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## ORIGINAL ARTICLE

## Getting women to hospital is not enough: a qualitative study of access to emergency obstetric care in Bangladesh

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*Qual Saf Health Care* 2006;15:214–219. doi: 10.1136/qshc.2005.017285**Objective:** To explore what happened to poor women in Bangladesh once they reached a hospital providing comprehensive emergency obstetric care (EmOC) and to identify support mechanisms.**Design:** Mixed methods qualitative study.**Setting:** Large government medical college hospital in Bangladesh.**Sample:** Providers and users of EmOC.**Methods:** Ethnographic observation in obstetrics unit including interviews with staff and women using the unit and their carers.**Results:** Women had to mobilise significant financial and social resources to fund out of pocket expenses. Poorer women faced greater challenges in receiving treatment as relatives were less able to raise the necessary cash. The official financial support mechanism was bureaucratic and largely unsuitable in emergency situations. Doctors operated a less formal "poor fund" system to help the poorest women. There was no formal assessment of poverty; rather, doctors made "adjudications" of women's need for support based on severity of condition and presence of friends and relatives. Limited resources led to a "wait and see" policy that meant women's condition could deteriorate before help was provided.**Conclusions:** Greater consideration must be given to what happens at health facilities to ensure that (1) using EmOC does not further impoverish families; and (2) the ability to pay does not influence treatment. Developing alternative finance mechanisms to reduce the burden of out of pocket expenses is crucial but challenging. Increased investment in EmOC must be accompanied by an increased focus on equity.

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Much effort is currently focused on achieving the Millennium development goals (MDGs)<sup>1</sup> which commit the international community to promoting human development. The difference between rich and poor countries is greater for maternal mortality than for any other health indicator.<sup>2</sup> MDG5 focuses on improving maternal health, with a target of reducing the maternal mortality ratio (deaths per 100 000 live births) by three quarters by 2015. Progress towards this goal has, however, been disappointing, especially in sub-Saharan Africa and Southern Asia.<sup>3</sup> Recent estimates suggest that the maternal mortality ratio lies between 320 and 400 maternal deaths per 100 000 live births in Bangladesh<sup>4</sup> and the estimated lifetime risk of maternal death is 1 in 59 compared with 1 in 2500 in the US and 1 in 29 800 in Sweden.<sup>5</sup> Access to appropriate health care, including emergency obstetric care (EmOC), is one important element in reducing mortality and morbidity.<sup>6</sup>

Appropriate access to EmOC, as for other types of health care, is influenced in dynamic and mutually reinforcing ways by features of supply or provision and features of use of services, making evaluations of the accessibility of services complex and challenging. For example, availability may stimulate demand, making it difficult to show direct relationships between capacity and outcomes.<sup>7</sup> A very low proportion of women in Bangladesh currently give birth in a health facility. Around 90% of births are at home, typically with a traditional birth attendant or relative,<sup>4</sup> but access to EmOC is needed for obstetric complications. The "three phases of delay" model has been widely endorsed as a framework for understanding and identifying potential barriers to women accessing EmOC.<sup>8</sup> The model identifies the potential for delay in:

- phase 1: deciding to seek care on the part of the individual, the family, or both;

- phase 2: reaching an adequate health care facility;
- phase 3: receiving adequate treatment once at an appropriate health facility.

Research has already identified significant contributors to phases 1 and 2; the Bangladesh Maternal Health Services and Maternal Mortality Survey showed that women in the lowest wealth quintile were least likely to have knowledge of major obstetric complications or seek medical care for any complications, and were also more likely to delay when they did seek care.<sup>4</sup> Perceived poor quality of health services, difficulties in transportation, and cost have been shown to deter women from seeking care and reaching a facility.<sup>10–12</sup> Less is known, however, about phase 3 (receiving adequate treatment once at an appropriate health facility). In this paper we focus on this third phase.

In Bangladesh, users are not charged (apart from a nominal admission fee) for their stay in hospital, but are liable for expenses related to their treatment, including drugs, blood, and any resources required to conduct surgery.<sup>13–15</sup> Little is known about the equity implications of these "out of pocket" expenses. Our study aimed to establish whether and how poor women seeking EmOC were identified as being in need of financial support, how decisions were made about who would receive support, and what mechanisms (formal or informal) were in place to provide that support.

