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# *Overview of the costs of obstetric care and the economic and social consequences for households*

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## *Abstract*

Childbirth can be a costly process for households in countries where financing arrangements are fragmented and fail to provide universal coverage. Seeking obstetric care results in immediate financial outlays as well as longer term economic and social consequences in terms of debt repayment and potential ongoing complications. This chapter reviews the evidence on the obstetric care costs faced by households and seeks to demonstrate both to what extent these costs mitigate access to facility-based care for certain groups, and the impact of resulting expenditures on the household economy for those who do reach the facility. The chapter further highlights the consequences of these expenditures for a woman's health, as well as the economic and social consequences for the household.

Obstetric care costs in hospitals are shown to be significant. The official user charges interact with unofficial costs, transport costs and time costs resulting in catastrophic expenditures and debt, particularly in the event of complications. Finding a source of financial protection for poor women is essential as they suffer the greatest impact of payments, and are more likely to be deterred from seeking care. Women's work and everyday poverty must be addressed alongside clinical factors in public health efforts, either by helping them plan for their delivery, providing free or less costly delivery or emergency obstetric care, or by targeting poor women through exemptions or

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cash transfers around the time of delivery. Greater government participation in the financing of obstetric care would contribute towards reducing the economic impact on households and is hence likely to increase rates of skilled attendance at delivery.

**Keywords:** household cost, childbirth, affordability, access, inequality, consequences.

## *Introduction*

In the absence of complications, pregnancy should be a simple and natural process culminating in childbirth, and requiring little external intervention. In practice, however, due to the unpredictability of birth outcome, skilled attendance at delivery is recommended, in or within easy access to a health facility, to enable appropriate management of complications in case of need (Campbell *et al.* 2006).

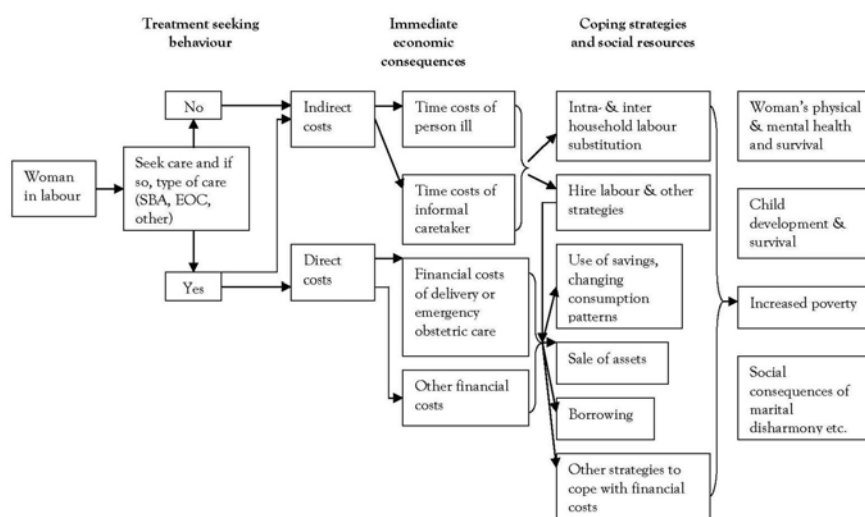
Indeed, uncertainty in birth outcome engenders uncertainty in intervention need, ranging from low intensity support (normal pregnancy) to high intensity surgical intervention in the event of complications. Uncertainty in intervention need results in uncertainty of associated resource requirements and cost, which has implications for the provision and financing of obstetric care.

In most high income settings, arrangements for financing health care ensure universal coverage of health care through general taxation or social health insurance, thus protecting households from the costs of care at the time of need and care seeking. In low-income settings, limited government resources mean that households often contribute to health care financing directly through out-of-pocket payments at the point of service use (user fees). Pregnancy and childbirth have been typically no exception, with households bearing a varying proportion of the actual cost of associated service provision, in addition to the costs of reaching care (Borghi *et al.* 2006).

These payments can have a significant and, potentially, long lasting effect on women and their families (Goudge *et al.* 2007). Figure 1 provides an overview of the economic and social consequences of such payments. The cost of obstetric care, in the absence of complications, will deter women from accessing skilled care in health facilities, especially women who are poor and live in geographically remote areas (Ensor & Cooper 2004). The

costs of obstetric care in the presence of complications, can force poor households into deeper economic hardship and poverty (Borghi *et al.* 2006). Failure to reach appropriate care in a timely manner can also result in the death or serious disability of a woman, her foetus or newborn or both. The affordability of obstetric care thus has implications for the survival and well-being of women and newborns, as well as for the household economy.

