## Health Systems Development Programme


Health Systems Development

# Access to and Utilisation of Professional Child Delivery Services in Uganda and Bangladesh

## Bangladesh Country Report

## 2005

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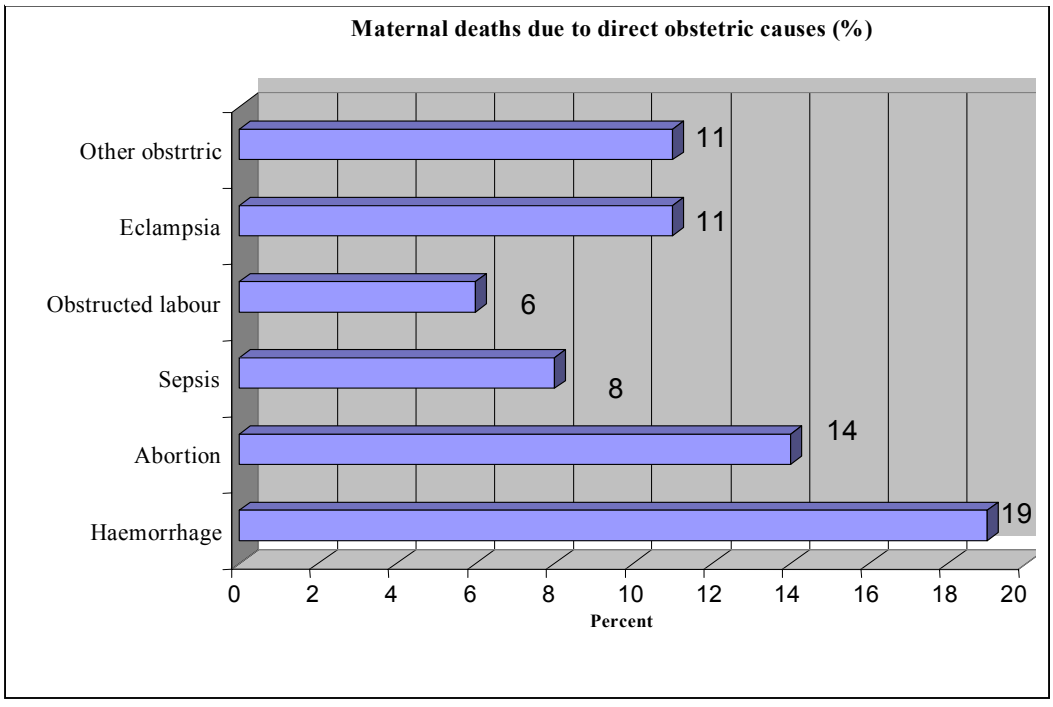
## Introduction – Maternal Health in Bangladesh

Improving the health of women during pregnancy and childbirth is an international priority, with one of the United Nations' Millennium Development Goals to reduce maternal mortality globally by three-quarters by the year 2015, with much of this reduction expected across low income countries (United Nations 2000). It is also a national priority in Bangladesh, as evidence by recent government maternal health plans (Bangladesh Ministry of Health and Family Welfare 2001).

According to the World Bank, the Maternal Mortality Ratio (MMR) in Bangladesh has declined some over the last 25 years, falling from 620 deaths per 100,000 live births in 1982 to an estimate of 440 in 2000 (World Bank 2001). Government estimates are lower, however, reporting an MMR of 320 in 2001 (National Institute of Population Research and Training, ORC Macro et al. 2003).

According to figures from a report by UNICEF and the Government of Bangladesh, 69% of maternal deaths in Bangladesh were due to direct obstetric causes, broken down as follows (UNICEF 1999):

Figure 1 - Direct obstetric causes of maternal death in Bangladesh




The primary means advocated internationally to achieve reductions in maternal mortality is through increasing the number of women who deliver with a skilled birth attendant – i.e. a doctor or nurse/midwife. Bangladesh, however, has one of the lowest rates of use of skilled attendance globally, with only 12.1% of births attended in this way, and only 7.9% conducted in health facilities (National Institute of Population Research and Training, Mitra and Associates et al. 2001).

The high MMR in Bangladesh, and low use of skilled attendance has prompted this investigation into the factors affecting women's choice and ability to use professional delivery attendance, in particular delivery in a health facility. In Bangladesh deliveries are meant to be conducted at Family Welfare Center, at the Union Level. Yet as this study found, very few deliveries were conducted there. A majority of facility deliveries are conducted at the Upazila (sub-district) and District level instead.

## Barriers to Care

A good deal of literature, both in Bangladesh and internationally has identified a number of barriers faced by women in seeking professional health care, particularly for maternal services such as childbirth.

Internationally common barriers include:(Kutzin 1993; Thaddeus and Maine 1994; WHO 1998; Ensor and Cooper 2004)

- Distance – In particular for rural areas with poor road access to hospitals;
- Cost – Including formal and informal cost of services, opportunity costs of attending distant services, and costs of transportation;
- Perceived Quality – Where users do not have faith in professional services;
- Socio-Cultural – Which can include a number of potential barriers including norms for women to deliver in the home, or traditional taboos opposing biomedical practices (such as the need for privacy or alternative delivery positions);
- Intra-Household Relations – Including the family relationships and dynamics, women's negotiating power, and the prioritisation of maternal health within families;

Such barriers have also been identified in several studies in Bangladesh (Nahar and Costello 1998; Afsana and Rashid 2000; Rahman 2000; Afsana and Rashid 2001). Yet while each of these barriers has been identified, most of the local literature on the subject also tends to either simply list these barriers, or focus on one particular barrier as paramount, depending on the disciplinary slant of the author. Maine, for instance, appears to believe that the primary barrier is the number or quality of health facilities, arguing that what is needed in many places is provision of emergency care services (Maine 1999). Some evidence for this position comes from a study in the Matlab region of Bangladesh, where falling maternal mortality was attributed to improved services, consisting of a combination of community midwives, clinic based physicians, and the government hospital (Maine, Akalin et al. 1996). Yet in contrast to this view that referrals and outcomes can be improved by focusing on service provision, others have emphasised the socio-cultural barriers faced, giving in-depth explanations as to why Bangladeshi women are expected to not use professional services, and how delivery is seen as a 'natural' event, not requiring medical assistance (Blanchet 1984; Afsana and Rashid 2000).

Paul and Rumsey have recently published results from a household survey in Bangladesh, attempting to find what socio-economic or demographic indicators best predict the use of a trained birth attendant (they include specifically trained TBAs).

They found that experiencing or anticipating birth complications was the overwhelming factor, with an odds ratio (OR) showing women with complications to be 20.79 times more likely to seek professional assistance. After this, however, significant factors influencing choice of attendant included: maternal education (OR 3.78 for over 5$^{th}$ grade education, 1.91 for up to 5$^{th}$ grade), paternal education (OR 1.82 for over 10$^{th}$ grade), and use of pre-natal care (OR 1.76) (Paul and Rumsey 2002).

These results raise a number of interesting questions. Aside from the obvious fact that complicated cases tend to be those treated professionally, the authors also found maternal education to be a strong determinant of use of services. One can ask which access barriers this may help to overcome. Education may lead to higher income, so it may help overcome cost barriers, yet paternal education would probably be as important, if not more important for household income in Bangladesh. Similarly, wealthier or educated families may live closer to town centres, yet Paul and Rumsey's study also included questions on distance from facilities, and found it not to be a significant determinant of use (dividing couples as less or more than two miles from a centre). It is unlikely that female education will change the perceived quality of care of facilities (although it may lead to better understanding of medical care), and so most likely female education helps to overcome family and socio-cultural barriers to seeking care. Indeed, Afsana and Rashid also found the younger more educated women less willing to embrace traditional views on childbirth.

Rahman also investigated the barriers to utilisation of maternal health care in rural areas of Bangladesh, considering both the provider and user perspectives. The study found that quality of care in public facilities was the main determinant of service utilisation. Family education and younger age of the woman were also found to be correlated with the use of professional care during pregnancy and after delivery (Rahman 2000).

Blanchet and Afsana and Rashid undertook anthropological studies of Bangladeshi birth practices, and have described the many ways that women are expected to deliver in the home, and how unknown men should not interact with women, leading to a barrier in use of health services (Blanchet 1984; Afsana and Rashid 2000). Importantly, however, Blanchet also documents in detail the pluralistic beliefs of rural Bangladeshi's, and how multiple spirits could be seen as causing illness, even Hindu ones which Muslims theoretically did not believe in. She also states how when ill, multiple healing sources can be used – describing the local views that when ill a person is neither Hindu nor Muslim, but instead needs to get well. To do so, multiple *tabiz* (healing or protective amulets) would be used. She explains "a suffering person is not sectarian. The best *tabiz* is the most potent wherever its power comes from" (Blanchet 1984). In such a case, it is conceivable that when ill enough, professional medical facilities may be consulted as yet another option to help an ill person – the healing of which seems to take precedence over many other socio-cultural beliefs.

The various results of these studies emphasise the ways that social worlds are complex, and rarely described by one-sided explanations. So for example, social norms to deliver at home may be intractable tenets of cultural systems, or they may be used more as explanatory factors when there is a lack of nearby health centres. Cultural beliefs may be entrenched in societies, or they may be fluid and changing,

with younger generations challenging the ideas of the past. And quality improvements in professional medical services may also help to overcome socio-cultural barriers, as Blanchet's study indicates that religious identities appear to be suspended or less important during a period of critical illness, although it is unclear if the stigma of being seen by an outside male would really be ignored in such cases – the question is when is it acceptable to do so? The high odds ratio found by Paul and Rumsey also seems to indicate that conceptualisation of complications may over-ride other potential barriers.

These questions and possibilities are of key importance for a public health strategy attempting to increase the number of deliveries in medical institutions. The identified barriers to access mentioned above may be interlinked, or play off each other in ways that need investigation at the community level if we are to go beyond a simple list of possible barriers to individuals, and move into an understanding of how communities engage with health systems. Furthermore, it is not clear if certain barriers really are more important than others for particular communities, leading to questions such as: would improvements in quality lead to greater utilisation than education campaigns? Or can distance problems be overcome by early planning? Finally, it is clear that some women are able to access services while others in the same community seem unable to do so. What is not well understood is why those women are able to do so, and how they are able to overcome all of the access barriers.

## Aims and Objectives

This study aimed to understand more about how some women use health facilities for child delivery.

