Does Maternal Health Voucher Scheme Have an Impact on Out-of-Pocket Expenditure and Utilization of Delivery Care Services in Rural Bangladesh?

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INTRODUCTION

Background: In rural Bangladesh, around 71% of births take place at home. Home delivery is preferred as it is associated with low cost and delivery care at facilities is considered only for emergency obstetric care (EmOC). Bangladesh is predominantly a rural country and also Bangladesh, being a low income country with a vast majority of its people living in poverty. Here, utilization of skilled attendants at delivery almost three times less in rural areas compared to urban areas and also it is seven times less among the poorest (9%) compared to the richest (63%) households. Borrowing, using household savings, and financial assistance from relatives were also found to be important sources in paying for the delivery care.

In the health sector of Bangladesh, the primary source of finance is out of pocket (OOP) expenditure and primarily spent in the private sector. Here 64% of total health care expenditure is paid by individuals and rest by the government. In many situations, OOP payments for health care can cause households to incur catastrophic expenditures, which in turn can push them into poverty. Bangladesh has one of the highest rates of catastrophic illnesses which drive up 3.8% of the population into poverty every year. And OOP spending was found to be major source for paying for the delivery care for most of the households.

To address this equity issue, the Government of Bangladesh piloted a demand-side financing (DSF) scheme (popularly known as the maternal health voucher program) in 21 upazilas (sub-districts) from 2006 and expanded to 33 upazilas in 2007. The selected poor women under DSF scheme receive a package of essential maternal health care services, as well as treatment of pregnancy and delivery related complications. This program also provides supply side financing to service providers. This program has been expanded to another 11 upazilas in 2010. Population Council with funding from the Bill and Melinda Gates Foundation has been evaluating the impact of voucher programs in five countries including Bangladesh.

As a part of evaluation activities, Population Council conducted a baseline survey in 2010 and follow-up survey in 2012 in selected new 11 DSF (intervention) and 11 non DSF areas (control). This article used information from the baseline and follow-up survey to examine the impact of this intervention on utilization as well as out-of-pocket expenses incurred by women for availing delivery care services at facility.

METHODOLOGY

Methods: A quasi-experimental research design with pre and post studies in intervention and control areas was conducted for evaluating the impact of demand side financing vouchers on maternal health care services. The assignment to the intervention was nonrandom. In this study baseline survey was conducted in 2010 and follow-up survey was conducted in 2012. The study was conducted in 22 sub-districts where 11 sub-districts were intervention and other 11 sub-districts were control. A total 3300 women with 1650 experimental subjects and 1650 control subjects were selected. From each sub district, three of nine unions and three villages from each union were selected through probability proportional to size and finally, from each selected village, required numbers of respondents were interviewed. Women of 18-49 years of age were interviewed who gave birth in the previous 12 months from the starting date of data collection. Respondents' socio-economic and demographic characteristics as well as service utilization and cost of each service were collected by using a structured questionnaire in this survey. Following the same sampling procedure, we interviewed same numbers of respondents in the follow-up survey.

Out-of-Pocket Expenses: To examine the expenditure pattern, women were requested to report expenses on card/registration fees, consultation fees, laboratory examination, medicine, round trip transportation and any other associated costs to avail maternity care services. These expenses have been divided into three broad categories: medical cost at the facility, medical cost outside the facility, and transportation cost. "Medical cost at the facility" or internal medical cost includes card/ registration fee, consultation fee (unofficial), laboratory charges, drug cost (unofficial), tips to support staff for expediting services, and attendant expenditures for staying at the facility.

Expenditures to purchase drugs and get laboratory services from the other private sector are considered as "medical cost outside the facility" and actual cost women pay to transport providers is calculated as "transportation cost".

Data Analysis: The main focus of the analysis was the OOP expenditure to avail maternal health care services at a facility. To assess the impact of financial benefits on the reduction of out-of-pocket payments for receiving delivery services from facilities, comparison was made at three levels: intervention and control, public and private, and voucher and non-voucher clients. The unit of analysis was the women aged 18-49 years who had delivered a baby in the year preceding the survey. Univariate and bi-variate analyses were conducted to calculate OOP expenses associated with utilization of maternal health care services from health facilities. Difference in Differences (DiD) estimation was used for examining the changes in health care utilization over time. Cost amounts are presented in Taka as well as in US dollars, utilizing Dollar-Taka average exchange rates in 2012.

