	52	5	105	17	Mardan	29
Mardan	89	1.5	32.8	7	67	3.5	11	9	29	18	Charsadda	12

District Phasing- Khyber Pakhtunkhwa
* Source: Provincial NMNCHP Cell, Peshawar
** Source: MICS - 2001-02
*** Source: PSLM 2006-07

Deployment Guidelines for Community Midwives

صحت زندگی

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MNCH Program

The MNCH Programme is mandated to train and deploy Community Midwives (CMWs) as frontline skilled birth attendants (SBAs). The projected target for having adequate access and coverage of their services was 12,000 CMWs out of which 8,000 have already been trained but not properly deployed. These deployment guidelines have been developed through a consultative process with all the key stakeholders. It outlines the actual activities and process to be undertaken. In addition an operational manual for CMWs has also been developed which is a quick reference document for them once they are deployed. In addition, evidence based phasing of the CMWs has been shared in the end to help policy planners and managers to prioritise the deployment process according to the respective needs in each district.

Based on cost implications, two models have been proposed for the provincial governments to retain CMWs:

- **Conventional Model:** Cost to sustain one CMW is estimated to be PKR 52,442 per annum, translating into cost per normal delivery of PKR 2,350 in which a minimum fee will be shared by the clients
- **No-Charge Model:** Estimated cost of sustaining one CMW is PKR 100,442 per annum, which translates into a cost per normal delivery of PKR 4,502

To capitalise on this important human resource, there is an urgent need for a unified policy based on these cost estimations and for challenges related to the deployment process.

Rationale for Deployment Guidelines

The Maternal Neonatal and Child Health Programme (MNCHP) targeted to train 12,000 Community Midwives (CMWs) (1 for 5000-10000 population). Deployment of CMWs has been erratic with no standardised guidelines or supportive system by the Pakistan Nursing Council (PNC). The Technical Resource Facility (TRF) responded to this need by developing Deployment Guidelines through a consultative process with key stakeholders. These guidelines and related interventions aim to facilitate deployment of CMWs in the field after successful completion of their 18-months training.

Process for developing deployment guidelines

A situation analysis was undertaken to assess current status, issues, challenges and potential opportunities related to deployment of CMWs. This led to the development of four main documents (Table 1). These are described below:

Table 1: Outcomes of the process for developing guidelines

- **Deployment Guidelines**
- **Operational Manual for CMWs**- What CMWs need to know, remember and do once deployed
- **District Phasing**- For prioritising districts for enrolment and training of CMWs
- **Costing**- For deployment of CMWs

1. Deployment guidelines

Deployment guidelines highlight important aspects to ensure smooth deployment of CMWs in the field; a brief overview of evidence generated and subsequent guideline developed is as follows:

a. Selection and training

Findings from situational analysis: Selection of suitable candidates, availability of appropriate number of trained tutors per clinical supervisors, and opportunity for individual students to conduct deliveries was difficult. Suggested ratio of 1 CMW for 5000-10000 population varied from 2000 for Balochistan and Gilgit-Baltistan to 10,000 for Punjab and 5000 each for Sindh, Federally Administered Tribal Areas (FATA), Khyber-Pakhtunkhwa and Azad Jammu and Kashmir (AJK).

Deployment guidelines: Trainee slots will be advertised district-wise and selection of CMWs will be carried out as per PC-1. Total catchment population for one CMW should be 5000 or within a geographical area that can be covered in one hour on foot. A proxy method for calculating this is area covered in kilometer square which is suggested to be 5 kilometer square (2.2 x 2.2 km travelling, 2.2 km to reach from one end to the other).

Table 2: PC1 Criteria for selection of CMWs

- Female, preferably married
- Permanent resident of the area
- Minimum matriculation with at least 45% marks, preferably with science subjects
- Age: 18-35 years
- Previous Work Experience: Work experience in community will have added value

b. Birthing station

Findings from situational analysis: Mixed approach of home-based deliveries and establishing birthing station in CMW homes was suggested.