The primary objectives of the research were to:

- Learn more about the relative importance of access barriers
- Learn how some women overcome known access barriers
- Understand what factors influence women's ability to use delivery services in facilities
- Understand more about the roles of communities and social networks in these decisions

## Study Methods

This study was conducted in two countries, Uganda and Bangladesh, by members of the Health Systems Development Programme. This paper reports on the findings from Bangladesh only.

The Bangladesh study was conducted in Jhenaidah District, which is located in the south west of Bangladesh, about 230 km from the capital city of Dhaka. The district has a population over 1.5 million. It is divided into five Upazilas (sub-districts) plus Jhenaidah sadar Upazila (Jhenidah town). The study covered all five Upazilas of the district and selected public and private health facilities of Jhenaidah sadar Upazila.

This study consisted of three primary elements leading to unique data sets. The elements are described as follows:

Facility Checklists – A quantitative tool which gathered data from health centres performing deliveries in Jhenaidah district. It collected information on numbers of deliveries in the last year, home village of women who used the facility, drug and supplies in stock, staff numbers, and some observational data. 22 Facilities were included: all 5 Upazil Health Centres (UHCs), the District Hospital and the Maternal and Child Welfare Centre (MCWC), 10 Family Welfare Centres (FWCs), and 5 private facilities.

Recent Use Surveys – These Consisted of quantitative surveys that covered 13 facilities in the district, including all UHCs, the District Hospital and MCWC, one FWC which conducted deliveries, and 5 private facilities. The surveys asked at least 20 recent users of the facilities (women who had delivered there in the last 6 months), to answer quantitative questions including the staff which attended their delivery, the costs involved, and transportation to the facility. Sampling was done from facility registers, attempting to find the most recent users, and working backwards through the register until found and interviewed at least 20 women. In total, 272 recent use surveys were conducted

User Interviews – 30 in-depth qualitative interviews were conducted with women who recently delivered in a health centre (in the past year). The interviews were open and semi-structured, with fieldworkers investigating four main themes in the interviews: decision making, barriers to care, social networks, and community views and norms. Women were selected arbitrarily from the registers facilities visited – although some purposive sampling was done to ensure women were selected who lived at varying distances from the facility.

A Summary table of the facilities included in each data set is given below, with numbers of individuals identified from each type of facility also given for tools which sampled individuals.

Table 1 - Summary of sampled facilities – numbers of each type of facility with number of individual users sampled from each level facility in parentheses:

| **Data sets** | **Facilities covered in sample** | | | | |
|---|---|---|---|---|---|
| | District Hospital | Upazila Health Centre | Maternal and Child Welfare Centre | Family Welfare Centre | Private Facilities |
| **Facility checklists** | 1 | 5 | 1 | 10 | 5 |
| **Recent use survey** (N from each facility - 272 interviews in total) | 1 (20) | 5 (108) | 1 (21) | 1 (22) | 5 (101) |
| **Users interviews** (N from each facility - 30 interviews in total) | 1 (2) | 5 (23) | 1 (1) | 0 (0) | 4 (4) |

**Research team and field work**

The study was conducted by team of researchers drawn from Bangladesh and the United Kingdom. Dr. Justin Parkhurst, Lecturer, London School of Hygiene and Tropical Medicine headed the team as Principal Investigator (PI) while Dr. Syed Azizur Rahman, Research Fellow, LSHTM, worked as Co-principal Investigator. Dr. Mustafa Kamal was recruited as project manager for the study. Six Bangladeshi field research assistant were also recruited for data collection: Tofajil Ahmed, Ruma Begum, Nazul Islam, Ringku Mistry, Mijanur Rahman, and Zakrin Sultana. Field researchers worked in teams of two (one male, one female) and the project manager supervised the day to day data collection in the field in order to control the quality and completion of the data. The research team was given training before piloting the research tools and final data collection. The PI (Parkhurst) visited the field during piloting, and the co-PI (Rahman) visited during the data collection to oversee the research and check the data quality. .

**Problems with data**

The users included in the 'recent use survey' were meant to be fairly representative, and picking the most recent users was seen to avoid bias as delivery times are fairly random. We did not expect much seasonal variation in types of users. However, fieldworkers reported that women were hard to find if the address listed had been their father's home, which they subsequently moved away from after the delivery. This may mean that the recent use survey or user interviews under-represented women who had moved to their parents' home for the delivery, which is common for first births.

There was some potential bias in respondents answers in the quantitative recent use survey, however. The field work coordinator explained that women often believed that people asking questions were representatives of the government, which could lead to bias to report better quality, lower costs, or increased likelihood to re-use the facility. This bias must be acknowledged as a possibility, and, therefore, might be stronger in asking women about use of public facilities. However, comparison between public facilities, or between private facilities should still be feasible by looking at differences given this bias possibility.

Qualitative data was collected in Bangla as field notes, and then the notes were written up in English. Upon completion of the fieldwork, the PI collected this data and went through each interview with the field researchers, asking for more information and clarification when needed. While not ideal for qualitative research, the presence of two researchers in the interview and the review of each case by the PI with the research teams was seen to help overcome data loss and misinterpretations of responses by interviewees.

## Quantitative Data and Results

Quantitative data was primarily aimed to learn more about access barriers and the relative importance of such barriers. The Facility Checklists and Recent Use Surveys consisted of structured questionnaires to collect relevant information systematically.

**Number of Deliveries**

22 facilities were visited and records checked to see the number of deliveries conducted over the previous 12 months (July 2000-June 2003). The following table illustrates the findings. Private clinics included are italicized. The MCWC and District hospital serve the entire district, while the UHCs are meant to serve their specific Upazila.

Table 2 - Deliveries by facility, Jhenaidah district (Facility data from review of facility records, population data from district records)

| Facility | Upazila female population | Non-Complicated Deliveries | Complicated Deliveries | Percent Complicated | Deliveries per 1000 women served |
|---|---|---|---|---|---|
| MCWC | | 483 | 1 | 0.2 | |
| District Hospital | | 1239 | 104 | 7.7 | |
| Moheshpur UHC | 142,000 | 134 | 0 | 0 | 0.94 |
| Kaligonj UHC | 122,000 | 442 | 18 | 3.9 | 3.77 |
| Kotchandpur UHC | 65,000 | 479 | 0 | 0 | 7.36 |
| Horinakundu UHC | 88,000 | 305 | 21 | 6.4 | 3.70 |
| Shailakupa UHC | 172,000 | 408 | 34 | 7.7 | 2.56 |
| Shemla Rokonpur FWC | | 0 | 0 | | |
| Elangy FWC | | 0 | 0 | | |
| Baidanga FWC | | 0 | 0 | | |
| Fatehpur FWC | | 0 | 0 | | |
| Boluhar FWC | | 0 | 0 | | |
| Khalishpur FWC | | 0 | 0 | | |
| Maharajpur FWC | | 0 | 0 | | |
| Zoradah FWC | | 0 | 0 | | |
| Baro Bazar FWC | | 30 | 0 | 0 | |
| Dudshar FWC | | 0 | 0 | | |
| **Total – public facilities** | **765,000 (total in district)[1]** | **3520** | **178** | 4.8 | 4.83 |
| *Modern Surgical Clinic* | | 7 | 79 | 91.9 | |
| *Hatgopalpur Surgical Clinic* | | 6 | 20 | 76.9 | |
| *Srizony Hospital* | | 9 | 42 | 82.4 | |
| *Janata Clinic* | | 0 | 119 | 100 | |
| *Polli Hospital* | | 16 | 43 | 72.9 | |
| **Total – private facilities** | | **38** | **303** | 88.9 | |

Unsurprisingly, the District Hospital in Jhenaidah town conducted far more deliveries than any other facility. However, what was surprising was that only one FWC (Baro Bazar) was found to have done any deliveries over the prior year. Fieldworkers reported two possible explanations for this. First, it was reported that the FWV (Family Welfare Visitor) who staffs the FWC often would conduct deliveries in people's homes, which were not included in facility records. Additionally, it was reported that many FWVs were on assignment to the MCWC in Jhenaidah town,

[1] This total includes the Upazila population and the population in Jhenaidah town which is a separate administrative unit.

which would leave the local FWCs idle or closed. Indeed, the MCWC records for staff reported 4 FWVs on assignment in this way.

In terms of the five private clinics included, as shown, these clinics almost exclusively dealt with complicated cases. One reason may be a lack of capacity (staff or equipment) to undertake caesarean sections in public facilities. However, it was reported that often doctors who work in public health clinics refer women to their personal private clinics for caesarean section. The low numbers of caesareans in public facilities also shows that complicated cases are usually handled in the private sector.

*Caesarian section capability*

It is difficult to assess the capabilities of facilities to provide caesarean sections at any point in time, but the facility checklists would appear to indicate some capability to undertake the procedures. The following summarizes some key responses for the higher level public facilities (UCHs, MCWC, District Hospital):

Table 3 - Public facility capacity comparison

| Facility | Functional Operating Theatre? | Number of Doctors | Numbers of Anesthetists | Number of complicated deliveries (past year) |
|---|---|---|---|---|
| MCWC | Yes | 1 | 1 | 1 |
| District Hospital | Yes | 20 | 0 | 104 |
| Moheshpur UHC | Yes | 3 | 0 | 0 |
| Kaligonj UHC | Yes | 6 | 0 | 18 |
| Kotchandpur UHC | Yes | 5 | 0 | 0 |
| Horinakundu UHC | Yes | 4 | 0 | 21 |
| Shailakupa UHC | Yes | 4 | 1 | 34 |

The lack of anesthetists could be a barrier to performing caesareans, as shown by the fact that the only UHC with an anaesthetist, Shailakupa, had a higher number and proportion of complicated deliveries than any other UHC. Jhenaidah district hospital, however, reported conducing 104 complicated deliveries without any anaesthetists, with an equal percentage of complicated deliveries as Shailakupa UHC. All facilities reported having a functioning operating theatre.