Figure 1. Flow chart of issues relating to the economic consequences of childbirth and their health and social outcomes (adapted from McIntyre *et al.* (2006))



Payment for obstetric care also has important social dimensions. Social norms around the payment of pregnancy-related care vary between contexts. In many low-income settings women do not have easy access to or control over household resources and must rely on men to meet the costs of obstetric care. This lack of financial autonomy can result in profound anxiety for women in the event of health care need, and can cumulate in social tension, conflict, and even marital breakdown, when costly health interventions such as caesarean section are required (Gruénais & Ouattara 2006; Storeng *et al.* 2008).

Over recent years, a number of studies have sought to quantify the

household costs of obstetric care and to measure the affordability of such care. There is also growing interest in the economic, health and social consequences for the household of a complicated delivery.

This chapter will provide an overview of some of this literature, illustrating the extent and impact of costs faced by households for obstetric care in different settings. Furthermore, the chapter will seek to demonstrate both to what extent these costs mitigate access to facility-based care for certain groups, and the impact of resulting expenditures on the household economy for those who do reach the facility. The chapter will further highlight the consequences of obstetric care expenditures for a woman's health, as well as the economic and social consequences for the household.

The chapter places particular emphasis on the impact of costs incurred during childbirth as this is the single most costly event during pregnancy and childbirth. The costs of terminating pregnancy, whilst clearly significant (Walker *et al.* 2007), are not considered explicitly due to the lack of evidence of the costs to households.

## *Methods*

In order to identify studies on the cost of obstetric care and affordability, a review of the PubMed database was carried out using the search terms cost AND (delivery OR maternal OR obstetric) and limited to studies in Africa and South Asia. Published and unpublished studies known to the authors were also included. Studies on the impact of different financing methods on obstetric care use were derived from a previous review of the literature (Borghi & Lissner 2004). The evidence base for the social consequences of childbirth was compiled from previous work two of the authors were involved with.

## *Costs of obstetric care to households*

The cost of childbirth is largely determined by the place of delivery and the type of delivery and extent of complications. Costs usually span beyond the medical costs associated with service delivery, to include transport (in the case of facility-based care) and time costs as well as unofficial payments associated with care. They can also include costs of neonatal hospital referral in the case of neonatal complications following delivery. Table 1 provides a

framework for considering the costs of care depending on where delivery takes place.

**Table 1. Classification of household costs by place of delivery**

Type of cost	Delivery in a Health Facility	Delivery at Home
Facility-based fees	Registration, delivery fee, bed charge, laboratory tests, laundry, food, drugs and medical supplies for mother and newborn. Surgical charges in the case of complicated delivery.	Not applicable
Additional charges	Gifts to staff and medicines and other items purchased by patients together with the value of food and washing materials brought in from outside the facility.	Gifts to attendant and medicines, food and washing materials and a safe delivery kit where relevant.
Transport fees	To and from the facility for mother and newborn.	Not applicable
Opportunity cost of time	Valuation of the time of those accompanying the woman to the facility.	Assumed to be zero since attendants can generally continue with other activities.

Source: Borghi *et al.* (2006b)

We have collated available data on the household costs of delivery care in the hospital (Table 2). We differentiate between normal and complicated deliveries and the payments associated with delivery care in facilities; the transport costs of reaching the facility and time costs of companions.

Table 2. Expenditures incurred by households (Mean) giving birth in a government hospital in USD 2006