## METHODS

A mixed methods qualitative approach involving ethnographic observations and interviews with staff and patients between September 2002 and March 2003 (stages 4–6 in

**Abbreviations:** EmOC, emergency obstetric care; SWO, Social Welfare Organization

Table 1 Overview of data collection in Bangladesh

| Stage                           | Method                                | Target group                                                                  | Aim                                                                                                                        |
|---------------------------------|---------------------------------------|-------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| (1) Demographic data collection | Questionnaire (n=638)                 | All women admitted to obstetric ward during data collection period.           | To collect baseline demographic data and poverty related questions in order to calculate a "poverty score".                |
| (2) Consent for follow up       | Questionnaire                         | Women staying >24 hours                                                       | To gain consent for follow up after discharge and get details of address and directions.                                   |
| (3) Case note review            | Data extraction form (n=261)          | Women staying >24 hours                                                       | To examine diagnoses, treatment, delays and deteriorations.                                                                |
| (4) Follow up after discharge   | Semi-structured interviews (n=25)     | Women purposively selected                                                    | To explore in more depth the "journey of care".                                                                            |
| (5) Staff study                 | Formal (n=14) and informal interviews | Staff selected from a range of posts and areas relevant to obstetric patients | To explore support mechanisms for those least able to pay.                                                                 |
| (6) Observation                 | Non-participant observations          |                                                                               | To gain a deeper insight into patients' "journey of care", routines within the hospital, and support mechanisms available. |

\*An asset based poverty score which included literacy, educational attainment, toilet type, and roof type was validated against Demographic Health Survey data. Possible poverty scores ranged from 10 (poorest) to 39 (wealthiest).<sup>16</sup>

<sup>16</sup>24 hours was used as an indication of severity. A census and expert advice determined that women were unlikely to remain in the hospital beyond 24 hours unless they had a serious complication.<sup>16</sup>

<sup>17</sup>All data collection was undertaken by EP.

table 1) was used as part of a larger project examining access to EmOC in Bangladesh. Ethical approval for the study was granted by the Bangladesh Medical Research Council.

### Hospital selection

Government hospital services in Bangladesh include medical college hospitals, district hospitals, maternal and child welfare clinics, and upazila (sub-district) health facilities. We aimed to identify a hospital that would provide comprehensive EmOC; treat all obstetric complications; and admit women of poor socioeconomic status. A feasibility study identified a medical college hospital that met all of these criteria.<sup>16</sup> The obstetrics department in this hospital, a tertiary level teaching hospital in a large city, had around 13 000 admissions a year and 30–40 admissions every day. The hospital served primarily the population of Dhaka Division (a region of Bangladesh located in the centre of the country), but women using EmOC could come potentially from anywhere in Bangladesh. Around half of all obstetric complications treated in Dhaka Division are managed in this type of hospital.<sup>17</sup>

### Ethnographic observations

EP spent lengthy periods of time in the hospital's obstetric unit, observing, listening and recording everyday interactions and practices between September 2002 and March 2003, mostly accompanied by an interpreter. Observations were over periods of 6–7 hours per day and were undertaken at different times of the day, although difficulties in finding a female interpreter willing to be in the hospital at night meant observation was restricted primarily to daytime hours. Observations were unstructured and dynamic and did not involve structured checklists; instead, events were recorded as they happened.<sup>18–19</sup> Efforts were made to record what was heard as well as what was seen.<sup>20</sup> Brief notes were taken whilst in the hospital and at the end of each day notes and observations were written up.

### Interviews with women and families

Women were sampled purposively from the obstetric unit in which the observations had taken place to take part in interviews. Sampling was designed to incorporate women from both rural and urban locations, with a range of poverty

scores (see footnote to table 1; possible poverty scores ranged from 10 (poorest) to 39 (most affluent)) and different types of obstetric complications. The relatives and friends on whom women relied were also included in the interviews.<sup>21</sup> Interviews followed a semi-structured format. The questions aimed to follow patients' "journey of care" from identifying the need to go to hospital, travel to hospital, experiences at hospital, costs arising throughout the journey, and experiences after discharge. An interpreter fluent in both Bangla and English was used in all interviews.<sup>22</sup> With the consent of the respondents, interviews were audiotaped and later transcribed and translated. Interviews were conducted either in the respondents' homes after discharge or in the hospital before discharge.