**Average cost of deliveries by facility**

One known access barrier is the cost involved in facility delivery. While services at the public health care facilities are meant to be free in Bangladesh, it is widely recognised that there may be several costs involved despite this policy. Women and their families often have to purchase drugs and supplies such as gloves. At times these are purchased in the facility, at other times they are obtained from outside sources. Tips are common to give to staff as well, and there may be other minor expenses for food and other items. Direct payments to staff for services are not spoken of, but in many cases the tips and purchase of drugs and supplies meant to be free may serve as informal payment for services. The recent use survey included

questions about the costs paid for care in the recent delivery. The reported total costs paid, and costs for transport were averaged for each facility as follows:

Table 4 - Average delivery costs paid, by facility (Bangladesh Taka)

n indicates the number of women surveyed for each facility and type of delivery

| | Cost - Uncomplicated Delivery | | Cost - Caesarean Section | | Cost - Episiotomy Required | | Transport cost | |
|---|---|---|---|---|---|---|---|---|
| **Facility** | Mean | n | Mean | n | Mean | n | Mean | Total N |
| Kaligonj UHC | 505.29 | 21 | 3031.00 | 1 | 763.50 | 2 | 39 | 24 |
| Shailakupa UHC | 432.54 | 13 | 3405.00 | 2 | 942.71 | 7 | 73 | 22 |
| Horinakundu UHC | 505.69 | 16 | 5320.00 | 4 | 700.00 | 1 | 49 | 21 |
| Moheshpur UHC | 436.00 | 19 | . | 0 | 267.50 | 2 | 63 | 21 |
| Kotchandpur UHC | 556.12 | 17 | . | 0 | 431.67 | 3 | 44 | 20 |
| District Hospital | 512.93 | 15 | 3266.67 | 3 | 442.33 | 3 | 154 | 21 |
| MCWC | 296.14 | 14 | . | 0 | 352.50 | 6 | 173 | 20 |
| Barobazar FWC | 388.24 | 21 | . | 0 | 800.00 | 1 | 45 | 22 |
| Janata Clinic | . | 0 | 4011.25 | 20 | . | 0 | 59 | 20 |
| Hatgopalpur Surgical Clinic | 1095.10 | 10 | 5038.00 | 9 | 869.00 | 1 | 57 | 20 |
| Mordern Surgical Clinic | . | 0 | 4766.05 | 19 | 3050.00 | 1 | 72 | 20 |
| Polli Hospital | 1447.50 | 4 | 5954.27 | 15 | 2000.00 | 1 | 122 | 20 |
| Srijoni Hospital | 1102.50 | 2 | 5169.21 | 19 | . | 0 | 102 | 21 |

The summary table indicates that the cost of normal deliveries is considerably lower in public facilities than in private clinics. Caesarean sections tend to be significantly more expensive in both settings, but again, prices were on average higher in the private clinics, with the exception of Horinakundu UHC where a caesarean birth cost over 5000 Taka on average. However, relatively few women sampled had caesarean deliveries in public facilities, and the sample size is not large enough to give reliable estimates. As might be expected, transportation costs were higher for district level public facilities, as women may have travelled from remote locations to get there.

Costs for deliveries requiring episiotomies were also typically higher than normal deliveries, although in four facilities, including the district hospital, this was not the case. However, numbers of women included in the survey who had episiotomies were quite low (often only one or two were listed), so it is difficult to see these amounts as representative.

Interestingly, the lowest costs were seen to have been paid at the MCWC, a District level facility – where the average of 296 Taka was even lower than fees paid at the one FWC conducting deliveries. Also of note is that Kotchandpur UHC had the highest average cost paid for a normal delivery.

As drugs and supplies are often purchased, one of the explanations of price difference could be related to which facilities had drugs and supplies in stock, or how much selling was involved for these items

**Drug and Supply Availability**

The facility checklist asked about the availability of key medications and supplies in the facility on the day of visit.

The drugs included were:

1. Folic acid / iron tablets
2. Fansidar
3. Crystalline penicillin
4. IV dextrose / glucose
5. Ergometrine
6. Diazepam / vallium
7. Gentamycine injectable
8. Erythromycine
9. Paracetemol / panadol
10. Lidocaine / lignocaine
11. Other general antibiotics
12. Oxytocin
13. Pethidine injectable / morphine

(Magnesium sulphate, for the treatment of eclampsia, was unfortunately not included in this list)

Key supplies asked for were:

<u>General supplies</u>:

1. emergency lighting
2. gloves
3. mackintosh
4. thermometer
5. sterile gauze pads
6. suture material
7. bleach or other infection control regents
8. bulb syringe
9. needles and syringes
10. IV fluids and giving sets
11. Theatre linen (when have a theatre)

<u>Antenatal care equipment</u>:

1. Tape measure
2. Adult weighing scale
3. Height measuring device
4. Fetascope
5. Blood pressure cuff
6. Uristicks
7. Syphilis tests
8. Vaginal speculum (Sims)
9. Vaginal speculum (Cusco)

Delivery room equipment:

1. Baby weighing scale
2. Delee suction
3. Baby ambu bag
4. Delivery bed
5. Manual hand-operated vacuum extractor
6. Cord clamp (placenta forceps)
7. Foetal heart monitor
8. Partograph (and asked if used regularly)
9. Fetascope

The following table summarises the findings in terms of supply and drug availability in the facilities conducting deliveries

Table 5 - Drugs and supplies missing, by facility

| Facility | Number of key drugs missing | Number of key Supplies missing | Number of Delivery room supplies missing | Number of ANC Supplies missing |
|---|---|---|---|---|
| MCWC | 4 | 0 | 2 | 2 |
| District Hospital | 4 | 0 | 4 | 4 |
| Moheshpur UHC | 6 | 0 | 5 | 3 |
| Kaligonj UHC | 7 | 0 | 4 | 2 |
| Kotchandpur UHC | 10 | 0 | 3 | 2 |
| Horinakundu UHC | 3 | 0 | 3 | 3 |
| Shailakupa UHC | 4 | 0 | 0 | 2 |
| Baro Bazar FWC | 13 | 8 | 9 | 5 |
| Modern Surgical Clinic | 2 | 0 | 6 | 4 |
| Hatgopalpur Surgical Clinic | 2 | 0 | 6 | 3 |
| Srizony Hospital | 1 | 0 | 4 | 1 |
| Janata Clinic | 2 | 0 | 5 | 1 |
| Polli Hospital | 1 | 0 | 5 | 4 |

While missing drugs and supplies may be indications of poor quality, many families do bring their own drugs and supplies, or purchase them from sellers located near the health centre. Therefore, these findings are not a very strong predictor of quality of care or availability of supplies on their own. It is worth noting that the one FWC found conducting deliveries, Baro Bazar, was missing all of the drugs asked for, and more supplies than any other facility. FWCs are not meant to be as well equipped as other facilities, however, and are not meant to perform complicated deliveries, but the lack of supplies and drugs may be a deterrent to use of FWCs – indeed, although not included in the table above, the other FWCs visited had similar shortages of drugs and supplies, with only one FWC having any of the drugs asked about in stock.

**Comparison between UHCs**

To understand more about the access barriers faced by women, and the relative importance of access barriers, we can look to compare the utilisation of facilities which differ in key ways such as cost or distance from population served. To do so requires looking at similar facilities, of similar standards. It was hoped that several FWCs would provide data for comparison. As shown, however, only one FWC

surveyed conducted any deliveries. Therefore, the five UHCs provide the only equal level of facility to enable comparison in the district.

Again, the deliveries for the five UHCs were as follows:

Table 6 - Deliveries by Upazila Health Complex

| UHC | Number of Normal Deliveries | Number of Complicated Deliveries | Total number of Deliveries | Upazila Female Population | Deliveries per 1000 women |
|---|---|---|---|---|---|
| Moheshpur UHC | 134 | 0 | 134 | 142,000 | 0.94 |
| Kaligonj UHC | 442 | 18 | 460 | 122,000 | 3.77 |
| Kotchandpur UHC | 479 | 0 | 479 | 65,000 | 7.36 |
| Horinakundu UHC | 305 | 21 | 326 | 88,000 | 3.70 |
| Shailakupa UHC | 408 | 34 | 442 | 172,000 | 2.56 |

From this brief summary, it is clear that Moheshpur UHC stands out in the low number of deliveries conducted. Kotchandpur had the most, but numbers were similar to Kaligonj and Shailakupa. Horinakundu also saw fewer deliveries, but was closer in number to the other facilities than Moheshpur.

Additional population data provides other insights into these figures. Moheshpur UHC saw less than 1 delivery for every thousand women in the Upazila, while Kotchandpur stands out with over 7 deliveries per 1000 women served – more than twice the use rate of any other UCH. The overall district figure was 4.83 deliveries per 1000 women done in public facilities.

To understand the differences in delivery numbers, we can try to look at other indicators of access barriers, such as cost, distance, and quality of care of each facility.

Cost data has been shown already in **Error! Reference source not found.**. Interestingly, Kotchandpur, as mentioned already, had the highest average cost for normal uncomplicated deliveries. It would appear that for these amounts of money paid, the increase cost did not serve as a deterrent to use.

*Quality of care*

In the facility checklists, several measures can be seen to be somewhat indicative of quality, including staffing numbers and drug and supply availability. But this must be approached carefully due to the known practice of people buying and bringing their own drugs and supplies. Indeed, Kotchandpur, which was said to be more popular, which saw much higher utilisation rates, and which even apparently charged more for normal delivery, also had the fewest key drugs in stock – which would indicate that it may not be an appropriate measure of quality in this setting.

The recent use surveys also had questions indicative of quality, including asking how staff treated the women, rating of staff skills, asking if they would use the facility in

the future for delivery, and a more general question on why they chose the facility (with 'known to be good quality' one possible answer).

The question on staff treatment was coded into 4 answers:
1 – Friendly/Concerned
2 – Not particularly friendly, but not bad in any way
3 – Verbally abusive
4 – Physically abusive.

Assigning a value of 1-4 to the answers based on this and averaging among recipients gives an 'average staff treatment score' – where 1 is the best treatment and 4 would represent the worst (with all women saying staff were physically abusive). This scale is only useful as a comparison tool of course.

Similarly, the question on how women would rate staff skills was also coded into 4 answers:

1 – Highly skilled
2 – Satisfactory skills
3 – Poorly skilled
4 – No skills at all

Again, a similar average score can be calculated, where a score of 1 being the best skill rating and 4 the worst.

The following table summarises these findings.

