

FACTORS INFLUENCING THE PERFORMANCE OF DELIVERY CENTERS IN URBAN SLUMS OF BANGLADESH: A QUALITATIVE STUDY

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Abstract: Averting the devastating majority of maternal mortality, BRAC initiated an intervention named Manoshi in 2007; maternal, neonatal and child health programme for the urban poor of Dhaka city. It established delivery centres (DC) to provide clean and safe delivery services by community health workers (CHW) as well as referring maternal and neonatal complications to equipped hospital. Methods: The study aimed to measure the performance of DCs and explore the factors related to its performance. Data were collected using qualitative methods during December 2009 – January 2010 from six DCs in the slums of Dhaka city. Findings: Findings revealed that the DCs at Magbazar and Kamrangir Char performed ‘well’ due to availability of CHWs, their emotional support and caring attitude, regular antenatal care (ANC) visits, convenient location, cleanliness and free services of the DCs. The DCs at Madertek and Shyampur performed ‘average’ and Ramna and Kotwali DCs performed poor. Poor performance was largely due to lack of CHWs, less motivation, frequent dropout due to low remuneration, and recurrent slum demolition. The reasons for women not attending DCs were fear of being referred to the hospital which might compel them to have a caesarean delivery, lack of comprehensive services at DCs including doctor-assisted normal deliveries, medicines, and emergency case management. Neonatal mortality rate in poor performed DCs found to be high. The respondents recommended that instead of referring women for minor complications, DCs should be competent of providing supervised skilled service package with basic treatment during childbirth, tetanus toxoid during ANC and child immunizations during

postnatal care. Conclusions: Given the existing scenario, the programme needs to pay attention to the ‘poor’ performed DCs with developing alternative strategies to enhance collaboration with existing health facilities and emphasizing community mobilization on ANC, safe delivery and strengthen appropriate referral for obstetric and neonatal complications.

Keywords: Childbirth; delivery centre; factors; performance

INTRODUCTION

Inevitable demand of a society’s development process is urbanization which makes women highly vulnerable because of poor hygiene, overcrowding, lack of basic amenities, low availability and use of formal health services including maternity care in low income countries including Bangladesh [1-3]. Dhaka City Corporation of Bangladesh alone has total slum population of 3.4 million [4,5]; regardless of residing near professional care, approximately, 70% of women in urban slum give birth at home with no-medically trained providers [6,7]. Additionally, women’s experiences of the health system in low income countries found unfavourable, especially in public hospital comprises tremendous cost, lack of privacy, treated badly by health staff, unavailability of doctors and other logistic supplies [8-12]. These factors exhibits poorer outcome among urban marginalized women compared to those in rural areas during home deliveries [13]. Despite declination of maternal mortality ratio (1.94 per 1000 live birth) of Bangladesh [14], worrisome is the fact that women

and children are dying in the heart of the cities where health facilities are mushrooming [15].

Globally many strategies have been implemented preventing the overwhelming majority of maternal mortality from direct maternal causes [16]. In an effort to make pregnancy and childbirth safer by accessing continuum of life-saving obstetric care during complications [17], many western countries (Northern Europe, Canada and United States) established maternity homes for pregnant women serving in remote geographic areas since the beginning of the 20th century. Eastern Nigeria in the 1950s, trial maternity waiting homes (MWH) were established named 'maternity villages' for both urban and rural marginalized women [17,18]. MWH is a residential facility, located near the well equipped medical facility where uncomplicated pregnant women can stay shortly before delivery and await labour [8,19]. Once labour starts, women move to health facility so they can be assisted by a skilled birth attendant [20]. Traditional and modern style huts in Zimbabwe and Ethiopia with kitchen and toilet facility, women are regularly visited by a nurse, midwife or doctor [19]. In Bangladesh, the World Mission Prayer League of LAMB Hospital, Dinajpur, has a small facility where identified high risk pregnant women are encouraged to come to await delivery at the hospital since 1990. It has the facility of antenatal check-up, health education on nutrition, and free board with meals. Hospital is only a stone's throw from the waiting facility so the women can access in case of complications [17].