Country (year of costs)	Type of facility	Financing system	Source	Normal Delivery				Delivery-Related Complications			
				Transport costs	Drugs	Other facility charges	Total cost	Transport costs	Drugs	Other facility charges	Total cost
Benin (2002)	1 urban teaching hospital	General taxation plus user and unofficial fees	Borghi <i>et al.</i> 2003	1.88	21.12	25.93	49.16	2.23	53.26	179.03	246.37
Ghana (2002)	1 urban teaching hospital			2.35	9.27	15.13	27.92	3.75	66.64	70.98	154.39
Ghana (2004)	Unspecified health facility/hospital		Asante <i>et al.</i> (2007)	-	-	16.88	42.09	-	-	155.02	195.00
Tanzania (1997)	1 urban hospital	General taxation, official exemptions for MCH care	Kowaleski <i>et al.</i> 2002	6.98**	3.86		10.84	6.98**	4.86	2.49	14.33
Bangladesh (2002)	1 rural hospital	General taxation plus user fees and unofficial charges	Borghi <i>et al.</i> 2006a	-	-	-	-	2.54	141.24	37.64	181.42
Bangladesh (2001)	2 rural hospitals		Afsana 2004	9.87	7.90	13.81	31.58	39.46	197.32	157.86	394.66
Bangladesh (1995)	4 urban hospitals		Nahar & Costello, 1998	8.57	16.28	17.20	42.05	25.71	84.83	44.36	154.90
Bangladesh (1994)	1 urban teaching hospital		Khan 2005	40.20	24.82	20.24	85.26	59.94	85.91	34.71	180.56
Nepal (2003)	8 rural hospitals	General taxation plus user fees	Borghi <i>et al.</i> 2006b	37.22	26.90		64.12	37.22	92.24		129.46
Burkina Faso (1995)*	12 referral hospitals	General taxation plus user fees	Sondo <i>et al.</i> 1997	-	-	-	-	24.23	37.69	20.20	82.11
Pakistan (1994) Pakistani Rupees)	3 urban hospitals	General taxation plus nominal user charges in facilities, and unofficial payments for drugs and medical supplies	Kadir <i>et al.</i> 2000	-	4.07-7.49	7.22-13.36	11.29-20.84	-	48.00	24.75	72.75

\* Assuming 490 FCFA to the Dollar in 1995

\*\*Assume one companion

Of those studies identified, most were from South Asia, especially Bangladesh (n=4) (Nahar & Costello 1998; Khan 2005; Afsana 2004; Borghi *et al.* 2006a), with a number of results from West Africa (n=3) (Borghi *et al.*

2003; Sondo *et al.* 1997; Asante *et al.* 2007) and one study from East Africa (n=1) (Kowaleski *et al.* 2002). All of the studies considered the costs of deliveries in health facilities. Three studies also considered the costs of care at home (Borghgi *et al.* 2006a; Borghgi *et al.* 2006b; Asante *et al.* 2007).

The methods used to evaluate costs varied across studies. Most of the studies followed women and tracked expenditures during their stay in hospital, which is the most reliable method of estimating costs (Kadir *et al.* 2000; Borghgi *et al.* 2003; Afsana, 2004; Khan 2005; Nahar & Costello 1998; Sondo *et al.* 1997). This has the advantage of being able to compare reported expenditures with hospital bills, and of being able to identify and talk to all those involved in making payments. The remaining studies carried out retrospective surveys with households. This method has the risk of recall error. The risk of recall error increases as the time between the delivery and the interview increases, due to memory constraints and the reduced likelihood of all those involved during the delivery being present at the time of interview. However, validation of reported costs against hospital bills can correct for the impact of recall bias (Borghgi *et al.* 2006a).

The health financing arrangements varied across settings. Official user fees were being charged in most settings. Unofficial charges were recorded in Bangladesh, and there were maternal and child health exemptions aimed at minimising out-of-pocket costs for households in Tanzania.

The cost of normal deliveries in a hospital ranged from a low of \$3.86 in Tanzania (Kowaleski *et al.* 2002) to \$47.28 in Benin (Borghgi *et al.* 2003). Drug costs were the most significant expenditure item, representing on average 43% of the total treatment cost, ranging from 35% in Pakistan (Kadir *et al.* 2000) to 55% in Bangladesh (Khan 2005).

The cost of complicated deliveries ranged from \$7.35 in Tanzania (Kowaleski *et al.* 2002) to \$355.20 in Bangladesh (Afsana 2004). Drug costs represented an even greater proportion of total cost, at an average 59% of the total treatment cost, ranging from 22% in Benin (Borghgi *et al.* 2003) to 71% in Bangladesh (Khan 2005).

The cost of a complicated delivery is significantly greater than that of a normal delivery, by an average factor of 6, ranging from 2 (Kowaleski *et al.* 2002) to 16 (Afsana 2004), depending on the method of financing care, case mix and the type of treatment provided. The existence of exemptions in Tanzania minimized the cost differential between normal and complicated

deliveries and protected households from uncertainty in terms of resource requirements.