Table 7 - Quality of care indicators, Upazila Health Complexes

| | *Data from facility checklists* | | | | | | | *Data from recent use survey* | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **UHC** | **Number of Deliveries** | **# per 1000 women** | # Doctors and Anaesthetists | # Nurses and Midwives | # Nurse assistants and FWVs | # Drugs Missing | # Delivery room supplies missing | Average staff treatment score * | Average staff skill score * | % Reporting would use this facility again | % Reporting quality was reason for choice |
| Moheshpur | **134** | 0.94 | 3 | 10 | 3 | 6 | 5 | 1.52 | 1.10 | 81% | 42.9% |
| Kaligonj | **460** | 3.77 | 6 | 8 | 5 | 7 | 4 | 1.79 | 1.50 | 87.5% | 20.8% |
| Kotchandpur | **479** | 7.36 | 5 | 9 | 4 | 10 | 3 | 1.40 | 1.35 | 85% | 30% |
| Horinakundu | **326** | 3.70 | 4 | 10 | 4 | 3 | 3 | 1.76 | 1.62 | 42.9% | 22.7% |
| Shailakupa | **442** | 2.56 | 5 | 11 | 4 | 4 | 0 | 1.77 | 1.23 | 81.8% | 18.2% |

* Note – Lower numbers indicate better staff treatment and staff skill score.

Moheshpur clearly has fewer doctors and anaesthetists than the other UHCs, as well as fewer nurse assistants or FWVs. It also has more delivery room supplies missing. Indeed, the research team who conducted the fieldwork expressed the opinion that Moheshpur was the most remote of the Upazilas, but also that the quality may not be good. It was said that many people from Moheshpur travelled to Kotchandpur or even crossed the border to India to deliver.

However, in many other quality measures from the recent use survey, Moheshpur stands out as doing particularly well. It had one of the lowest (and therefore better) staff treatment scores, and a high proportion of women in the recent use survey said they would use the facility again. It also had the lowest (and therefore best) staff skill score – with 19 of the 21 women surveyed rating the staff as 'highly skilled'. The recent use survey further shows a much higher proportion of women stating they came to Moheshpur because they knew it was a good quality facility – with 42.9% of women giving this as a reason for attending the facility, while the next highest was only 30% for Kotchandpur. It is curious why a facility of known and reported good quality would see lower use, with a particularly low rate per 1000 women served. These data appear to contradict other studies which show women's desire to bypass local facilities for better quality elsewhere, and may indicate a lower importance of quality of care in this region in comparison to other barriers, such as transportation problems. However, there may be some selection bias for the facilities – that is to say, it may be only a small number of women who see Moheshpur as good quality, but those may be the only ones willing to travel to use the facility. This is one possible explanation for the lower use numbers, but better quality scores – distance and other barriers may weed out use by those who would report the service as poor quality. Further investigation into the transport and quality realities in the facility is needed, however, to confirm any such hypothesis.

Horinakundu stands out in the table for having the lowest proportion of women in the recent use survey say they would use the same facility again, at only 42.9%, when over 80% of women surveyed who used other UHCs stated this. Yet Horinakundu had the highest number of deliveries of the UHCs – which raises questions as to why women would not wish to re-use this facility. It could be that Horinakundu had some of the best transportation access, which allowed many emergency cases to be admitted – women who might not have chosen to go to a facility in the first place. This is simply speculation but might account for results seen. More in-depth investigation with users of facilities could help explain these findings.

*Cost of care*

Reproducing some of the data from Table 4 summarises the differences in average costs charged across the UHCs:

Table 8 - Costs of delivery, Upazila Health Complexes

| Facility | Uncomplicated | Caesarean | Episiotomy required | Total N |
|---|---|---|---|---|
| Kaligonj UHC | 505.29 | 3031.00 | 763.50 | 24 |
| Shailakupa UHC | 432.54 | 3405.00 | 942.71 | 22 |
| Horinakundu UHC | 505.69 | 5320.00 | 700.00 | 21 |
| Moheshpur UHC | 436.00 | N/A | 267.50 | 21 |
| Kotchandpur UHC | 556.12 | N/A | 431.67 | 20 |

There are few obvious differences between facilities as far as costs are concerned. Moheshpur, with its low number of deliveries, in fact had some of the lowest average costs involved for the delivery, according to the recent use surveys. Caesarean deliveries were noticeably more expensive at Horinakundu, and there is great variation in costs associated with a delivery requiring an episiotomy – but these last two indicators are based on very small sample sizes from the recent use survey, which may lead to such variation, particularly as many payments are informal and user influenced, such as tips to staff.

*Distance and Transportation*

Recent use surveys also asked women about distance travelled to use facilities, mode of transport, and transport costs involved in using the facility, with results summarised in the following table:

Table 9 - Transportation to facilities, by Upazila Health Complex, data from recent use survey

| Facility | Average travel distance reported (km) | Average cost of transport (Taka) | Mode of transport: % reporting | | |
|---|---|---|---|---|---|
| | | | Walked | Pedal vehicle | Motor vehicle |
| Kaligonj UHC | 2.6 | 39 | 8.3 | 91.7 | 0 |
| Shailakupa UHC | 5.3 | 73 | 0 | 100 | 0 |
| Horinakundu UHC | 3.4 | 49 | 19.0 | 76.2 | 4.8 |
| Moheshpur UHC | 5.6 | 63 | 0 | 100 | 0 |
| Kotchandpur UHC | 4.7 | 44 | 0 | 100 | 0 |

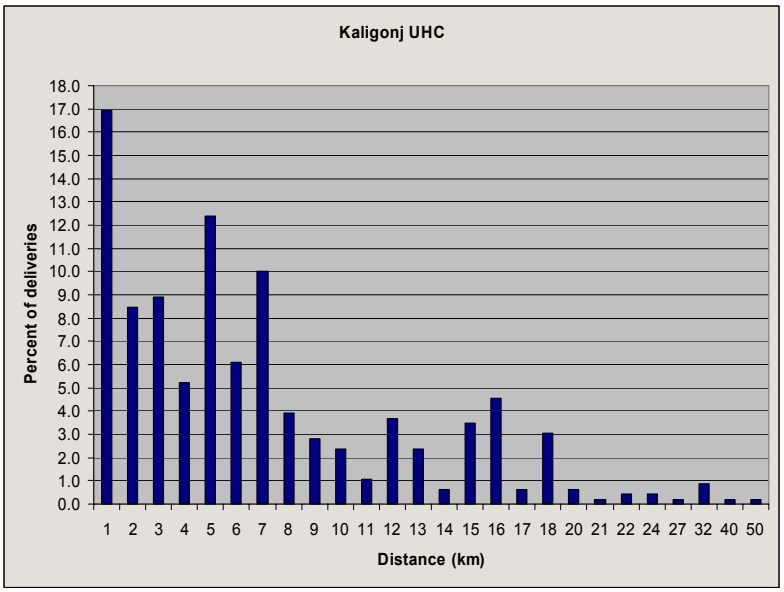
Most women surveyed used some kind of non-motorised pedal driven transportation to reach the facility, such as a rickshaw, bicycle with seats on the back, or 'van' – a three wheeled pedal driven platform. Horinakundu and Kaligonj had several women reporting they walked to the facility, which would provide some indication of a population located close to the facility (and distance barriers being less for these facilities). Indeed, these two UHCs had the lowest average distance reported in the recent use surveys.

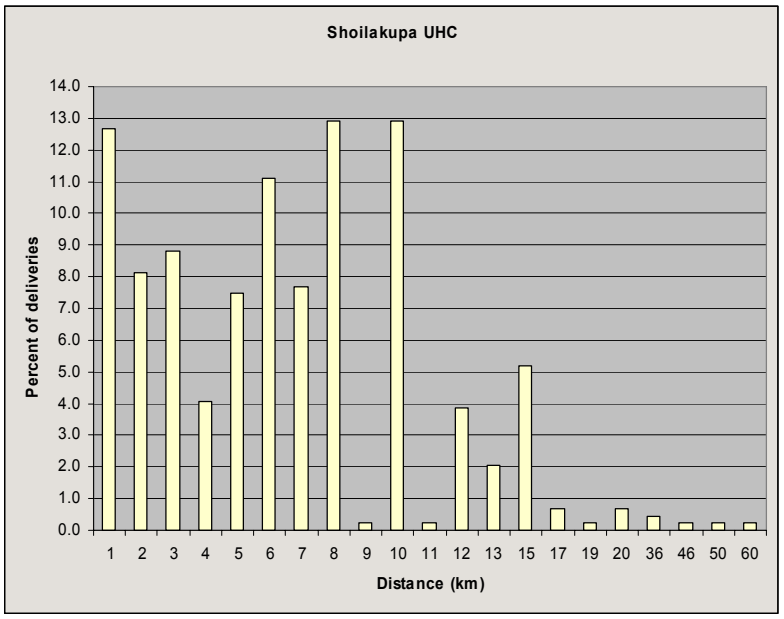
The cost of transport on average appear correlated with the average distance, as the lowest costs were also found for Kaligonj, and higher costs on average for Shailakupa and Moheshpur. These costs, however, are much smaller than the total costs paid for the deliveries outlined in Table 8, so on their own most likely do not act as a major deterrent to care.

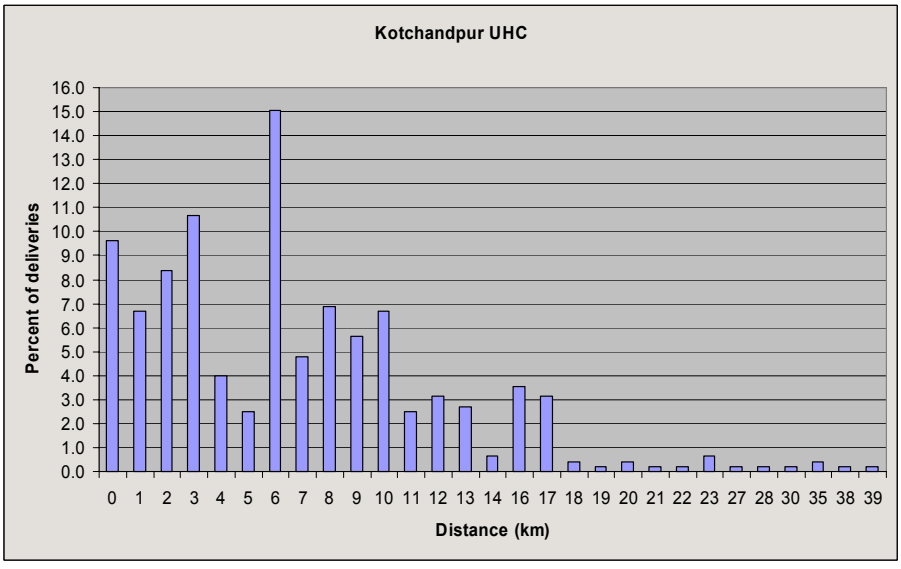
Users of Shailakupa and Moheshpur had the highest average distances at over 5km. A high average distance of travel can indicate one of two phenomena. First, it may be that some Upazilas are more densely populated than others. A densely populated area, with a built up town centre, may see lower average distances simply because more people live close to the health centre. It may be that Moheshpur and Shailakupa have their populations spread across a greater distance, with less concentration in towns (a population map would be needed to confirm this). However, another