Considering the circumstances and with the concept of MWH, in 2007 BRAC initiated an intervention named Manoshi ; maternal, neonatal and child health (MNCH) programme customized for the urban poor of Dhaka city through domiciliary and facility approach by establishing DCs in the slums. DC provides special emphasis to assist clean and safe delivery in horizontal and squatting position with maintenance of privacy using a cadre of community health workers (CHW). CHWs includes Manoshi midwives (MMW), urban birth attendants (UBA), *Shasthya shebikas* (SS) and *Shasthya kormis* (SK) recruited from the local slum community. Expectant women are identified by SSs and SKs confirm and keep records and provide monthly antenatal care (ANC) in the community. The main constituent of Manoshi is the DC at the community setting; each DC covers a population of 10,000-15,000, adhering to set standards of hygiene and free delivery service. Birthing women are accompanied by SS and UBA participates in birth event. The activities are supervised by the programme organizers (PO). CHWs are responsible for detecting and referring

maternal complications from DCs and act as navigator seeking emergency obstetric care. Quickly after recognition they immediately inform referral POs placed in a tertiary teaching hospital and respective POs in the community [15]. It is vital to measure the performance of DCs along with recognizing women's' expectations as well as provider's technical standard [21]. The study aimed to measure the performance of DCs and explore the factors related to well and poor performance of DC in Dhaka city slums.

MATERIALS AND METHODS

Study area

The study was implemented in three slum regions of Manoshi programme (Gulshan, Dhanmondi and Jatrabari). Among the 41 DCs, the study underwent in six purposively selected DCs from Magbazar, Madartek, Kamranginr Char, Ramna, Kotwali, and Shyampur branch offices.

Study population

Study population integrated women who received care from DCs during child birth and women who did not, one month before data collection in November 2009. We purposively selected 36 women from SK registers who received antenatal care from Manoshi since the identification of pregnancy (June-October 2009). Among them, we interviewed three mothers who received delivery care from DCs and three who did not, from each DC catchments. Respondents were identified in the community with the help of key informants. Furthermore, 35 informal discussions were carried out with CHWs such as UBAs, SS, SK, MMW and PO based upon their availability in the aforementioned areas.

Study instruments

Various types of checklists were prepared to collect relevant information from the study participants. Information obtained on availability of different CHWs, numbers of expectant women identified by CHWs, numbers of deliveries at DC and at home, and numbers of referral from both DCs and home. We also collected information on a range of issues on socio-demographic characteristics, services received from Manoshi during pregnancy (ANC) and maternity care from DCs, reasons for receiving or not receiving services from DC, reasons of hospital referrals, remarks on services received, distance and communication facilities to DCs, suggestions regarding improving the services at DC. A checklist of 26-openended questions was employed to collect information on health providers' duty, workload, and reason for dropout, reason for performing well or poor by DCs, and advice for improving services.

Table 1: Process of scoring to assess DCs performance

Criterion	Last one year period	Points
1. Availability of CHWs	All found available	2
	Some cadre dropout/	1
	Unavailable	0
2. Availability of homestead service (ANC, PNC, health education)	Yes	1
	No	0
3. Availability of delivery services/ UBA	Yes	1
	No	0
4. Proportion of deliveries at DC	≥ 50%	2
	20 -49%	1
	< 20%	0
5. Proportion of referral from DC	≥ 15%	0
	10-14%	1
	< 10%	2
6. Proportion of home deliveries in DC catchments	> 50%	0
	25 -50%	1
	< 25%	2
7. Health providers behaviour	Good	1
	Harsh	0
8. Maternal outcome	In good health	1
	Maternal death	0
9. Neonatal outcome	In good health	1
	Neonatal death	0
Total		13

Data collection and quality control

Checklists were pre-tested, and the appropriateness of the language, sequencing of questions and time needed to complete the interview were assessed. One public health researcher and two research assistants (social science) involved in the study received a 2-day training consisting of lectures, mock interview and data collection procedure at community level. The interviewers used probing and question-rephrasing techniques to clarify questions and obtain details from the mothers. Field notes were taken by the researcher and research assistants in note pads.

Definition and measuring the performance of DC

In direction to determine the performance of DCs, categorization of performing well or poor was done using composite score for each criterion. Scoring and grading performed based on the programme record of last one year from the date of data collection and responses from mothers. Nine parameters were worked out including availability of CHWs, homestead and delivery care at DCs, proportion of deliveries at home and DCs, proportion of referrals, CHWs' behaviour towards women, maternal and neonatal outcome, whom coded 0 to 3 (Table 1).