In addition to the formal charges within health facilities women are often forced to purchase drugs and medical supplies such as bleach to sterilize the materials, bed sheets, gauze, gloves and sanitary pads due to the lack of available drugs and supplies in facilities. This can delay access to timely care as well as significantly inflating the costs of care (Sondo *et al.* 1997; Borghi *et al.* 2003; Kowaleski *et al.* 2002).

Furthermore, relatives often bring in food for patients in the case where such food is unavailable in facilities (Afsana 2004), expensive, or considered of poor quality (Khan 2005; Borghi *et al.* 2006a; Borghi *et al.* 2006b).

Unofficial gifts or tips may also be made to staff, either because women and their families are pleased with the care they received (Belli *et al.* 2004) or because of corruption. For example, in Bangladesh ayahs (nurse maids) sometimes demand payment for routine services such as pushing the patient's trolley to and from the labour/operation room, shaving the patient before delivery/surgery, giving enemas, and cleaning the room after delivery (Khan 2005; Afsana 2004). Overcharging of patients by health staff was also observed, with profits being shared among the staff responsible (Afsana 2004). There was more limited evidence of such practices from other settings.

The costs of delivery at home were only measured in three studies (Asante *et al.* 2007; Borghi *et al.* 2006a; Borghi *et al.* 2006b). The costs of a normal delivery at home, when attended by a midwife were similar to the costs in a hospital; however, the costs of a delivery with a traditional birth attendant were significantly lower. These studies found that while there was no significant difference in the amount paid for a normal delivery in hospital by wealth group, the poor paid significantly less than the least poor to a traditional birth attendant during home delivery. They had greater control over the nature of treatment provided and the amount of money they spent (Borghi *et al.* 2006a; Borghi *et al.* 2006b). The study by Asante *et al.* (2007) did not assess payments by wealth group, but showed that the cost of a home delivery with a TBA was about half that of a normal delivery in a health facility. In Bangladesh, Moran *et al.* (2007) also reported a much lower cost of home-based care (US \$1) compared to care in health facilities (US \$11) with householders preferring self treatment as they could purchase partial

amounts of medications, reducing the financial cost.

Distance from a facility adds to the financial burden facing households through transport charges and time spent away from productive activity (Kowalewski *et al.* 2002). Transport costs were found to vary between \$1.88 (Borghini *et al.* 2003) and \$40.2 (Khan 2005) for a normal delivery and \$2.23 and \$59.94 for a complicated delivery (*ibid*), the higher costs for complications reflecting the additional distance to reach a referral facility. In areas with difficult geographical access, transport can be especially significant. For example, in Nepal, transport costs represented over 50% of the costs of a normal delivery, and 25% of a complicated delivery (Borghini *et al.* 2006b). In settings where user charges are nominal or absent, transport costs will also represent a larger proportion of the total, deterring geographically remote households from seeking care. For example, in the United Republic of Tanzania, where exemptions for mother and child health were in effect, out-of-pocket payments for care represented only 6% of the cost of a normal delivery and 1% of a surgical delivery, with transport accounting for almost half of the total expenditure (Kowalewski *et al.* 2002).

Women seeking care in a health facility for delivery are usually accompanied by a family member or neighbour, who also sometimes participates actively in the provision of care (Behague *et al.* 2008). In Nepal, women were usually accompanied by more than one person, most frequently their husband (67%), followed by a neighbour (49%), their mother-in-law (40%), or their own mother (15%) (Borghini *et al.* 2006b). Fifty five percent of households reported the companion/s losing income as a result of accompanying the delivering woman (*ibid*). The opportunity cost of companion time is therefore also likely to be factored into the decision-making process about seeking care.

An example of how men's reluctance to give up productive time delayed care seeking is given by a woman in rural Bangladesh:

*They tell their wives to let it be (ignore the illness) because it is already there and the family's work is still getting done. Finally, when she is unable to work or to serve her husband's [sexual] needs, then maybe the wife is treated. Or else she is sent to her parents' home (Shuler *et al.* 2002: 198).*

A few studies have investigated time costs for companions associated with travelling to a facility combined with the time spent in hospital (Table 3). The lost income incurred by companions, in the case of a complicated delivery (ranging from \$4.13 (Borghi *et al.* 2006b) to \$78.5 (Kowaleski *et al.* 2002)) was significantly higher than in the case of a normal delivery (\$1.1 (Borghi *et al.* 2003) to \$10.2 (Kowaleski *et al.* 2002)). The opportunity costs of time to companions are often inflated in the case of complications by the greater distance to travel to reach appropriate care and by the lengthier hospital stay.