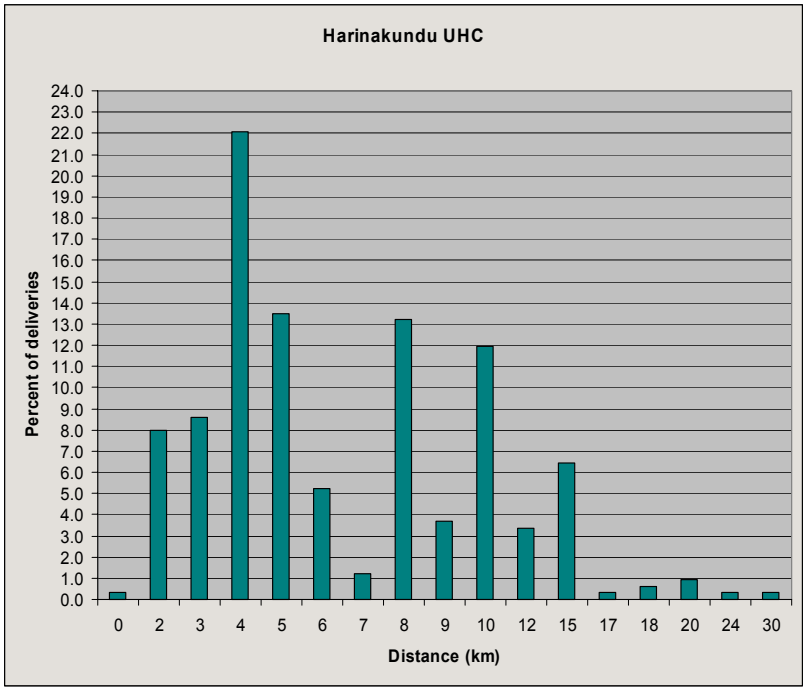
explanation can be a greater willingness for people to travel to the facility, as might be the case if the perceived quality was high. So the distance information above may indicate a greater willingness to travel to Moheshpur and Shoilakipa than to Kaligong and Horinakundu, which had the lowest average distances. In such cases, however, one would expect higher utilisation in the cases where average distance travelled was high – as the same reasons attracting women from far away would equally draw those living close. In this case Moheshpur has the lowest number of deliveries, and Shailakupa was in the middle of the 5 facilities. Therefore, most likely these distance differences appear to be due to population density or easy of transport, rather than facility attractiveness.

The facility checklists also included data regarding distance travelled by users. For each facility, the number of deliveries from each village over the past 12 months was recorded. A health worker from the facility was then asked to estimate the distance to each village. While this will no doubt be subject to errors of interpretation, the workers would be familiar with the area from outreach work done requiring travel to many areas. As mentioned above in the limitations to the data, in many cases women may have travelled to a parent's home to deliver, and then been taken to a health centre from there. If the recorded village on facility records was the woman's home village (and not the parental village she travelled from), then the distance shown would not, in fact, be what the woman had to travel to reach the facility. The distance data from the recent use surveys listed in Table 9 rely on subjective interpretation of distance by women, but does not have this potential problem. The facility checklist data, however, has a much larger number of cases, so both sets of distance information have been included in this discussion. The following graphs illustrate the proportion of deliveries in each UHC by estimated distance for each facility:


Kaligonj UHC
Percent of deliveries
18.0
17.0
16.0
15.0
14.0
13.0
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 20 21 22 24 27 32 40 50
Distance (km)


Shoilakupa UHC
Percent of deliveries
14.0
13.0
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
1 2 3 4 5 6 7 8 9 10 11 12 13 15 17 19 20 36 46 50 60
Distance (km)


Kotchandpur UHC
Percent of deliveries
16.0
15.0
14.0
13.0
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 16 17 18 19 20 21 22 23 27 28 30 35 38 39
Distance (km)



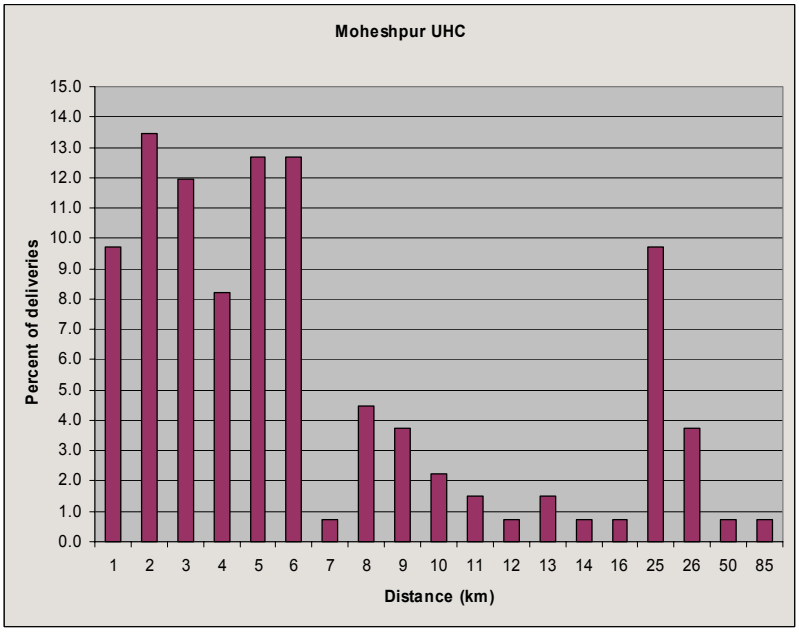




Figure 2 - Proportion of deliveries from given distances, by UCH, based on facility checklist data

The above graphs give some illustration of the geographic distribution of users of each facility. In most cases proportions of users fall as distance increases, but there are exceptions. Shailakupa and Harinakundi appear to have users clustered more around middle distances, with less of a clear declining trend as distance increases. Mohespur also sees a large drop off of use after 6 km away. Most of the above graphs also have spikes for particular distances.

Some of these spikes are most likely due to the fact that distances were approximated by staff reporting them, and not known precisely – Shailakupa, for instance, shows very few villages said to be 9 or 11 km from the facility, but a high number said to be 10km away – most likely the 10km estimate includes villages 9 or 11km away. However, this phenomenon would not explain the spikes seen in deliveries from 6km away in Kotchandpur, or 7km away in Kaligonj. To try to make the data a bit more comparable the following summary table is presented:

Table 10 - Distance travelled to UCH from facility checklists, summary table

| | Proportion (%) of deliveries from: | | | | |
|---|---|---|---|---|---|
| **Facility** | **<=5km** | **6-10km** | **11-15km** | **16-20km** | **21km+** |
| Kaligonj UHC | 52.0 | 25.2 | 11.3 | 8.9 | 2.6 |
| Shailakupa UHC | 41.2 | 44.8 | 11.3 | 1.6 | 1.1 |
| Horinakundu UHC | 52.5 | 35.3 | 9.8 | 1.8 | 0.6 |
| Moheshpur UHC | 56.0 | 23.9 | 4.5 | 0.7 | 14.9 |
| Kotchandpur UHC | 41.8 | 39.0 | 9.0 | 7.7 | 2.5 |

In this comparison, Moheshpur stands out as attracting more women from within 5km, and notably fewer from the 11-15km distance than other facilities. This result seems to contradict the recent use survey data where the average distance reported was higher than other facilities. Interestingly, there were three women interviewed in the recent use surveys who reported travelling 15 or 16km to reach Mohespur. The facility checklists only had 1 delivery recorded from a village 16km away, and one from a village 14km away. The facility checklists should have included all the women sampled in the recent use survey. This inconsistency points to potential inaccuracy in the perceived distances reported by women in recent use surveys, or by facility staff when the facility checklists were completed, or alternatively the problems that may arise if home village recorded is different from where the woman travelled from.

Shailakupa and Kotchandpur stand out as having the lowest proportions from within 5km. These facilities had some the highest levels of use, which appears to indicate a willingness to travel to them. Kaligonj provides interesting findings, as it has a low proportion of women travelling from 6-10km, but one of the highest proportions of 11-15km and 16-20km. Moheshpur also has a notably high proportion of deliveries recorded from villages over 21km from the facility (including one reported to be 85km away, from another District). It is expected that the extreme cases are most likely errors where a woman's home village was recorded, but she had travelled from a relative's home closer to the facility. However, it would be expected that this phenomenon would be similar across facilities, and so it is unclear why Moheshpur has a substantially higher proportion from 21km or more – particularly when the remainder of the data appears to indicate women are less likely to travel to reach the facility (lower proportions over 5km).

While these data give some indication of how far women are willing to travel to reach the facilities, the differences between them cannot be fully explained without knowing more about the spread of the population in the Upazila, as well as transportation routes and availability. Distance as a barrier may not be uniform across all Upazilas, as a distance of 10km along a well maintained road with available transport will be much less of a barrier than a 10km distance over unpaved hills or swampland. Such information, however, is not easily available to provide further insight into the data.

## Qualitative data and results

The qualitative data consisted of reports from 30 in-depth interviews (IDIs) with women who had delivered in a facility in the past year. The reports were written up as case studies (and are referred to anonymously here by IDI number), and focused on the decision making process as well as the experience of seeking care and the delivery itself.

This report will not go into the details of all 30 cases, but instead summarises some of the key findings from the interviews. Many of these sub-sections are being analysed and written up in greater detail for publication elsewhere.

**Conceptualising complications**

As explained above, studies have shown that presence of a complication could be the most important determining factor in whether Bangladeshi women visit a health centre for delivery care. In our cases as well, almost all women expected to give birth in the home and, indeed, attempted to do so before perceived problems led to their visiting a facility. Multiple healers could be consulted as well by women, with professional medical care often a second, third, or even fourth option after TBAs, spiritual remedies, local unqualified practitioners, or homeopathic remedies were used.

The interviews relied on women's own descriptions of their case, so it was not possible to clinically corroborate the possible complications faced. Certainly some cases women described symptoms that would be indicative of eclampsia (having had fits/convulsions), or some women mentioned heavy bleeding being a reason they went to facility. One other described part of their uterus 'coming out' – seeming to describe a uterine prolapse – which was a problem that the attending individuals in the home could not manage.