### Staff interviews

Informal interviews were undertaken with hospital staff as part of the ethnographic observations.<sup>23</sup> Separate more formal semi-structured interviews were also conducted, following a broad schedule covering staff roles and responsibilities within the hospital, the socioeconomic characteristics of patients using the hospital, services provided, and support (medical and financial) for the poorest patients. These interviews were carried out within the hospital, often in the senior nurse or doctor's room or in the staff canteen. Interviews with doctors were usually conducted in English, but for all other staff an interpreter was required. Staff were assured that the purpose of the interviews was not to criticise their professional practice. Staff were uncomfortable being audiotaped so notes were taken throughout the interview and then written up in full subsequently.

### Analysis of interviews

For interview transcriptions, interview notes and observation field notes, a systematic and iterative method of analysis based on the constant comparative method was employed.<sup>24</sup> The data were read and re-read.<sup>25–26</sup> Initially "open codes" were applied to the data representing the significance of sections of text. Open codes were then incrementally grouped into organising categories or themes across the whole corpus (including field notes and transcripts). These categories were modified and checked constantly in order to develop a coding frame with explicit specifications. The coding frame was

partly influenced by the research questions but more particularly by ideas arising during the data collection.<sup>27</sup> Data were systematically assigned to these thematic categories.

## RESULTS

Interviews were conducted with 25 women who used the hospital for EmOC and 14 staff including seven doctors of varying seniority, the ward-in-charge of obstetric admissions and eclampsia ward, three nurses, social welfare office staff, and a pharmacist from outside the hospital.

### Costs and preparedness

Once they arrived at the hospital, women faced considerable financial barriers to accessing care in the obstetric unit. Although using EmOC was nominally free of charge, interviews with women revealed that families faced considerable out of pocket expenses ranging from approximately 1000 Bangladeshi Taka (BDT) to 25 000 BDT. At the time of the study the exchange rate was 52 BDT to 1\$US. The average daily wage in 2000 for skilled industrial workers was 111 BDT and 88 BDT for unskilled workers.<sup>28</sup> The costs increased with more serious complications, with women requiring blood transfusions or surgery facing the highest costs. The majority of costs were for drugs or equipment and blood. No women reported having to give money to any doctors or nurses but most made payments to other staff including *ayas* (female worker with responsibilities for cleaning) and wardboys. Although some women said that they chose to give money to these staff as a gift, most women reported that these payments were demanded for jobs such as moving the patient between wards or taking them to the toilet. For example:

*"They forcefully took it ... for taking me to the operating theatre and other ward by trolley and when we refused to give money to them then they misbehaved with us."* (ID 120, poverty score 39).

Most families had not planned for meeting these costs. One husband reported that as a family they put money aside for "danger periods" and another had specifically saved during his wife's pregnancy.

*"Actually it is difficult for us to spend a big amount of money at a time but when my wife became pregnant the we were mentally prepared for to handle this type of situation and for that reason we had kept some money before."* (Husband, ID 46, poverty score 36)

However, these cases were exceptions; the vast majority of families had no expectation that they would need to go to hospital during pregnancy or childbirth and were therefore unprepared for the costs.

*"I don't have any problem during the term of my pregnancy. So I think that I have to get a normal delivery with the presence of my relatives."* (ID 107, poverty score 27)

### Mobilising financial resources

In all but three cases, those attending hospital with the woman (e.g. husband) were dispatched to raise funds. Some women did not have any attendants and were therefore unable to raise funds, and some attendants did not return after being dispatched to raise funds or returned with inadequate monies. Treatment requiring out of pocket expenses was usually delayed while funds were being raised.

Raising funds usually involved borrowing money or selling property. Selling crops was the option taken by a few rural families. For urban and some rural families, borrowing from neighbours and family was the most common option, but these strategies had the potential for further impoverishing families in the longer term.