**Table 3. Companion Time Costs in USD 2006 Associated with Giving Birth in a Hospital (inclusive of travel time and time in facility)**

Country	Source	Normal Delivery			Complicated Delivery		
		ALOS* in days	Opp cost of time	Comments	ALOS* in days	Opp cost of time	Comments
Ghana	(Borghi <i>et al.</i> 2003)	1.2	1.1 (4% of total)	2 relatives visiting for 2 hours each	10	6.2 (5% of total)	2 relatives visit per day for 2 hours each
Tanzania	(Kowaleski <i>et al.</i> 2002)	1.1	10.2		8.3	78.5	
Bangladesh	(Borghie <i>et al.</i> 2006a)	0.17	1.48	3 compa- nions	0.42	4.13	3 compa- nions
Nepal	(Borghie <i>et al.</i> 2006b)	1.8	7.07	Usually more than 1 person, most often husband	5	23.87	Usually more than 1 person, most often the husband

\*ALOS: Average Length of Stay.

### *Affordability of obstetric care*

The fact that women and their households pay for care does not mean that it is affordable. A consideration of out-of-pocket payments alone does not tell us about how these costs impact on the household economy.

A common framework for considering the economic impact of health expenditures is its relationship to household income. Health expenses are

often termed 'catastrophic' if they consume above a threshold level of income. Some authors have considered costs that consume more than 10% of household income to be catastrophic (Ranson 2002).

In low-income countries, household income is notoriously difficult to quantify, especially for those working in the informal sector and who are reliant on non-cash income. Consequently, few studies have estimated the impact of obstetric care costs on household income. Gross Domestic Product (GDP) per capita can be considered as a very crude measure of individual income. Despite the recognised limitations of such a measure, it does provide some indication of the relative affordability of care.

Using this threshold, the costs of care for uncomplicated deliveries represented around 10% of GDP, with the exception of Burkina Faso, 5.1% (Storeng *et al.* 2008) and Tanzania, 3% (Kowaleski *et al.* 2002). The cost of a complicated delivery ranged from a minimum of 11% of per capita annual GDP in Benin to over 100% in the case of Bangladesh (again excluding Tanzania) (*ibid.*).

While such estimates suggest that delivery care is unaffordable, the affordability of such care can be more fully captured if we consider household ability to access funds, and the impact of expenditures on household's minimum needs consumption, asset ownership and debt (Russell 2004).

Rural households reliant on subsistence farming are often unable to access cash at the time of need due to temporal or seasonal cash availability. This was reportedly a major constraint to paying for health care for between 40 and 50% of households in West Africa (Soucat *et al.* 1997). However, difficulty accumulating adequate resources for payment is not restricted to rural households.

In urban Bangladesh, 51% of families did not have enough cash for a normal delivery and 74% did not have enough for a caesarean-section and so had to borrow money from a money lender or relative (Nahar & Costello 1998). The economic impact of emergency obstetric care expenditures is usually particularly acute. In Burkina Faso, women who had received hospital treatment for life-saving complications reported more frequent spending of savings, borrowing and sale of assets than did women who had been classified as having an uncomplicated delivery in the same hospitals (Storeng *et al.* 2008). Only 51% of those needing transfer to referral care had the money available in another study in Burkina Faso (Sondo *et al.* 1997).

Searching for money to pay for transport and care takes time and delays access to treatment, exacerbating maternal and newborn morbidity and increasing the risk of death for both mother and baby (Gohou *et al.* 2004; PMMN 1995).

Although facility-based exemptions for poor patients sometimes exist to protect the poor, they are not necessarily implemented. In Burkina Faso, those who were eligible to receive such protection were often prevented from accessing it due to administrative and other practical difficulties associated with the policy's implementation (Storeng *et al.* 2008). In many contexts, the structural constraints on accessing protection mechanisms are compounded by the social stigma associated with being labelled as poor, and the inferior quality of care that patients fear will be delivered once they have been identified as unable to pay.