Deployment guidelines: One room in CMW house to be established as work station with help from MNCH Programme. District Public Health Specialist (PHS)/ Social Organiser (SO) will visit these with designated supervisors, Lady Health Visitors (LHVs) of Rural Health Centres (RHCs) and Lady Health Supervisors (LHSs) for ensuring its readiness to be operational.

c. Referral mechanism

Findings from situational analysis: CMWs should have good working relationship with the staff Lady Health Workers (LHWs) and Traditional Birth Attendants (TBAs) of referral facilities. Alternate approaches for timely availability of transportation through establishing a Community Support Group (CSG) should be tried along with networking with local Community Based Organisations (CBOs) and Non-Government Organisations (NGOs).

Deployment guidelines: Social Organiser (SO) of MNCHP will help establish a CSG. A revolving fund will be set up through small seed-grant money of PKR 5000 by MNCHP to be used for provision of timely transportation in emergency cases. CMWs will collate and display a list of potential transport available at their work station and will identify high risk clients needing this facility. The CSG will be intimated for funds needed to transport clients to the referral facility. CMWs will provide referrals for: 1) Routine investigations at a nearby health facility Basic Health Unit (BHU) or Rural Health Center (RHC) at least twice during pregnancy; 2) Further assessment at the RHC or in case it is not accessible to a private health practitioner at least once between 6th and 7th month; 3) Referral to an Emergency Obstetrical Neonatal Care (EmONC) facility to the Tehsil Head Quarter (THQ) or District Head Quarter (DHQ) on identifying a danger sign. Referral for registration of pregnant women for antenatal care and follow up will be done by the LHW to a CMW in her area.

d. Introducing CMWs to the community

Findings from situational analysis: MNCHP should launch effective media campaigns using TV, radio and newspapers for introducing CMWs in the community. Government support to CMWs will increase their credibility in the community. In addition, LHWs can play a vital role by introducing them in the community.

Deployment guidelines: For launching CMW services, Public Health Specialist and /or Social Organiser, the Principal of Midwifery School or the Obstetrician of THQ/DHQ should facilitate the ceremony in which all relevant stakeholders will be invited. Agenda of this ceremony should include; introduction and services provided by CMWs, their formal linkages with LHS, LHWs, LHVs; and support needed by CMWs. An open discussion should be held about user charges and options for place of delivery. The ceremony will conclude with handing over of CMW bag to CMWs by one of the community representatives. The CMWs should be equipped with mobile phones with a programmed free life-line service for emergencies and for alerting staff of referral facilities. The MNCHP will identify a mobile company to commission this service.

e. CMW retention

Findings from situational analysis: As a retaining strategy, regular stipend and allowing CMWs to earn from their practice was suggested. For increasing accessibility of the poor to quality services, provision of free services by CMWs was recommended in return for a regular higher stipend. CMWs considered user charges determining their credibility in the community and suggested charging PKR 500 to PKR 2000 for normal delivery.

Deployment guidelines: To retain CMWs, monetary and non-monetary, incentives are suggested, such as, giving them a fixed stipend, an allowance for each referral made and reimbursement for travel. Non-monetary incentives include provision of safe delivery kits and refresher courses (Table 3).

Table 3: Retention incentives for CMWs

Monetary Incentives	Non-Monetary Incentives
■ Fixed stipend: CMWs should receive PKR 2000 per month as retainer fee ■ CMW should be given an allowance of PKR 500 for each referral plus reimbursement of travel expenses ■ Appreciation awards for best performers ■ User charges of 500 PKR for normal delivery	1. Provision of safe delivery kits and supplies 2. Refresher courses

f. Monitoring and supervision

Findings from situational analysis: LHS should visit CMW on a monthly basis to collect CMW monthly report and prepare a report based on assessing her working conditions. LHVs posted at RHCs should make quarterly planned visits to observe CMW clinical and preventive services using specific supervisory checklists. Reports of LHS and LHVs should be discussed in combined monthly meetings of LHWs and CMWs, and the District Evaluation Committees should use the cumulative reports for renewal of their licenses.