In many cases, however, it was less clear why there was a felt need to seek facility help, aside from labour not progressing as anticipated, or taking longer than expected. In many cases, women reported that they had been in labour for more than a day, or up to a week before professional care was sought. It is clear that women and families have varying expectations about childbirth. While the norm across Bangladesh may still be to first attempt delivery at home, it is also shown that facilities are considered an option when complications are perceived. Therefore it may be worthwhile to attempt to educate the population on warning signs that they can classify as 'complications', which will then justify seeking alternative and professional care.

Further investigation could also focus on the types of 'complications' seen, and which avenues of care are typically followed for each kind (spiritual healers, TBAs, homeopaths, etc.). Then, more specific education messages can be targeted at women and decision makers to emphasise how professional medicine can effectively deal with those perceived complications.

**Decision makers**

When it came to actually making decisions to seek professional care, however, the interviews provide some interesting insights. Past studies of pregnancy and childbirth in Bangladesh often emphasised the roles of key family decision makers. Usually the woman's husband was seen as the main decision maker in the household, but in matters of pregnancy and childbirth, others – particularly mother's in law or other females in the household – were seen as crucial decision makers.

Yet in-depth interviews illustrated how there may be many key individuals who's opinions are consulted when it comes to seeking professional delivery care. As this is often considered a critical point – due to some complication or problem delivering at home – it is important to see which individuals are most influential in the decision making process.

Close family members are of course the most immediate individuals involved in decision making. The role of the husband and mother in law are important, but it is worth nothing other cases where others inside the household played a role. If a woman was staying in her own family's household her parents may have more say on matters of delivery care. Other women, however, including wives of brothers in law or aunts of the husband, often also provided some advice or assistance to women interviewed.

For those outside the household, however, there were several cases where individuals were seen to play a key role due to their status. In one case, for example, a woman described as educated and the wife of a teacher was an important voice in convincing the family to go to a health centre when several family members were opposed to the idea (IDI#26). In another case, it was a brother of the woman who was a police officer who advised the family to take the woman to a government facility (IDI#3). There were further examples of relatives who might not normally be considered key decision makers, but who played a role due to their position. One woman's aunt worked in a health centre (IDI#19), and in another case, a cousin worked in private clinic (IDI#12). In both these cases these relatives who might not normally have a large say, appeared to play a considerable role in influencing the decision to seek professional care.

These insights shed light on the importance of social networks in shaping decisions. In particular, access to key individuals – including teachers, police officers, health workers, and educated individuals (possibly due to their social status, or knowledge of available services) – may greatly increase a woman's chances of seeking professional care.

Finally, it was found that alternative healers and lay practitioners could also play very important roles in seeking care, and even facilitate seeking professional medical care. The roles of these groups is discussed in the following section:

**Roles of non-medical (lay) health practitioners**

Women reported contact with a wide assortment of individuals for health care needs in pregnancy and childbirth. This section will briefly discuss the types of healers used, and some key roles played in case reports.

*Types of healers*

Four basic categories of healers were used for pregnancy and childbirth related care, categorised as follows:
7

1. **Spiritualists** – This term is used to include individuals who give either medical related care, or protective spiritual items for pregnant women. Holy oil, amulets, and other items were commonly obtained from spiritual leaders or healers, referred to as *Maulavi, Kabiraj* or *Fakir*.
2. **Homeopaths** – A common source of care for those not wishing to visit medical facilities was to see a homeopath. Interviewers in this study explained that homeopathic medicine was seen as foreign medicine, but homeopaths were often locally based in the communities.
3. **TBAs** – As in many societies, Bangladeshi women often use the services of Traditional Birth Attendants. However, it is clear that the term TBA can refer to a wide category of individuals. Older women, often relatives or in-laws, may be considered TBAs, yet they may deliver only a few children each year. There may also be local TBAs who undertake child delivery as more of a profession. Finally, two woman distinguished between a TBAs and trained TBAs, indicating some further division or hierarchy in the concept.
4. **Village Doctors / Pallichikitshaks** – Finally, many women interviewed referred to services received from so-called 'village doctors' or *pallichikitshaks*. These are unqualified individuals who purport to practice western medicine – including giving injections and intravenous fluids at times. Locally, they are often referred to as 'quacks' in English.

As past studies have shown, our interviews also found a complex use of a variety of healers by pregnant women and their families. Often some kind of spiritualist was visited by a family member before delivery for a protective amulet or item. At times spiritual remedies were also sought during labour, but, again it was typically a family member visiting a spiritualist and bringing some form of remedy – oil or holy water, for instance, to apply to the labouring woman. In rare cases did spiritualists actually attend the labouring woman.

Homeopaths tended to serve a similar role. They were at times consulted during pregnancy, and one case a woman reported receiving antenatal care from a

homeopath. Homeopaths were not found to attend the deliveries of any interviewed women though and, as with spiritualists, family members would sometimes visit homeopaths and bring medicine back to women.

*Referral roles*

TBAs and Pallichikitshaks, however, were often in attendance during delivery at home, and were commonly looked to as experts on delivery. Their opinions on the need to refer a woman to a facility was, therefore considered quite important in some decision making circumstances. Particularly pallichikitshaks, whose opinions were rarely challenged by family members.

In general, pallichikitshaks often encouraged taking the woman in labour to visit a facility when labour was not progressing. This was seen in 10 cases (IDI# 3, 5, 6, 11, 13, 18, 24, 26, 27, 28). In fact, in every interview case where a pallichikitshak was called in to assist the delivery, he recommended transferring the woman to a facility. This decision could be made unilaterally, or with consultation of attending TBAs, but in general the pallichikitshak was brought in after a TBA was seen to be having problems. Pallichikitshaks opinions appeared to be valued above those of TBAs in referral matters.

Women's experiences with TBAs were mixed. Some TBAs also encouraged use of facilities and, indeed, there were cases where TBAs accompanied the women to the facilities. But there were also three cases, however, where TBAs resisted taking women to facilities (IDI#16, 18, 24). In one such case, the woman explained that it was in the TBA's interest to do the delivery at home, but the opinion of the pallichikitshak 'foiled' these arguments of the TBA. In general, there were cases of women disregarding TBA's opinions, but this was not seen for pallichikitshaks

The study did not ask enough about the types of TBAs or relations to TBAs by family members, but it is speculated that the type of TBA may play a role in their willingness to refer a woman to a facility. In the case of TBAs who are relatives or in-laws of a woman, it may be that they are more likely to admit their own limitations and encourage referral to a facility. For TBAs who deliver many children, and who use deliveries as a means of financial support, there will be incentives to have the woman deliver at home – both in terms of their own reputation and payments received.

*Links to Facilities*

There may be two main reasons why pallichikitshaks in particular tended to refer women to facilities for delivery care. Firstly, unlike TBAs, pallichikitshaks purport to practice western medicine. As such, linking to a health centre would not be a compromise of their skills, as they appear to be part of the medical establishment in some ways. Visiting a facility may, in fact, build their legitimacy, as opposed to the case of TBAs, who use alternative practices, or for whom a facility delivery may be seen as a failure.

In addition, however, there were several cases which explained that pallichikitshaks had specific links to facilities – either formally or informally. In one case, it was mentioned that a pallichikitshak was specifically called in to accompany the woman to the facility, as it was explained that this pallichikitshak arranged services through 'underhanded' dealings. In that case, after a doctor had advised a woman for a caesarean section, the pallichikitshak negotiated with nurses for a woman to have a normal delivery in the ward for some payment. It would appear, then, that some pallichikitshaks may be able to negotiate with health providers on behalf of women in facilities through such informal arrangements.

Some pallichikitshaks, however, had more formal links to facilities. One woman's interview explained that the pallichikitshak her family called in owned the Hatgopolpur Surgical clinic (IDI#18). She reported how he advised the family take her to the clinic, and once there he called a medical (M.B. B.S.) doctor and asked that doctor to come to attend the woman. Eventually the doctor did arrive and recommended a caesarean delivery. This clinic was one of the private facilities sampled in this study's quantitative work. As shown above, that clinic undertook 26 deliveries in the previous year according to its records, with 20 of them classified as 'complicated'.

It would be expected that private facilities would employ trained medical staff – but it was surprising to learn that it was the unqualified pallichikitshaks (often called 'quacks') who may own or run these private clinics. Indeed, this was not the only example of this. The Palli Hospital is also owned by (and named after) pallichikitshaks. Yet while unqualified pallichikitshaks own and run the Palli hospital, it is medical doctors who undertake surgical deliveries such as caesarean section there.

Therefore, in some cases there are clear incentives for pallichikitshaks to refer women to professional, as they may receive payment for doing so, or may even own a stake in private facilities. Indeed, in several cases the pallichikitshaks recommended visiting private centres which, as the quantitative data shows, is where almost all caesarean deliveries take place and, indeed, some private facilities deal almost entirely in caesarean births. This may have implications for the costs faced by women and their families, however, as it may greatly increase their chance of having a caesarean delivery.

**Views of caesarean sections (CS)**

The women interviewed gave important insights into their views of caesarean birth, with a number of particularly relevant conclusions to be drawn. Rather than seeing caesareans as a life-saving option which would support the decision to seek professional care, many women expressed apprehension about the procedure, seeing it as both expensive and not always medically justified. There was an opinion expressed that doctors may ask for caesareans when they are not needed, and some women's experiences illustrated disagreement among medical staff as to whether or not a caesarean procedure should be done. Indeed, there were conflicting financial incentives for doctors to perform caesarean deliveries, and for nurses and midwives to

conduct normal deliveries, as each cadre would receive payment or tips for particular procedures..

Of the 30 interviews analysed, a subset of 12 cases contained some experience related to caesarean delivery. These cases' experiences and discussions varied substantially, but four basic scenarios were identified from the interviews mentioning CS (cases are not mutually exclusive):

1. Cases where the woman had a caesarean delivery (5 cases);
2. Cases where caesarean sections were considered by health workers, but not needed (2 cases);
3. Cases where mention of caesarean section led to a reaction of fear and reduced likelihood to use facilities, or changing facilities (4 cases);
4. Cases where a doctor recommended a caesarean section but others (including other facility staff) advised the woman to not follow this advice, eventually leading to a normal vaginal delivery (3 cases).