The poor are more likely to need to borrow money, and will face the greatest constraints in paying money back. For example, in Nepal, sixty percent of those in the highest income quintile were able to pay for obstetric care from their existing capital. In the lowest income quintile, only 32% could meet costs from their existing capital (Borghi *et al.* 2006a). In Bangladesh, rural households were less able to generate revenue from existing resources, and borrowed almost double that of urban households (Khan 2005).

For households lacking savings or access to finance, contributions and remittances from kin and extended social networks can contribute to meeting the cost of care. In Nepal, the main source of borrowed money was a friend/relative (59%) followed by a money lender (31%), at rates of over 20% (Borghi *et al.* 2006b). Those with more limited social networks will be more reliant on money lenders. In Bangladesh, 25% of households borrowed from money-lenders to pay for care, with reported interest rates of 5%-30% per month (Khan 2005). The process of searching for funds and the diversity of sources involved is highlighted by one young woman in Burkina Faso:

*My father asked for part of it at the mosque, and my mother also asked for some and then we added our 5,000F (from savings). We haven't reimbursed them...my mother got 1,000 F from one person and 1,000 from another, 1,500 from yet another. We had a bit of maize that we sold. I had three cloths and I sold these and added it all up and had*

15,000 F, which we went to give (to the hospital) (Storeng *et al.* 2008: p.551).

Whilst, in principle, pregnancy is a long enough period to allow households to save, in practice many may be reluctant to do so because of the assumption that the birth will be uncomplicated and can be managed at home, limiting the need for funds. Households may also oppose the idea of saving, if they distrust the agency managing their funds (Sondo *et al.* 1997).

### *Costs of obstetric care as a barrier to accessing care in facilities*

The potentially high costs of obstetric care make it unaffordable for many households. Consequently, in the absence of severe complications, the cost of obstetric care represents a significant demand-side barrier to accessing care during delivery, especially amongst the poor and geographically remote (Koblinsky *et al.* 2006). Whilst user charges in facilities only constitute one component of the total cost of care seeking, there is a certain body of evidence that has explicitly evaluated the impact of such charges on demand.

Evaluations of delivery care rates before and after the introduction of user fees document in most cases a reduction in the number of facility-based deliveries (Owa *et al.* 1992; Owa *et al.* 1995; Mbugua & Segall 1995; Taylor *et al.* 1993). In Nigeria, deliveries fell by 46-50% following the introduction of fees in one hospital (1983-1988) (Owa *et al.* 1992; Owa *et al.* 1995). The number of unbooked deliveries as a proportion of all deliveries also increased, suggesting that women were not planning for a hospital delivery and only sought care if they developed complications (*ibid.*). A 12% reduction in maternity admissions was noted in Kenya (fees were withdrawn a year after their introduction) (Mbugua & Segall 1995), and in Harare, Zimbabwe, deliveries in a health centre fell by 19% between 1981 and 1988 following the introduction of fees (Taylor *et al.* 1993). In Rwanda, the utilisation of health-centre services dropped from 0.3 curative consultations (inclusive of delivery care) per capita in 1997 to 0.25 in 1999 following the introduction of fees (Schneider *et al.* 2006). Bolivia experienced a dramatic increase in demand for antenatal and delivery care when user fees were abolished as a part of its social insurance scheme (Dmytraczenko *et al.* 1998).

In Bangladesh, Afsana (2004) reported that high hospital costs bar

women from seeking such care, with the example of Shaheron who, when referred to the Medical Hospital for pre-eclamptic toxemia, refused to go, exclaiming:

*If I die, I will die here. I don't want to sell my house and sleep with my family on the street* (Afsana 2004, p. 177).

However, in a tertiary-level facility in Cambodia the average monthly number of deliveries increased following the introduction of fees - from 319 prior to the introduction of user fees to 585 afterwards (Akashi *et al.* 2004). User fees were set below pre-existing unofficial fees, and the revenue generated allocated to staff salaries. An exemption scheme was also instituted and between 4% and 7% of patients were exempted during the period (Akashi *et al.* 2004). In areas where unofficial fees exist, formalising user charges can be beneficial, especially if exemptions are well targeted (Ensor & Ronoh 2005). In Papua New Guinea, the introduction of user fees had no impact on the rate of institutional deliveries (Benjamin & Purai 2001).