The preference-ranking exercise (prepared priority inventory based on average score of listed component to explore reasons for attending or not attending

DCs) helped identifying priority responses. Using these factors, a scale was composed ranging from 0–13 to assess the performance of selected DCs. Based upon prior assessment of CHWs performance by Alam et al. [22] and assessing client perception in terms of awareness, satisfaction and service utilization by Banerjee [23], we categorized 8–13 as “well” performed DC (grade A), 5–7 as “average” (grade B), and ≤ 4 as “poor” (grade C).

ANALYSIS

The researchers read the interviews thoroughly several times to obtain logic. Then the text of the each interview was extracted and condensed into meaning units. Thereafter, meaning units were squeezed into description close to text and to make apparent the content we interpreted of underlying meaning unit. The compressed meaning units were abstracted into sub-themes. Tentative sub-themes were discussed with another researcher and revised accordingly. Finally, similar judgment and discussion resulted in agreement about how to short the sub-themes. Various sub-themes were compared based on the similar and different responses and shortened into theme [24,25]. The preference-ranking exercise, scoring and grading approach we used to identify priority responses where needed and gauged the performance of DC.

Table 2: Profile of six DCs during December 2008 to November 2009

	<i>Magbazar</i>	<i>Kamrangir Char</i>	<i>Madartek</i>	<i>Shyampur</i>	<i>Ramna</i>	<i>Kotwali</i>
Total expectant women	300	477	473	392	148	318
Total Deliveries at DC	221 (45.6%)	258 (54%)	144 (30%)	90 (23%)	28 (19%)	40 (12.6%)
Refer from DC	91 (30%)	66 (13%)	96 (20%)	101 (26%)	33 (22%)	51 (16%)
Total deliveries at home/ other places	26 (8.7%)	88 (18.4%)	100 (21%)	98 (25%)	32 (22%)	14 (4.4%)
Refer from home	20 (6.66%)	49 (10%)	71 (15%)	104 (26.5%)	20 (13.5%)	129 (40.6%)
Number of maternal death	0	0	01	0	0	01
Number of neonatal death	06	04	01	01	03	02
Neonatal mortality rate	23	12	4	5	53	39

RESULTS AND DISCUSSION

Background characteristics

Six DCs from Magbazar, Madartek, Kamrangir Char, Ramna, Kotwali, Shyampur branches were serving 22,537 households with approximately 77,357 slum population. The women who experienced childbirth in Manoshi DCs were younger (mean age 23 years) and completed primary education than the women gave birth at home. Majority of them inhabited in present dwelling for a certain extent of time ranging from 3 to 17 years; no more than 10 women were living in that place for two months to one year. Majority of them were housewives with a few involved with some income generating activities including daily wage earner, garment workers and housemaid. Diversity of occupation found in men's role which includes majority involved in services such as cleaner, factory or garment workers, cook and others were driver, van/rickshaw puller, daily wage earner and involved in small business. However, their average monthly income ranged from BDT 5,867 to 6,472. Women who were economically deprived preferred DC for having childbirth.

Except three MMWs and a PO, all CHWs were resided locally with the mean age of ranged from 24 - 35 years; UBAs were middle aged women. Range of qualifications were of CHWs includes masters (PO's), paramedics (MMW), and secondary school certificate examination (SK's). Nevertheless, SSs had formal education of 1-4 years and UBAs had none (a UBA can sign only). They received basic training from BRAC Health Programme (BHP) ranged from 7-60 days depending on their designation. Furthermore, MMWs and POs received

special training on breastfeeding, acute respiratory tract infection (ARI), neonatal sepsis and community mobilization. Alongside basic training, SS received training on maternal danger signs and nutrition, ARI while SKs mentioned including these training they received some additional training on breastfeeding, diarrhoea and management of low birth weight (LBW) babies. The main source of income all CHWs were their current job. However, every SS was found to be engaged in different font of occupation beside the assigned position for BRAC, such as tailoring, selling medicine, handicraft, making shopping bags, housemaid, counsellor of Urban Primary Health Care Project (UPHCP) and retailer. Among six UBAs, two earned extra money by tailoring and bathing dead bodies in funeral.

Annual profile of six DCs

Annually, a total of 2108 expectant women were identified, among them about 50% of deliveries were conducted in DCs of Magbazar and Kamrangir Char and 30% or less was in other four DCs. The use of DC of Kotwali was poor (13%). Simply 51 deliveries took place throughout the year at Kotwali DC. Maternal death was recorded in Kotwali and Madartek DCs but not a single death was observed in other four DCs. However, there were neonatal deaths in all the DCs. Neonatal mortality rates in Ramna and Kotwali DCs were found to be alarming; 53 and 39 per 1,000 live births, respectively. On the contrary, referring women from DC was found more in Shyampur (26%) and referral from their dwelling found to be remarkably high (41%) in Kotwali area. Furthermore, percentage of home delivery was found higher in Shyampur (25%) and Ramna (22%) than having birth at DC (Table 2).