Scenario 1 – in 5 cases women interviewed had delivered through CS. In 2 cases this was due to prior information – a previous CS in one case, and an ultrasonogram indicating need in another (IDI#20, 30). In 2 other cases, the woman tried to deliver at home, but after perceived difficulties a *pallichikitshak* was called in, who suggested attending a facility where CS was conducted (IDI#6, 18). In one final case, a 28 year old woman visited a health centre after 8 and a half months pregnancy due to pain. A doctor conducted an ultrasonogram and advised for immediate CS. Rather than following this doctors advice, the family removed the woman from the facility and arranged for her to be seen at another clinic where a relative worked. At this other clinic, the woman was monitored and given drugs for a week, with a consultant brought in from Dhaka to see her. Eventually, a CS was decided upon as necessary, but only after this additional care was received (IDI#12). The case illustrates that some doctors may, indeed, rush to push for a CS procedure, and shows how personal networks and connections to facilities can influence the care received.

Scenarios 2 and 3 – These cases show how women reacted to CS suggestions, and how this reflects their views on the procedure and on professional care. In the cases where CS was suggested as possibly needed, but decided against, it is clear how difficult it can be for families to prepare for the procedure. In one such case a husband was asked to collect three bottles of blood, in case it was needed (IDI#4). The husband was unable to do so, but it shows the demands often placed on families when they are asked to collect expensive or hard to obtain items.

Other cases, however, showed how women may react negatively to the idea of a CS, and how the thought of it may actually deter them from using services. Indeed, a number of women from the larger sample of interviews, and this sub-sample, expressed the opinion that women do not go to facilities because they believe doctors to ask for CS when it is not needed. This fear could dissuade them from using services, as was seen in the case of a 29 year old women who had been in weak labour for two days. A doctor came to visit her and recommended transfer to a clinic, but she refused, fearful of a CS. Eventually she consented to go for an ultrasonogram only (IDI#3).

In another case, a 24 year old woman who visited a health complex due to pain left the health complex when a doctor advised for a CS. She then attempted delivery at home, which did not go well, so she again went to a health centre where she did eventually deliver normally (IDI#23).

These reactions to CS can place the life of the mother and unborn child at risk, if there is indeed a need for the procedure. Women appeared to doubt doctor's recommendations for the procedure, yet there were cases illustrating how this doubt can come about. Scenario 4 illustrates cases where staff at health centres disagreed over the need for CS. In one case, a 28 year old woman went to a health centre accompanied by a *pallichikitshak.* After an initial check indicating normal delivery, the doctor changed his recommendation to advise for CS. However the *pallichikitshak* negotiated with a nurse to conduct a normal delivery instead, which was done (IDI#19). In another case of a 16 year old woman, a doctor recommended CS, but after leaving, the nurses said they could arrange a normal delivery for a fee, which was agreed upon (IDI#24). Such examples illustrate why some women may not believe CS is necessary when doctors ask for it.

In Jhenaidah district, as may be true for much of Bangladesh, undergoing CS almost always involves becoming a 'private' patient in a doctor's personal clinic. Costs of the procedure are very high – leading to financial incentives for doctors to encourage women to deliver this way. Yet normal deliveries almost always occur in public wards, where nurses and midwifes receive tips for services. This can lead to conflicting incentives and in both cases above where women arranged with nurses for delivery, there was some payment involved.

These findings present worrying conclusions for promotion of maternal services in Bangladesh. If doctors are recommending CS when it is not needed, they will be asking women and their families to spend very large sums of money which are often hard to arrange. Unnecessary CS will undermine women's faith in the procedure, and will work against health education campaigns that encourage women to seek professional care. Similarly, incentives for nurses or midwifes to encourage normal delivery may prevent some women who need a CS from getting one, and may also encourage use of contraindicated labour-inducing drugs, particularly if a woman's reason for visiting a facility was slow progress of labour. It is impossible to know which, if any, of these practices occurred in our cases, but the cases do illustrate a likelihood of these problems which need to be addressed.

**Known access barriers**

Aside from these specific findings on the roles of healers and views on caesarean delivery, the interviews also provided some insights into other known access barriers women commonly face.

*Distance and Transport*

In general, women were transported to health facilities by use of pedal-driven vehicles. Typically women travelled by means of a 'van' – a bicycle pulling a flat platform that several people can sit on. Some journeys by this method were of

considerable distance – over 10 km, or over an hour in duration. One such case reported travelling 2 hours over 11km by 'van' to reach a health facility (IDI#13). In another case a woman reported becoming faint by the time the health centre was reached, after travelling 12 kilometres (IDI#26). Transportation was commonly arranged by family members such as the woman's husband, brother, or in laws.

However, there were several cases where transport was not easily available. In one case a woman had to walk in the rain at night a kilometre to reach the market where a van was available (IDI#17). In another case, the family had to reportedly walk a kilometre over poor roads before they could continue on the woman's husband's rickshaw (IDI#25).

The time it takes to arrange transport and reach facilities can be a crucial element – these cases were selected for women who delivered in facilities, but it may be that many women do not attend facilities due to the distance barriers. Indeed, as many women interviewed travelled to the facilities only because of problems of labour at home, speedy transport is an essential element to reaching facilities that can handle complications. While few recommendations can be made here about improving transportation links, it is worth noting again the quantitative findings that deliveries were not done at local level health centres. One of the biggest problems of transport – the distance needed to travel – could be solved by equipping lower level facilities (FWCs) to handle delivery complications.

*Costs*

Despite the national policy of freely available services in public facilities, it was clear that several costs were involved including transportation costs, but also payment related to services received. Based on the recent use survey data presented earlier, it would appear that facility and service based costs were much greater than transportation costs. Money was often paid to health staff as tips, or required to buy drugs. At times payments were demanded of women and their families, such as one case where a ward assistant (*Aya*) demanded 200 Taka for services, which the respondents father had to borrow (IDI#14). In another case, a particularly poor family who relied on begging to earn money had particular difficulty raising needed funds. Drugs were purchased from a local shop, and only paid for partially, with the shopkeeper allowing the woman's mother to owe him the remainder as she was known to him. In the facility the woman had an episiotomy but reported it was not stitched afterwards because they could not pay for the thread. The woman reported that she and her family needed others in the facility (staff and patients) to give them 30 Taka to pay for soap and a blade (IDI#17). Such a case illustrates how those with extreme difficult raising funds can have real problems accessing care, and may not receive appropriate care even if a facility is reached, as shown by the staff refusing to stitch the woman's episiotomy without payment for supplies.

Interviewed women explained a range of different means of raising funds in their various experiences. Some wealthier families did not seem to need to take special efforts, but others had to save money in advance, or sell belongings to raise the needed money. In general, family members such as the husband, parents, and in-laws were most often mentioned as making efforts to raise funds.

When money had to be raised from outside the household, it was commonly borrowed at reported high interest rates (exact rates were not specified). Money could be borrowed from neighbours in this way, or known money lenders, and there were even cases of close relatives also charging interest. Some individuals reported borrowing from official sources as well, such as banks or lending societies, although it was occasionally admitted that alternative reasons were given for taking the loan, despite its use for pregnancy expenses.

In extreme cases, borrowing money can clearly be a problem for some families. In one case, it took three family members borrowing from separate sources to raise 5000 Taka to pay for a caesarean delivery. Even then the doctor refused to release the woman from the clinic due to lack of enough payment. Eventually the woman's father in law spoke to a local political leader, who negotiated with the clinic doctor to agree on the 5000 Taka payment (BG12). In another similar case, facility staff demanded a payment of 500 Taka for services, which the woman's husband refused to pay (despite having saved more than this in advance). A relative who lived near the facility was called in and negotiated a lower payment of 190 Taka before the woman could leave the facility.

It is worth noting that, in a few cases, women reported how their families set aside funds in advance for possible pregnancy and delivery expenses. This could involve saving for several months in advance of the expected delivery. At times these funds were insufficient to meet all the costs faced, but at other times they were more than sufficient. Indeed, in one case the family had saved 3000 Taka for delivery expenses, and even had a 'van' ready for transportation from early in the day the woman went into labour, even though a home birth was attempted at first (IDI#5).

As a whole, it was seen that personal contacts and social networks played a large role in shaping access to funds, with family members often lending or borrowing money on behalf of the woman for her costs. However, many individuals reported high interest rates charged, even by neighbours, for loans taken, or the need to be deceptive in the reasons for taking loans from official sources such as banks. These findings point to a need in the community for low interest finance schemes to fund emergency pregnancy and delivery needs. Such schemes have been proposed elsewhere, and it may be worth investigating the viability of such a scheme in rural Bangladesh as well, or investigating if schemes operate already in other parts of the country.

*Stigma and Norms of Delivery*

There were several other interesting findings that also came out of the in-depth interviews with women. The first notable observation was the lack of stigma or discrimination mentioned by women. While several women did explain that it was the norm to deliver at home in their communities, there was no individual description of any backlash or problems from their choice to deliver in a facility. Of course there can be some bias in reporting stigma and discrimination, as women may not wish to report being discriminated against. One case did say that while women go to facilities for complications it was not seen as acceptable by society (IDI#15), but a more common opinion appeared to be that facility birth would be considered acceptable when there were complications of pregnancy.

Indeed, this reinforces the earlier discussion on the need to address how Bangladeshi women and families conceive of complications. It appears that the label of 'complication' is a legitimising term that enables the use of health centres, potentially over-riding stigma or loss of status that might otherwise occur with asking for professional help or from being attended to by a stranger or a male health worker. The scope of this study was not enough to explore if the label 'complicated' was being applied in a strategic manner by those who preferred facility delivery, but such could be a further area of inquiry.

There may also be changing norms of delivery in Bangladesh, as 'traditional' and 'cultural' practices are known to change over time, or in response to particular situations. Several women reported that social norms were changing, and that it was becoming more acceptable to deliver in a health facility than in the past (IDI#1,15,16), with one of those women explaining that it is now only TBAs who try to prohibit the use of facilities (IDI#16).

**Other findings**

*Injections and delivery*

A final common theme in the in-depth interviews was a number of women who reported that they received some form of injection or IV fluid in the health facility. In a number of cases, women reported that after receiving this, their labour pains increased (IDI#5,8,13,14,15,17,19,21,28 ) – with multiple women reporting their labour pains becoming 'serious', and one woman specifically stating that an injection was given to 'maximise labour pain' (IDI#5) . In several cases, the women reported that they gave birth quite soon after they received the injection or fluids (IDI#7,13,16,22,26,27,29). It is not known what was given to women in terms of injections and fluids. However, these accounts would appear to indicate that health facility staff may be providing drugs to induce early labour.