The available evidence indicates that service and non-service based costs generally interact and serve to reduce access to care for non-complicated cases, especially for the poor. Although, as discussed earlier, when severe complications arise women will usually seek care: the economic impact and cost will be magnified, engendering a series of negative longer term consequences. The extent of the impact of user charges for obstetric care will therefore depend upon the level of the charge, the degree of complication, and extent of non-service based costs.

### *Consequences of the economic burden of obstetric care*

The consequences of excessive costs are multiple and include short and long term effects on the use of services by women and their children's use of services (during and after pregnancy); for themselves or their children; the household economy; and women's social relationships. To date, there has been very little research into the long-term consequences of the costs associated with pregnancy and delivery, reflecting a more general lacuna in the literature on women's health and well-being after pregnancy in low-income countries. A recently completed study is the first published study to examine a range of outcomes in women following severe obstetric complications (Filippi *et al.* 2007; Storeng *et al.* 2008).

## ECONOMIC CONSEQUENCES

Households often experience difficulty recovering from the economic shock that can be associated with obstetric care (Storeng *et al.* 2008). In Burkina Faso, those who had incurred debts associated with emergency obstetric care repaid their debt more slowly than households that had accrued debt to pay for uncomplicated deliveries. One year after the initial expenditure 12% and 3.7% respectively had not repaid all the money borrowed to meet the hospital cost (*ibid.*).

The source of funds to pay for delivery care can have significant long term welfare implications for the household. Where costs are financed by borrowing, there may be a reduction in future consumption; and the long-term effect will be magnified considerably if borrowing takes place at high interest rates. Where the response is to draw on savings, the impact may be less obvious, but also potentially more long-term, such as increased vulnerability to future shocks or seasonal fluctuations in income, or forgone investment in future production.

In the case of complications during delivery, maternal ill health also affects the household economy through reduced productivity of the mother. Women who are unhealthy or who die can no longer contribute to paid and unpaid work. Although most of the evidence comes from higher income countries, a variety of studies have shown that maternal ill health reduces labour force participation (Barr & Hall 1981; Wolfe & Hill 1995) and decreases the probability of employment (Moffitt 1983) and earning potential (Wolfe & Hill 1995). In Burkina Faso, debt and depletion of assets contributed to cycles of debt and households were often unable to continue productive activities due to capital depletion. Women were often unable to contribute to the household economy in the same way as before the pregnancy due to ongoing health problems (Storeng *et al.* 2008). In such cases, labour substitution by other female household members or children often occurred.

Concern about the lost productivity associated with childbirth means that women can come under pressure to work until very late stages of pregnancy to minimise lost productivity and income, and that care seeking is seen as a last resort, only once serious complications set in. A woman from Burkina Faso whose pregnancy ended in a stillbirth explained:

*I was never able to rest. When I said that I was sick they thought that I was taking advantage of my pregnancy to be able to do nothing. To them I was being lazy. It was only when I was lying down not able to do anything or go to the field that they started to take me seriously (Storeng et al. 2007).*

#### SOCIAL CONSEQUENCES

The economic burden of maternal health care is not only expressed in financial and productive terms, but also has potentially far-reaching social implications. One example of this is that the actual stress of meeting the cost of care can bring about or exacerbate existing social tensions, including between partners. In Burkina Faso, the immediate challenge of meeting the cost of care combined with the resulting daily economic difficulties sometimes brought forth the dissolution of relationships, particularly between young, unmarried couples, often leaving the woman in a state of heightened social and economic vulnerability. Furthermore, women often blamed themselves for aggravating pre-existing financial difficulties resulting in intra-household competition and social tensions. Nearly a year after she had experienced a severe pregnancy complication that necessitated expensive, life-saving intervention, one woman put it like this:

*Even yesterday they were speaking about it. They were saying that if it hadn't been for the cost of my operation the problem of buying [food] wouldn't have been as bad, because we could have spent the money that we spent on the operation to buy millet. When they say things like this, I just get up and leave the room and wait until they have finished before I go back in and join them (Storeng et al. 2008: 552).*

#### HEALTH CONSEQUENCES

While research is scarce in this area, it is generally believed that women who do not receive all the professional care they need during pregnancy, delivery and the postpartum because of the cost barrier may recover less quickly from pregnancy and childbirth and suffer physical and mental health problems. In addition, economic stress is a risk factor for mental distress (Chandra et al. 2002; Patel et al. 2002) and can be linked to adverse psychological symptoms when associated to unaffordable emergency obstetric care (Fillippi et al. 2008). Postpartum depression has recently been noted as a potentially serious public health problem also in low-income countries, affecting

between 5 and 60 percent of women (ibid). Women's self-reports of physical symptoms and mental health problems are often inter-related, affecting productivity, particularly when they remain untreated (Filippi *et al.* 2007).