Deployment guidelines: A supportive monitoring and supervisory mechanism will be established as follows:

- **Technical supervision:** Lady Health Visitor (LHV) posted at RHC will be responsible for providing technical supervision at least twice in three months (one for preventive services and the other to observe a delivery) using LHS vehicle. The Public Health Specialist (PHS) of District Management Unit (DMU) of MNCHP should discuss this with Executive District Officer (EDO) Health to agree on a strategy for vehicle sharing.
- **Administrative supervision:** Lady Health Supervisor (LHS) of National Programme on Family Planning and Primary Health Care (NP on FP and PHC) will provide administrative supervision and will also collect and review CMW activity record.

g. Registration with Pakistan Nursing Council

After successful completion of examination, the District examination committee will send an application form to Pakistan Nursing Council (PNC) for CMW registration who will then receive a license and identification card thus making her eligible for practice in the community for five years. The District evaluation committee will receive CMW performance reports from using the web-based MNCH system. Renewal of CMW license will be based on their performance reports.

h. Need for additional training before practice

Over 8000 trained CMWs await deployment. Due to the fact that many CMWs did not get sufficient practice to conduct deliveries during training, it is recommended that CMWs go through a 3-months crash training programme to strengthen their clinical skills.

i. Collection and recording of data

Each CMW will record her daily service delivery output in a register. This will be included in a cumulative monthly report to be shared in the monthly meeting with LHWs at the BHU, after which this report will be submitted to the Public Health Specialist.

2. Operational manual for CMWs

An operational manual for CMWs was formulated to support her activities in the field, once deployed. As a result, flash cards were designed in line with her activities and responsibilities (Table 4).

3. District phasing

Districts of Balochistan, Khyber-Pakhtunkhwa, Punjab and Sindh were ranked for allocation of finances to train the remaining CMWs. This was based on total number of trained and enrolled CMWs per district, percentage of skilled birth attendants, percentage of antenatal care and postnatal care. Due to non-availability of data for many districts, ranking was only done for 13 per 26 districts in Balochistan, 22 per 34 districts in Punjab, 18 per 24 districts in Khyber-Pakhtunkhwa, and 14 per 22 districts in Sindh. (Presented in separate sheets attached to end of brief)

Table 4: Flash cards for CMWs

1. Sample of the sign board
2. Layout of working station for CMWs
3. List of essential equipment, medicines and supplies
4. Poster for BHU/RHC
5. Contents of CMWs bag
6. Contact details of important personnel
7. Wall poster for working station
8. Identification of pregnant women
9. Sample of brochure identifying location of CMW working station and services available
10. Antenatal care services
11. Delivery services
12. Postnatal services
13. Maternal, Newborn and Child Health (MNCH) Card
14. Danger signs during prenatal, natal and postnatal period and of the new-born
15. Referral guidelines
16. Sample referral slip
17. Essential information for record keeping and reporting
18. List of personnel for CMW Linkages

4. Costing of CMW deployment

Costing of CMW deployment was done for two models; 'conventional' (minimum fee charge) and 'no-charge'. For each of these models, costing was done using six programme components: 1) pre-deployment requisites, 2) CMW working stations, 3) referral mechanism, 4) advocacy and demand creation, 5) retention of CMWs and, 6) monitoring and supervision. Further cost estimates were calculated for two phases; pre-deployment and post deployment. Pre-deployment phase, estimated to run for two years, covers all cost incurred before deploying CMWs in the field whereas post-deployment estimates cover annual recurring costs for sustaining deployed CMWs.

- **Conventional model:** It is estimated that pre-deployment phase will cost PKR 1,135 million, out of which 39 percent will be incurred for establishing CMW work stations and 30 percent for retaining CMWs. The annual cost to sustain one CMW is estimated at PKR 52,442, which translates into a cost per normal delivery of PKR 2,350.
- **Alternate model:** Under this 'no-charge' model, financial implication of pre-deployment phase is estimated at PKR 1,795 million over two years of the deployment phase, while a major chunk (59%) of this cost is for retaining CMWs and 25 percent for establishing work stations. The estimated annual cost to sustain one CMW is estimated at PKR 100,442, which translates into a cost per normal delivery of PKR 4,502.