The fieldworkers of this study specifically took note of the number of women who reported that their labour was progressing too slowly at home – often reporting labour lasting several days – but once they arrived at a facility, and were given injections or fluids, they very quickly gave birth. As mentioned above, there may be incentives for nurses or midwives to induce labour if a quick delivery is seen as a success for them or if they are trying to convince a woman to stay in the labour ward and not move to a private facility for a caesarean section.

This finding, however, would indicate a possibility of the use of drugs such as oxytocin in some health facilities to induce labour. While there are some clinical situations which recommend induction of labour, doing so at an early stage of pregnancy is commonly not recommended as it can increase the risk of a ruptured uterus. While it is not possible to corroborate the use of such techniques from women's interview accounts alone, it may be important to investigate the practices within labour wards, as practices to speed up delivery or increase labour pain may be putting women at unnecessary risk of life-threatening complications.

## Discussion – access to and use of facilities

### Quantitative data

The quantitative data was gathered in order to provide insights into the particular barriers faced in using health centres for delivery, and the importance of different barriers across facilities. Comparing similar facility types was felt to be the most effective means to understand the importance of different barriers.

*Family Welfare Centres*
The policy of the government of Bangladesh is to encourage skilled attendance at delivery, but also to have more deliveries conducted at the Union level by skilled health workers. The Union level is served by FWCs. The proportion of deliveries at Union level has been proposed as an indicator of performance towards this objective (Bangladesh Ministry of Health and Family Welfare 2001). As shown, only one of the 10 FWCs sampled had records of any deliveries conducted in the facility. It may be that the local FWAs were attending deliveries in women's homes, but facility records should aim to keep a record of these, so as to know which FWCs actually were being utilised as desired.

It is clear that most women do not choose to deliver in these facilities, but this may be for a number of reasons. FWCs have a small staff, and lack key supplies and equipment, so to truly encourage more women to choose these facilities, they may need to be better equipped to provide a standard of care seen as acceptable. However, there is evidence that better equipping FWCs may not greatly increase their use. In the vast majority of cases, Bangladeshi women will only visit a facility when there are perceived complications in their delivery. FWCs do not handle complicated cases, and so in such cases they will almost never be chosen as a place to go if there are perceived complications. Encouraging use of FWCs requires engaging with the social norms of where to deliver when there are no complications and would require individual and societal level interventions to encourages women to deliver in a facility for normal delivery. The approach will most likely need to be two-pronged then, to engage with social norms for home delivery, but also to provide a viable and desirable local facility for them to choose.

*Upazila Health Complexes*
Approximately half of the facility-based deliveries in the District are conducted at one of five UHCs. It had originally been hoped that comparing utilisation of various UHCs would enable some understanding of the relative importance of different access barriers. However, the findings discussed above raise as many questions as they answer. Moheshpur UCH clearly had the fewest number of deliveries, and the lowest utilisation in terms of births per 1000 women in the district. Yet, despite fieldworkers opinion that this would be because the quality was not good, in many indicators Moheshpur appeared to show good perceived quality by users, and use of Moheshpur UHC also did not appear to lead to greater costs. There was mixed evidence on how far users were willing to travel to reach Moheshpur as well, with recent use surveys showing a higher average distance travelled, but facility checklists showing most deliveries coming from within 5km, although there was a strangely high number reportedly living over 21km away.

The findings appear to indicate, overall, that perceived quality of care, or differences in cost, were not as important a factor in use of facilities as distance and transportation. Despite positive quality measures from recent use surveys, Moheshpur had low overall use, and saw fewer women coming from farther away than other facilities. Kotchandpur, on the other hand, saw the most deliveries of the UHCs, and the highest proportion of women using it, yet it had higher costs for normal delivery and fewer drugs available.

Considering social norms to deliver at home, and the trend to only go to a facility when there are perceived complications, this may be a reasonable explanation as to why distance or transport may be more important for most women than quality of care – if women will only go to a facility when they have problems, not because they planed to, then its only a matter of facilitating transport once those problems arise. Of course, improved quality can lead to greater willingness or desire to go to a facility regardless of complications, but the example of Moheshpur seems not to bear this out in this case.

Therefore, it is, albeit tentatively, concluded here, that decisions to use care may be more a factor on the perceptions of need by women and decision makers, rather than an assessment or knowledge of the relative quality or costs of the facility to be used. Once the decision is made to seek care, then the use of the facility appears to be most linked to distance and transportation factors, rather than an assessment of the relative quality or cost between facilities – although women and families appear to know which facilities are unable to provide emergency care..

While one conclusion from these findings would be to improve transportation links to facilities, this may be only a partial solution – doing so does not address the underlying problem that many Bangladeshi women only visit a facility in cases of perceived emergencies. To overcome this, much more must be done in terms of education, community sensitisation, and quality of care improvements to show that all facilities provide viable and culturally appropriate delivery care options.

**Qualitative data**

The qualitative data, consisting of 30 in-depth interviews was gathered in order to understand better the decision making process involved in seeking professional medical care, the networks of individuals which women and their families draw upon, the ways women overcome known access barriers, and to understand more about the experiences of delivery in a facility.

Research findings touch on a number of key aspects of maternal health care which can potentially influence policy or be useful for service improvement.

*Findings on providers*

Insights from the interviews were made on women's experience with providers themselves. In particular a couple of potentially problematic practices were seen which require further investigation. The first is the use of caesarean section among providers. It was seen that virtually all CS deliveries were done in private clinics, at a very high cost to women and families. Women expressed concern that caesarean procedures were being conducted for little reason other than to make money for

doctors. While there will be a number of deliveries that require CS to save the mother or child, it would appear that there may be CS procedures done in Bangladesh that are not medically necessary. Addressing this will require more than simple regulations against unnecessary CS. Clearly there is financial incentives for doctors to undertake complex procedures in private settings. If salaries and benefits to medical workers are not increased, this incentive will remain, as will informal charging, selling of drugs, and other income generating activities.

The importance of reducing unnecessary caesareans, however, goes beyond the impact these procedures have on the individual woman. In addition, a practice of unnecessary and/or costly CS will discourage women from seeking professional medical care for delivery in the first place out of fear that they will be asked for an unnecessary CS, and out of mistrust of providers. To increase the proportion of women delivering with a skilled birth attendant, trust must be built between women and the health service, and women must see CS as a life saving option that is only used when medically necessary.

Interviews also indicated that there may be some use of drugs to induce labour in women. While this is sometimes recommended – such as for eclamptic patients – in most cases it is considered dangerous to give drugs such as oxytocin in early stages of labour to increase contractions or speed labour. Further investigation would be needed to see if, in fact, such is done in Bangladeshi facilities, but there is some evidence it may happen, and there are also incentives to do so. Labour wards are known to be overcrowded, with visits to wards often finding more women than bed space (many women were observed to stay on mats on the floor in one ward visited). In such an overcrowded setting, there may be pressure to speed labour to have a faster turnover of women and free up spaces and staff time. Furthermore, labour ward staff often receive tips or informal payments for deliveries, and may find that a quick delivery increases their remuneration. Finally, in the few cases where there is disagreement between staff, it may be that labour ward staff induce labour so that women will not be removed to a private clinic for CS. Again, these are many possible explanations, but the structure of the health system, in terms of shortages of staff and space, and low pay, would provide incentives for potentially dangerous practices such as artificial induction of labour.

*Findings on care seeking*

This last section will summarise some of the findings on care seeking to access professional delivery services. As shown, while past studies have emphasised the role of husbands and mothers in law in the decision making process, our interviews found a range of other actors can play important roles in the decision to seek professional care. Women often drew on their social networks in these decisions, and a social link to a person of some status or informed position can facilitate decision making. Individuals with education, socially linked jobs (e.g. a police officer) or with personal links to health centres often played an important role in the decision making process that they might not otherwise have had in the household. Networks including such individuals then can be important resources women and families draw on for information around decisions of where to seek care.

Networks of people were also key for families who needed to raise money. Despite policies of free care, interviews clearly show that many costs were involved in

seeking professional care, including purchase of supplies and drugs, and tips or informal payments to providers. Caesarean deliveries faced particularly high costs and women expressed fear of needing this procedure because of the cost burden. When money was needed, it was raised in a variety of ways, but often borrowing was done from family or neighbours – although this was often at high interest rates, even if the person was known to the family. Some families sold goods or extra crops in advance to prepare for delivery costs, which policy makers should look to encourage, but many had to raise funds at the last moment when problems occurred. Finance schemes providing low/no interest loans for delivery needs could help facilitate use of health centres, but such schemes have been proposed in the past, and other research would need to be reviewed to understand if this is a viable solution.

Outside the family and social network that can be drawn upon by women and their families, the qualitative findings also highlighted the unique importance of lay practitioners in the decision making process - particularly the roles of TBAs and pallichikitshaks. TBAs were found to be quite a variable group – including elderly relatives called in to assist labour, as well as more 'professional' TBAs who were not related to the women. Some TBAs were singled out as trained TBAs as well. TBAs varied in their support of seeking care in facilities. Some opposed the decision and had to be over-ruled by other decision makers, but many supported the idea, particularly when problems were occurring in labour they could not address. At times TBAs accompanied women to the health centre as well.

The role of Pallichikitshaks was also a surprise to explore. In every case where these so-called 'village doctors' were called in to assist, they recommended seeking care at a health facility. There may be a number of reasons for this. It may be that they are only called in once problems reach an unmanageable stage. But also it would appear that many pallichikitshaks have links to facilities. In some cases they reportedly arrange services on behalf of women (described as in an 'underhand' way by the interviewee), but in other cases these individuals owned or ran private clinics which employed medical personnel. The role of the pallichikitshak in encouraging professional delivery could therefore be built upon in Bangladesh – rather than simply dismissing them outright as 'quacks'. Of course this is a difficult policy line to follow – these individuals are not qualified, and at times may give incorrect treatment or be a waste of money for families, but they also may play a role in increasing skilled attendance at birth, and their opinions appear to be valued.

Finally, while social norms are for women to deliver at home, there some cases of families who had prepared funds and/or transportation in case there was need to visit a health centre. A willingness to do this will certainly result if a family sees professional services as a viable option, but these cases point to how pre-planning can help to overcome cost or transport barriers. It is essential, then, that professional services are improved and promoted to an extent where they are seen as both useful and worth planning for. Such can help to overcome many known barriers to care, and will lead to increased use overall.

As a whole, this study has shed light on a number of crucial factors influencing access to and use of professional delivery services in Bangladesh. It is hoped that insights from both the provider and the patient sides can be developed into effective policies to increase the use and quality of health services for women in the country.

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