In Burkina Faso women who survived pregnancy complications were more likely to have experienced mental distress in the first few months after the end of the pregnancy than were women who had an uncomplicated delivery. Overall, these women were more likely to report that their experiences during pregnancy had negatively impacted on social relationships and livelihoods, due to the interplay between the physical trauma associated with the medical complication and the economic calamity it brought about (Fillipi *et al.* 2007). Women who are single when they become pregnant are particularly at risk of long-term adverse consequences, as are women who have lost their babies (Filippi *et al.* 2007).

#### CONSEQUENCES FOR CARE IN THE POSTPARTUM

The lack of affordable maternity care overall may also play a role in reducing the demand for postnatal services, which women and families may perceive as an additional source of financial burden and not essential. Indeed, in many low-income countries, the uptake of postnatal care is much lower than the uptake of antenatal care and delivery care. There are many reasons for this low coverage, including a lack of prioritisation of postnatal services by public health authorities (Warren *et al.* 2006).

In Burkina Faso women more often had trouble accessing care they perceived they needed in the post-partum if they had had a severe complication and were thereby exposed to high economic costs (Storeng *et al.* 2008). The low coverage of postnatal services exists despite the reporting of a large amount of self-perceived morbidity in the postpartum period (Filippi *et al.* 2007; Uzma *et al.* 1999).

The high cost of delivery care may also affect the ability to pay for preventive services, such as the health care of the infant and uptake of family planning during the postpartum period, although these relationships require further investigation (Islam & Gerdtham 2006).

### *Conclusion*

This chapter highlights the importance of considering the broader impact of unaffordable delivery and emergency care on both the short term and long

term health and economic welfare of women and children and other members of the family. Although, the literature review was not systematic, the chapter compiled an extensive range of evidence on obstetric care costs, and their economic and social consequences, from which key conclusions and recommendations can be made.

Obstetric care costs in hospitals have been shown to be significant. The official user charges interact with unofficial costs, transport costs and time costs resulting in catastrophic expenditures and debt, particularly in the event of complications. Delivering at home removes the cost of transport and reduces time costs, as well as giving more flexibility to households to pay as much as they can, contributing to household preferences for a home birth in the absence of complications.

Finding a source of financial protection for poor women is essential as they suffer the greatest impact of payments, and are more likely to be deterred from seeking care. Women's work and everyday poverty (both before and after delivery) must be addressed alongside clinical factors in public health efforts, either by helping them plan for their delivery, providing free or less costly delivery or emergency obstetric care, or by targeting poor women through exemptions or cash transfers around the time of delivery.

Many studies have reported difficulties in identifying and exempting the poor. An alternative option would be to exempt all mothers from obstetric care costs, especially in the event of complications, as a delivering woman is easy to identify, and those delivering in the public sector are more likely to be poor. In Tanzania, for example, where official exemptions were available for maternal and child health care (MCH), the costs were significantly lower than in all other countries. The existence of these exemptions also reduced the differential in cost between normal and complicated deliveries.

Greater government participation in the financing of obstetric care would reduce out of pocket payments for care and is hence likely to increase rates of skilled attendance at delivery (Kruk *et al.* 2007).

Setting standard and well-publicized prices would reduce the unpredictability of costs and help households to save and ensure that they have sufficient funds available to pay for care when needed. However, obstetric complications will always be unaffordable unless heavily subsidised. The cost of obstetric complications bears the greatest and most damaging longer term consequences for households. It is therefore important that

debates about financing options for maternity care are framed not only with reference to skilled attendance for normal delivery, but that they also consider the affordability of emergency care for complications, including for complications resulting from unsafe and incomplete abortions. Unless protection is extended to emergency obstetric care, financing policies seeking to protect women will not be able to protect those who need care the most and whose lives depend on receiving such care.

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