Table 5: Current State of provinces regarding CMWs stipend and retention

- **Khyber Pakhtunkhwa:** Current stipend is PKR 2000 per month for the period of project life which is now extended till June 2013. Proposed stipend is PKR 7000 per month on the same basis as LHWs who are now considered as employees of Department of Health, meaning they will continue to work even after the expiry of new Integrated PC 1. These decisions are not yet final but Department of Health will soon make policy decision to ensure retention of this important human resource.
- **Punjab:** Current stipend is PKR 2000 per month for 2 years, however in the new PC-1 it is proposed to be PKR 5000 per month for 2 years.
- **Balochistan:** Current stipend is PKR 2000 per month for 2 years, however in the new PC-1 it is proposed to be PKR 5000 per month for 2 years.
- **Sindh:** PKR 2000 per month for 2 years. Furthermore, PKR. 3500 per month (PKR 2000 stipend and PKR 1500 as mess allowance) for under training CMW (period of training is 18-months).
- **Gilgit-Baltistan:** The current stipend is PKR 2000 per month for 2 years; Department of Health has submitted a PC-1 in which Grade-6 of Basic Pay Scale (BPS) has been proposed for CMWs for 3 years.
- **Azad Jammu Kashmir:** Current stipend is PKR 3500 per month and in new PC 1(currently submitted to Planning & Development Division). It has been proposed to be PKR. 8000 per month for 3 years.
- **Federally Administered Tribal Areas:** Both old and proposed PC 1 recommend a stipend of PKR 3500 per month for CMWs to be provided till the end of project life, 2017 - no additional strategy delineated for retention of CMWs in the province

Key Issues in Deployment

- **Retention of CMWs**

Variations exist in provinces regarding CMW stipend and retention period (Table 5). No policy has been enacted so far for retaining CMWs in the system once retention period is over and as a result of which CMWs will not be bound to provide field data or be technically and administratively supervised.

- **Technical supervision of CMWs**

As per PC-1, technical supervision is to be provided by CMW tutors. However, deployment guidelines suggest LHV to provide technical supervision. As CMW tutors are not always practicing obstetricians, it is difficult for them to provide technical supervision.

- **Monitoring/data/record keeping**

Currently, CMWs share data through an online data base system. Once the retention period is over, no information may be generated by them.

The consultative process commissioned by TRF has been able to develop deployment guidelines as well as related interventions and pre-requisites to ensure that deployment of CMWs is sustained and benefits the local community. However, there is an immediate need to address challenges mentioned and to make policy as well as administrative decisions as CMWs are a crucial frontline force which can help improve MNCH in Pakistan.

District Phasing - Ranking of Districts

Ranking of districts in Balochistan, Khyber Pakhtunkhwa, Punjab and Sindh was done using one direct indicator and four proxy indicators. Total number of trained and enrolled CMWS in district x was used as a direct indicator while percentage of Skilled Birth Attendants (SBAs), percentage of Antenatal care and percentage of Postnatal care in district x were taken as proxy indicators. Multiplying the score of direct indicator (Factor A) with the sum of the scores of proxy indicators (Factors B1, B2 and B3) yielded the following formula which has been applied to calculate the cumulative scores for each district:

Factor A (Factor B1+Factor B2+ Factor B3) = Cumulative score

Where,

Factor A = Score of individual district for number of trained plus enrolled CMWs till February 2010. It is calculated on a scale of 1-10 by assigning 0.5 score to each 1-5 CMWs in a reverse order. For example, if a district has 4 trained + enrolled CMWs it will score 10, or if a district has 100 or more trained + enrolled CMWs it will score 0.5.

Factor B1 = Score of individual district for percentage of SBAs (MICS, 2002-04). It is calculated on a scale of 1-10 by assigning 0.5 score to each 1-5 % in a reverse order. For example, if a district has 4% of SBAs it will score 10, or if a district has 100% SBAs it will score 0.5.

Factor B2 = Score of individual district for % of facility-