*"We had taken 5500 BDT originally ... he borrowed money from our neighbours and again went to the hospital. Yes, it is difficult for*

*us. Now if my husband earns 500 BDT then we have to repay 300 BDT and have to maintain our family by the rest."* (ID 185, poverty score 19)

*"We mortgaged our land. The mortgager will take all the crops off that land ... Now we will not get the crop from that land. The whole year we will have to buy the crops from the market."* (ID 273, poverty score 19)

Families had to be very resourceful in order to raise the money to ensure timely treatment for the woman. For example, one woman came to an arrangement with a pharmacy situated near to the hospital that allowed them to get the necessary drugs and supplies before full payment was made.

*"At first I took 1200 BDT, then again came home and took the rest of the money with me. I bought the medicine on credit. I deposited 1200 BDT to the pharmacy and bought all the medicine and brought it to the hospital. At 5pm after handover of the medicines I came back to our house to take the money and then pay back ... we borrowed the money from our friends and relatives."* (ID 114, poverty score 26)

An interview with the pharmacist confirmed that, if the pharmacy judged a case to be very serious and that the customer did not have enough money, the drugs would be provided and payment obtained at a later stage. However, this type of agreement usually had to be secured, as above, with money or leaving items of jewellery.

### Support mechanisms

Staff in the obstetric unit recognised that the vast majority of patients were poor and would struggle to meet the costs.

*"The majority of patients who come to [hospital] are of low socioeconomic status and have low education."* (Honorary medical officer IV)

Two main mechanisms of support for out of pocket expenses were identified within the hospital. A formal mechanism for providing support to families was available through the Social Welfare Organisation (SWO), a government agency set up to help those patients who could not afford their treatment. An alternative informal mechanism known as the "poor fund" was established by the doctors on the obstetrics ward.

### Social Welfare Organisation (SWO)

Although the SWO was the official mechanism of support, it was initially hard for the researcher to locate it in the hospital. Many people knew of it, but the details of where it was and how it operated were often vague. Several attempts were made to visit the SWO before finding it open. It was also difficult to find out exactly how this mechanism of support worked, suggesting that its functioning might also be obscure to those using the hospital.

The manifest purpose of the SWO was to help patients buy necessary drugs or pay for medical investigations. It had a limited budget provided by the Government, and also relied on *Zakat* donations. *Zakat* donations are part of almsgiving in Islam and are often made during the month of Ramadan. The SWO did not operate explicit means testing of cases for support, but instead relied on the recommendations of doctors. If a doctor considered that a patient needed help from the SWO, s/he had to get the signature of both the professor of the department and the hospital director. The SWO would then buy the drugs or provide payment for the investigations or surgery. The manager of the SWO office estimated that typically they would help 200–300 cases each month across the whole hospital (not just the obstetrics unit), although in some months it could be more than this.

Obstetrics staff did describe the SWO in conversation but noted that the process of getting the necessary signatures could be very time consuming, and the office was only open

from 8am to 2pm and not on Fridays or holidays. Obstetrics staff perceived the SWO to be most suitable for cases where there was no immediate danger.

*"The assistant registrar is in charge. Sometimes they refer to Social Welfare Organization but this is very limited so are more likely to do this for elective situation. It is not suitable for emergency situation."* (Professor of Obstetrics and Gynaecology 1)

*"... neither of the doctors saw the Social Welfare Organisation as a possible source of health – it is a "lengthy procedure" they said, and also "they have so many requests that how can they manage?"* (Field notes on informal interview with medical officers, following admission of a poor woman with no relatives accompanying her and only 46 BDT to pay for treatment).

### The "Poor Fund"

The limitations of the SWO had led staff to develop their own less formal system to provide help for those least able to afford treatment. All doctors interviewed provided similar accounts of the poor fund and how decisions were made to distribute supplies or money. In each "mat unit" (team of doctors within the obstetrics unit) the assistant registrar (a doctor) was in charge of the poor fund.

The poor fund consisted of supplies of emergency drugs, other consumables such as gloves, and some money. The drugs were commonly collected from "more solvent" patients. The doctors would ask wealthier patients to buy more than they needed so that in an emergency they could take the surplus to give to the poorer patients. Drugs were bought by a patient or her relative and were usually kept in a box at the head of the bed. On several occasions doctors were observed rummaging through these boxes to find resources to help a poorer patient who required immediate treatment. The doctors also collected drug samples and marketing handouts from pharmaceutical representatives. Several women described this in the interviews.