Table 3: Performance of DCs

Parameters	Magbazar	Kamrangir Char	Madartek	Shyampur	Ramna	Kotwali
1. Availability of CHWs	2	2	1	1	1	1
2. Service availability at home(ANC, health education)	1	1	1	1	0	0
3. Service/UBA availability at DC	0	1	1	1	0	0
4. Deliveries at DC	1	2	1	1	0	0
5. Deliveries at home	2	2	2	1	2	2
6. Refer from DC	0	1	0	0	0	0
7. Behaviour of CHWs	1	1	1	0	0	0
8. Outcome (Maternal)	1	1	0	1	1	0
9. Outcome (Neonatal)	0	0	0	0	0	0
Total score	8	11	7	6	4	3
Performance of DC (%)	62%	85%	54%	46%	31%	23%
Grade	A		B		C	

Physical communication and health providers of DCs

Findings reveal that CHWs like MMWs, SKs, UBAs were available throughout the year in four DCs. *Shasthya Shebikas'* number varied from 17 to 19 in all DCs but in Ramna and Kotwali catchments eminence of CHWs was below average. Merely seven SSs were active, in addition, MMW, SK and UBA dropout were also found in these two areas. Dropout in all community health cadres was a problem in Ramna DC, and SK did not exist in Tantibazar DC catchments. In both areas, SS dropout and lack of motivation to work was found to be a challenge throughout the year; on an average only seven SSs were active. Some mothers in Ramna, Kotwali and Magbazar areas stated that they found DC was locked most of the time and the UBAs were found to be unavailable.

According to women's statement, the median distance of DCs was quite convenient (except Magbazar and Tantibazar) remained within 60 to 100 yards, 7 to 15 minutes to walk from their home and DCs found open round O'clock and four women had no idea about the opening hours and services of DCs. On an average, the way to reach DCs was narrow on average only rickshaw and tri-wheeler can reach. However, some dwelling in Ramna was linked to DC with a narrow bamboo bridge. Women explicitly expressed their fear and felt risky to use the bridge during pregnancy, especially at the moment of labour pain. Majority. Evidence from Cambodia also reported, easily accessible MWHs in the community settings enable women greater access to medical care [18].

Appraisal of DCs performance

Composite score and grading system in Table 3 showed that DCs in Kamrangir Char and Magbazar were scored 11 and 8 out of 13, in turn graded as A and categorized as "well" performed. Similarly, Madartek and Shyampur DCs were found to be scored 7 and 6, graded as B and performed "average". On contrary, DCs in Ramna and Kotwali were scored 4 and 3, graded C, and considered performed "poor".

Factors influenced DCs in performing well

After analyzing the data from in-depth interview, a wide range of reasons regarding attendance or non-attendance to the DCs during delivery were identified. The preference-ranking exercise was used to identify priority reasons for using and problems in attending DCs during childbirth.

Women's point of view

Eighteen women were interviewed whose childbirth event occurred at DCs. Majority of them received more than four ANC visits and attended meeting where they received health education on health and nutrition. They articulated that reasons for attending DCs were mostly due to cleanliness and free services as they were economically restraint accessing other health facilities (Table 4). A woman from Magbazar stated - "*Delivery centre seemed clean and beds were separated by curtain which made me feel comfortable. Moreover, BRAC apa informed me that DC charges no money for services.*" Similar finding was reported in a study and documented that women stay outside of services even when they are accessible due to out-of-pocket costs of using services including other associated expenses [26].

Table 4: Reasons for attending DCs during childbirth (women's responses)

Rank	Purpose of using DC (Responses of 18 women)	Magbazar	Kamrangir Char	Madartek	Shyampur	Ramna	Kotwali	Score
1	Cleanliness	3	3	2	2	3	2	15
2	Free services	2	2	3	3	2	1	13
3	No space at home	3	3	2	1	1	2	12
4	Well mannered CHWs	2	3	1	1	2	2	11
5	Committed financial help during referral	3	-	1	1	1		6

Table 5: Reasons for well performance of DC (Health providers' responses)

Rank	Reason for performing well	PO	MMW	UBA	SK	SS	Frequency score
1	Regular home visits	5	5	4	4	8	26
2	Safe delivery by locally familiar trained UBAs	2	5	5	6	1	19
3	Densely populated slums and no space at home	4	4	2	2	6	18
4	Proper motivation provided by CHWs	4	4	-	4	5	17
5	Good behaviours of CHWs/UBA	2	2	-	2	8	14
6	Free services	-	2	-	4	5	11
7	DCs are in the community	-	2	-	1	7	10
8	Referral system	-	2	-	2	1	5
9	No hospital in vicinity	1	1	-	1	1	4

Table 6: Priority problems in attending DCs during childbirth

Rank	Reasons for not using DC (Responses of 18 women)	Kamrangir Char	Magbazar	Madartek	Shyampur	Ramna	Kotwali	Frequency score
1	Afraid of being referred and surgical intervention	1	1	2	1	1	2	8
2	Previous home delivery	2	-	1	1	2	1	7
3	No difference from home, has no doctor, no facility for saline and oxytocics	2	-	1	-	3	1	7
4	Family oppositions	1	2	1	2	-	-	6
5	Lack of child-attendants	2	2	-	-	2	-	6
6	<i>Purdah</i>	-	3	-	1	1	-	5
7	Inconsiderate CHWs	-	-	-	1	1	1	3

This study revealed that a room limitation in dwelling was also another ground. A woman from Kamrangir Char said, "Polluted blood and water will spoil the room after delivery as we have no separate space; we all live in one room with in-laws. We cook and eat in the same place." Additionally, women mentioned, they were aware about DC's referral services in obstetric complications, CHWs assistance in arranging transport, receiving treatment in the hospital and in some cases financial aid. These factors also drove women to the DCs at any point in their process of childbirth. A woman from Shyampur mentioned – "I went DC in fear of having complications during delivery, as I knew BRAC will assist me in referring if needed. If problem would

have been arisen at home my mother and husband would not be able to transfer me to hospital for financial constraints." A study in urban slums of Bangladesh explored that support from Manoshi significantly assisted slum women in making crucial decision and arriving facility in accessing emergency obstetric care [4].

Women's remarks

Besides, women acknowledged the services of DCs which included regular ANC visits, emotional support, and caring attitude of CHWs during childbirth. UBAs tried to make them fearless and encouraged them to bear down the baby and cleaned them gently. A woman from Magbazar stated that,

“UBA was modest and cleaned my polluted blood like my mother. When I was in pain they gave me glucose drink, behaved well and asked me praying Almighty to relieve.” Last of all, no health provider claimed any tips or money from women. A patient remake is an important independent measure of the success of any health system [27,28]. Studies in different countries reported similar features: caring behaviour, being treated with respect, emotional support, communication and good information sharing, efficiency of care always remained important to the patient [29-31]. A review of published article also documented similar findings [32].

From health providers' point of view

To ascertain the idea of health providers regarding well performance, interviews revealed that in most circumstances, CHWs mentioned that good motivation in routine homestead ANC services, safe delivery at DCs by trained UBA were the pillar and modest etiquette towards birthing women acted as crucial factors of performing well (Table 5). Besides, locally recruited UBAs were familiar in the community as ‘Dai’ which made women comfortable during childbirth. In Uganda, CHWs have played a significant role to raise awareness and change health-seeking behaviour of women regarding maternal and child health [33] which is in accordance with our study.

CHWs also stated that room crisis at home and free services including referral assistance at DCs were another factors convinced women attending DCs which carried additional value for DC's performance. One SK said, “Women have no expenses, even not a single blade for cord cutting if they have childbirth at DCs. While referring any patient, we arrange transport for them, buy medicine at hospitals where needed.”

Factors influenced DCs in performing poor

Women's point of view

Women illustrated the core reason for not attending DCs and preferred home deliveries were fear of being referred to the hospital which might compel women to undergo caesarean delivery (Table 6). A woman from Kotwali said, “I did not go to the centre in fear of referral; they sent women hospital for every minor problem. I feel panic on the name of C-section.” Similar reasons for not using facilities were also reported in another study in urban slums in Bangladesh [4]. Findings presented that regulation of not using oxytocin at DCs went against the social norms. A woman from Shyampur said, “My husband said ‘why do you want to go to DC? It has no doctor and won't push you saline; you have to tolerate pain for long time’. I am calling a doctor (drug seller) from pharmacy to push saline which will relieve you early.” Studies conducted in different countries

reported that use of oxytocin to increase labour pain was a very common practice in home setting labour trial [34,35]. Other reason included family members and husbands were not so convinced taking women to DCs, lack of child attendant and guardian at home while pain started, and *purdah*. Because of *purdah*, women felt ashamed to make people know about their labour pain. Khan and Ahmed reported similar findings from a study in urban slums [31].