*"I saw one patient who needed a caesarean but the patient wasn't able to buy the medicine. Then from me and another two patients extra medicines are used for that patient's caesarean."* (ID 59, poverty score 32)

The hospital did provide some drugs without charge, including oxytocics, antibiotics, lasix, magnesium sulphate, and IV fluids, but supplies were insufficient. The doctors often commented about the pilfering of supplies by wardboys between the central store and ward, but it was difficult to find evidence of this. Only on the eclampsia ward did the provision of magnesium sulphate seem to be constant, with a large box full located on the nurse's desk.

### Deciding who to help

Although patients who were in a very serious condition caught the attention of doctors, women in a less serious condition had to sit and wait and then actively seek help from the doctors. Poorer women appeared less likely to ask the doctors for help or to have attendants willing to do so.

A senior doctor said that in an emergency there was "no discrimination" but, in elective cases, better-off patients might get treated quicker because they could afford to pay. Similarly, medical officers reported that they would always be able to help in an emergency, but not routinely to the degree that they would like. One gave the example that a woman may require four bags of blood but that they may only be able to provide two. Another medical officer joked: "the poor fund is often poor". All doctors mentioned that the lack of drugs and supplies was a constant frustration.

There was no formal assessment of poverty to assess which women were in greatest need of help. Rather, doctors made judgements and decisions—which we refer to as "adjudications"—of women's condition and need for financial support. Firstly, the severity of a woman's condition, in

### Box 1 Providing help: extract from researcher's observation field notes

The patient arrived on her own at the hospital. She had a bag with a few belongings with her. She was from the area of the city by the river that is being demolished. Her husband had left her and she had no one with her. She was 9 months pregnant. This was her second pregnancy. The doctors, on seeing her situation, were keen to find out whether there was a complication as otherwise they would advise her to go home as she could not afford anything at the hospital. The patient tried to show them that she had money and produced a small bunch of notes that amounted to 46 BDT. The doctors laughed at "what was she going to afford with this?"

After initial examination she was diagnosed as full term pregnancy and big babies. This diagnosis was later changed to foetal breech and jaundice. She arrived at the hospital around 9 am. The only thing written on the order on admission was a life of starvation solution – by lunchtime I had noticed that even this had been scored out. I spoke to the doctor who carried out the initial examination and asked what would be done as clearly this patient was going to be unable to afford any treatment if needed. He said that it was a big problem and that he would have to consult with their registrar about what they could manage. The doctor was concerned that there was no one to bear responsibility, especially in instance of operation, and also no one to manage drugs or blood. By late morning she had had to thumbprint a statement on her nose saying that if the patient died due to lack of drugs or blood it was no fault of the doctor or hospital authority.

Later in the day the patient was moved to share a bed with another patient but was at this stage receiving no treatment. She was visibly jaundiced. I asked another doctor what was going to be done or if the patient required any further treatment. She said that as she was "full term pregnancy and labour pain", they would just see how things progressed—as she was deep jaundice they would want to do everything to avoid operating. She hoped that she would have a normal delivery so that no treatment was required. If she needed an episiotomy they could manage that, but they could only manage the minimum. If she did need to have a caesarean section then this would be hard. They would have to use their poor fund; the poor fund is arranged by getting extra drugs from solvent patients (she showed me that she had extra sets of gloves in her pocket that she might use, for example, when this patient delivers). Blood, she said, was a major problem (it costs around 400 BDT for a bag of blood).

particular whether it was life threatening, was taken into account. Secondly, judgements were made about the presence of any accompanying attendants with women and whether, having been given a prescription, someone appeared with the drugs.

*"I would judge the case and if it seemed that the patient would die in an hour or two then we would have to manage the necessary drugs."* (Medical Officer)

*"You just keep shouting at them to hurry up and buy the drugs so that if after a couple of hours they have not bought the drugs they are not likely to be in a position to do so."* (Medical Officer)

Another doctor explained that those most in need had common characteristics:

*"The distribution of poor funds is dependent on nature of doctor. Patients who usually have to be helped are those who have come a long way and have no property or those with no attendants who require active management."* (Medical Officer)

The poor fund thus operated a "wait and see" policy, meaning that women might be left to deteriorate before help was provided. Box 1 gives an example of the decision making process by doctors when a patient could clearly not afford to pay for any treatment. The disclaimer of liability described in box 1 was not a standard inclusion on all case notes but was inserted if staff could see that a patient was struggling to arrange the drugs and blood required. As one medical officer explained:

*"It is not possible to help all patients and it is on the shoulders of the doctors. Patients may blame the doctors so this statement is used to cover the doctors and hospital!"* (Medical Officer)

The statement thus makes an explicit acknowledgment that inability to pay may adversely affect treatment.

## DISCUSSION

EmOC is central to maternal health strategies in many countries.<sup>29-30</sup> This study suggests that, although previously neglected, the third phase of delay may be a source of considerable inequity in access to obstetric care. Reaching a hospital providing EmOC was not enough in our study hospital to secure treatment; poorer women faced greater disadvantage in attempting to resource their treatment, and the hospital's formal support mechanism was inadequate. A "poor fund" operated by doctors, based on implicit "adjudications" of social and clinical eligibility, was a crucial means of support but, with insufficient funds, could not meet all demands placed on it. These findings have direct relevance in exploring the third phase of delay and highlight the need to consider equity in all attempts to increase the availability and quality of obstetric care in developing countries.<sup>17-19</sup>

Our study has a number of limitations. Firstly, research focused on a single site which, though very common in ethnographic studies, raises questions about generalisability. The hospital was better resourced than many facilities in Bangladesh, and it is likely that the operation of a poor fund system at district or sub-district facilities would be even more dependent on the motivation of individual health professionals.<sup>12</sup> Secondly, our study did not directly consider the effects of poverty on clinical outcome. Unsystematic record keeping at the hospital meant that it was very difficult to retrieve case notes for review. Future work may benefit from a case study approach where individual patients are followed throughout their care within the hospital in order to establish whether clinical outcomes are worse for poorer women. A further consideration is the effect on practice of the observer who, as a white female, visibly "stood out". However, visits to the hospital ahead of the study and the 6 month period of data collection meant that the researcher and her interpreter were very familiar faces and the sheer business and chaos on the wards meant that staff often had little time to pay attention to them.

Despite these limitations, our study offers important insights into the equity issues that arise in hospitals providing EmOC in developing countries by showing how systems and structures tend to disadvantage poorer women. It confirmed previous indications of substantial monetary costs associated with treatment,<sup>14-17</sup> even when hospital stays are nominally free. This study has also revealed how families attempted to raise money, and the potential of this for further impoverishing families. Although our study did not follow families beyond 1 month after follow up, the experiences of loss of land, crops, and being in debt to meet unexpected expenditure are common examples of how out of pocket expenses can push families into a self-perpetuating cycle of vulnerability, powerlessness, poverty, isolation and physical weakness.<sup>11</sup> The importance of social networks and social capital, particularly in the form of relatives willing and able to raise money for women in need, was very evident in our

## Key messages

- Women had to mobilise significant financial and social resources in order to fund out of pocket expenses.
- Poorer women faced greater challenges to receiving treatment as relatives struggled to raise necessary cash, and were more likely to be further impoverished by having to pay for care.
- The official financial support mechanism was bureaucratic and largely unsuitable in emergency situations. Doctors operated a less formal "poor fund" system to help the poorest women, but "adjudications" of need for support were not based on explicit criteria.
- Limited resources led to a "wait and see" policy that meant women's condition could deteriorate before help was provided.
- Systems of emergency obstetric care that rely on poor women paying for out of pocket expenses are likely to result in inequities.

study. Social capital was crucial in securing extra money, but being able to command such resources was dependent on existing financial capital,<sup>14</sup> underlining the weaknesses of systems that rely on out of pocket expenses for poorer women.

The existence of a formal support agency in the form of the SWO pointed to a recognition of a need for support with out of pocket expenses. However, this had insufficient funds to support all those in need and the way in which it operated was inappropriate for emergency obstetric cases. The "poor fund" operated by doctors functioned as a vital compensation for the deficiencies in the formal SWO, but was itself a limited resource whose rationing depended crucially on adjudications by staff about what we term the "candidacy" of women.<sup>7</sup> Such adjudications appeared to draw not only on the clinical eligibility of women, but also on their social eligibility, and clearly have implications for equity. Taken together, these findings show how poor women are at serious risk in an obstetric emergency, even when they have reached a hospital that is supposedly "free".