Providers' barriers

Findings revealed that DCs faced several challenges in poor performed area; CHWs were found to be less motivated towards responsibilities. Additionally, frequent staff dropout, especially SSs and SKs increased the obscurity which was remarkable in Ramna and Kotwali are. PO and MMW of Kotwali region stated that SSs had less interest visiting households, identify pregnant women as most of them were busy with side businesses which were more lucrative. A PO from Ramna mentioned that husbands did not want them to work at low remuneration; they resigned job after getting better opportunities. Reason for UBA's dropout was long laborious duties with low-payment. Whereas the SK's irregular monthly home visit failed to communicate and motivate women attending DC for childbirth. Demolition of slum was found to be another reason for loosing these front line workers. However, CHWs responses were identical regarding women's interest in attending DCs. Motivating women and their family members in attending DC found to be a hard job for health providers as majority of the respondents expected complete package of maternity and child health services. Family members could not distinguish DCs from their dwelling as it does not offer professional care; consequently, pre-diagnosed and predicted maternal complications were used to refer by CHWs to equipped hospital. Similar reasons were discussed in previous studies regarding the issue of poor performance or reduced utilization of health facility [17,19,31].

Performance of DC

From the above mentioned evidence, based on all study parameters Magbazar and Kamrangir Char DCs were found to be performing well. Higher proportion of deliveries took place at these DCs because of the availability of community health cadres throughout the year as well their good behaviour. Our findings are consistent with the studies in Pakistan, India, Ethiopia and Nigeria which showed that availability of health providers in the facility and accessibility to the services were the important components of increased use of health centre and also for measuring the performance as well [10,23,37]. Further, this study depicted that DCs at Ramna and Kotwali were

found to be performing poor where unavailability or lack of CHWs had been identified as a challenge. Similar findings reported in an Indian study [23]. Referring women both from home and DCs found to be high from these areas. Neonatal mortality rate of five DCs were consistent with the findings of Bangladesh Urban Health Survey 2006 [7], except Kotwali, it was quite high. Further investigation should be done in this regard.

Community expectations and suggestions for one-stop services

Women recommended that DCs should have physicians to manage the emergency cases, provision for TT and child immunizations, intravenous saline with oxytocics, free medicine during and after delivery. Women were dissatisfied when they came to know that these services were not provided by DC. Instead of referring women, DC should have the capacity of managing those poor patients as it increases delivery expenses of respective families. Results indicate that expectations of women included comprehensive services from DCs as well as skilled care. As these factors are directly related to take life saving measures; safe delivery and being cared with emotional support during crucial moment make women enthused to use health services. Similar findings were revealed from studies in Bangladesh and India [23, 31].

CONCLUSIONS

This study shows that Kamrangir Char and Magbazar DCs performed 'well', Madartek and Shyampur DCs were 'average', while in Ramna and Kotwali were found poorly performed DCs. Reasons for performing well included clean DC, free services, regular home visits, good behaviour, caring and emotional support during childbirth. On the contrary, in 'poor' performing area, CHWs were found to be less motivated, frequent dropout because of low remuneration, recurrent slum demolition, failed to communicate and motivate women to receive services from DCs during delivery. The core reasons for women's not attending DCs were fear of being referred to hospital, surgical intervention, DCs were lack of professional care and emergency medicines. Mothers suggested that instead of referring women for minor complications, DC should be competent of managing those patients including providing basic treatment during ANC and childbirth, tetanus toxoid (TT) in ANC and child immunizations during postnatal care (PNC). BRAC programme may think about on call doctors attending deliveries in DCs and labour induction can be given at DCs under supervision of MMWs in appropriate indication. Moreover, given the existing scenario, BRAC programme needs to pay attention to the 'poor' performed DCs in Ramna and Kotwali in developing

alternative strategies to enhance collaboration with existing health facilities emphasizing on community mobilization on ANC, PNC, safe delivery, and appropriate referral for obstetric and neonatal complications.

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