All countries face the challenge of meeting the health needs of the poorest people. The challenge is greatest for developing countries such as Bangladesh where low income is compounded by large informal economies, weak administration, and high levels of corruption.<sup>31-33</sup> In the absence of a system of universal access to free health care, our study highlights the need for financial support to enable timely low cost treatment for all women requiring EmOC. Previously proposed schemes of fixed charges in maternity services<sup>14</sup> or self-selection for payment<sup>17</sup> are either unsuitable for emergencies or would be fraught with difficulties in implementing exemption policies without leakage to the non-poor.<sup>34</sup>

One promising way forward might involve an equity fund operated by a third party such as a non-government organisation (NGO).<sup>35-36</sup> Bangladesh benefits from an extensive network of established NGOs and such a system would relieve staff from making the type of adjudications we observed while avoiding the bureaucratic and administration problems associated with the SWO. Such schemes in Cambodia appear to have improved access to care for the poor, but pilot work would be needed to establish the feasibility of such schemes in other countries. The success of any scheme is, however, likely to be dependent on well functioning health facilities and increased transparency and

monitoring of resource use as part of developing quality assurance.<sup>17, 18, 19</sup>

In conclusion, getting poor women who need EmOC to hospital in a developing country is not enough; once in a hospital they continue to be at risk if they have to meet expenses associated with their care. If inequities are to be reduced, finance mechanisms for obstetric emergencies must be found that can be mobilised quickly with minimal bureaucracy, reduce the burden of out of pocket expenses, protect users from further impoverishment, and ensure ability to pay does not influence treatment decisions.

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colleagues' work will find themselves yet again reporting on maternal mortality at the global and country level by using tortuous statistical techniques and educated guessing.

A simple, and some would argue bad, solution could be to drop maternal mortality as a measure on the global agenda and replace it by some proxy measures for maternal health. The reproductive health community has been trying to find such proxies, but without too much success to date.<sup>4</sup> A more difficult alternative, although much more time and resources would be needed, would be to intensify efforts to build national capacity for countries to develop reliable information systems that can at least measure crucial health outcomes, explain their causes, and track national responses.

This is an exciting time in global health. Initiatives by the UK and Norway are providing real hope for a more rational approach to development assistance in health, by moving away from fragmentation to stronger coordination and harmonisation and for renewing the focus on health systems.<sup>5,6</sup> The Bill & Melinda Gates Foundation is investing considerable resources in systems, including measurement.<sup>7</sup> Bilateral and multilateral agencies are collaborating far more than in the recent past, and are re-emphasising work on health systems. The interagency support and authorship of the

paper by the Maternal Mortality Working Group provides hope that the new environment of collaboration is real. But the difficulty in coming up with the estimates of maternal mortality shows how far we are in many countries from having national health systems that can measure problems, much less solve them.

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## Rethinking interventions for women's health

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Since its birth in 1971, Bangladesh has made impressive progress, especially in the social sector. The population has doubled, but fortunately the trebling of food production has contained the food shortages and famines that previously characterised this land. Net enrolment in primary schools has exceeded 85%, and the gender gap has disappeared. Both infant mortality and total fertility rates have more than halved. Life expectancy has risen by 50%, with women now living longer than men. Such gains have benefited disproportionately groups that were hitherto marginalised, such as women and poor people.<sup>1,2</sup>

How did these gains occur? Bangladesh has seen many good public-health interventions, such as oral rehydration therapy, immunisations, vitamin A distribution, clean water, and family planning, along with increased national commitment to reduction of inequities, as

described in the Poverty Reduction Strategy Papers<sup>3</sup> and other documents. Actions that favour marginalised groups, such as a stipend for girls in schools and a food incentive to attend school for pupils from poorer families, have also contributed to a reduction of inequity. The independence war defeated religious dogmatists, effectively ending their resistance to new ideas such as family planning and emancipation of women. Then came the rise of non-governmental organisations that promoted progressive values and that scaled up their interventions for women's empowerment, education, health, and family planning to reach the whole nation.

The country has also seen decreased maternal mortality. In today's *Lancet*, Mahbub Chowdhury and colleagues' report on the reduction in maternal mortality in Matlab, Bangladesh.<sup>4</sup> Their report is interesting not only because they document an absolute decrease but