FINDINGS

Utilization of delivery care services

Information on the utilization of delivery presented in Table 1 indicates an increase in the proportion of the deliveries that occurred at the facility from 19 percent in 2010 to 31 percent in 2012 in the intervention areas with the control sites experiencing almost the same increase. Use of public-sector facilities for delivery services increased in intervention sites while control sites experienced greater increase in using private sector.

In the intervention areas, private sector facilities contributed to the majority of the institutional deliveries in 2010 (11 percent) while 2012 survey witnessed larger contribution of the public sector (16 percent). On the other hand, private sector continues to be largest contributor to the institutional delivery (13 to 21 percent) in control areas.

Utilization of public-sector facilities reveals that upazila hospital is mostly used for delivery services, which doubled over time, primarily contributed by the DSF scheme. The program impact becomes evident from higher use of intervention UHCs for delivery services, which is nearly twofold of control UHCs.

Table 1: Changes in the uptake of delivery services by sites

Type of service	Intervention		Control		Difference in difference (DID)
	2010	2012	2010	2012	
Place of delivery					
Home	81.5	68.9	79.3	68.2	-1.5
Facility	18.5	31.1	20.7	31.8	1.5
Type of facility					
Public	7.6	15.8	7.8	10.7	5.1***
Private	10.6	13.5	12.8	20.6	-4.9**
NGO	0.3	1.8	0.3	0.5	1.3**
Public facility type					
Tertiary hospital	2.0	2.2	2.0	2.1	0.1
UHC	5.0	12.8	4.2	7.1	4.9***
MCWC	0.2	0.4	1.3	1.2	0.3
HFWC	0.4	0.3	0.1	0.2	-0.2
CC	0.0	0.1	0.0	0.1	0.0
Type of delivery at facility					
Normal	42.5	37.3	29.2	31.5	-1.9

Type of service	Intervention		Control		Difference in difference (DID)
	2010	2012	2010	2012	
Cesarean	49.7	54	62.6	61	1.2
Assisted	7.8	8.7	8.2	7.5	0.7
Delivery by medically trained providers	**20.6**	**33.7**	**24.0**	**35.1**	**2.0**
N	**1650**	**1663**	**1650**	**1671**	

*** p<0.001, **p<0.01, *p<0.05

Findings illustrate the pattern in the use of facilities for delivery services, approximately, two-thirds of the deliveries conducted at the public facilities were normal, while three-fourths of the deliveries were conducted through cesarean section at private facilities.

Effects of the DSF program on the utilization of delivery services were analyzed using data of the follow-up survey conducted in 2012. More than half of the voucher clients received delivery services from a facility compared to one-fourth of the non-voucher clients. Upazila Health Complexes were mostly utilized for delivery services by voucher clients. Voucher and non-voucher clients do not differ much regarding types of delivery.

Out-of-Pocket Expenses of delivery care services

The following figures focus analysis encompassing only at public facilities, illustrating the direct effect of intervention on the reduction in out-of-pocket expenses, if any. It has emerged from the 2010 & 2012 expenditure pattern that all delivery services involved out-of-pocket payments and average volume of expenditure is higher in control than in intervention.

Figure 1: Changes in expenditure pattern for **normal delivery** services according sites, by types of expenses

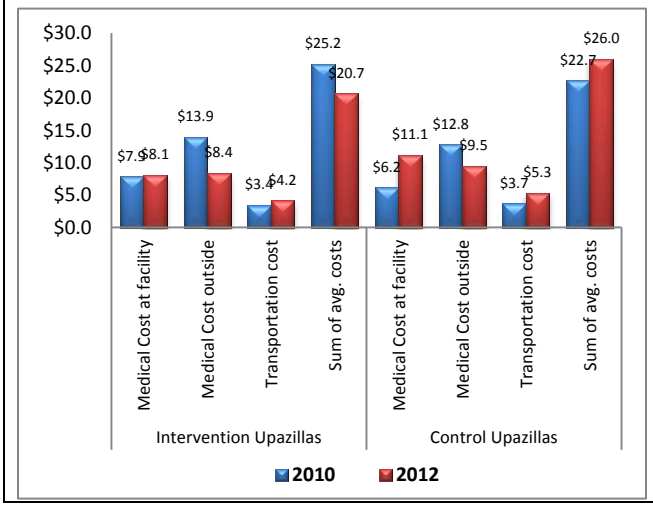

Figure 2: Changes in expenditure pattern **for cesarean delivery** services according sites, by types of expenses

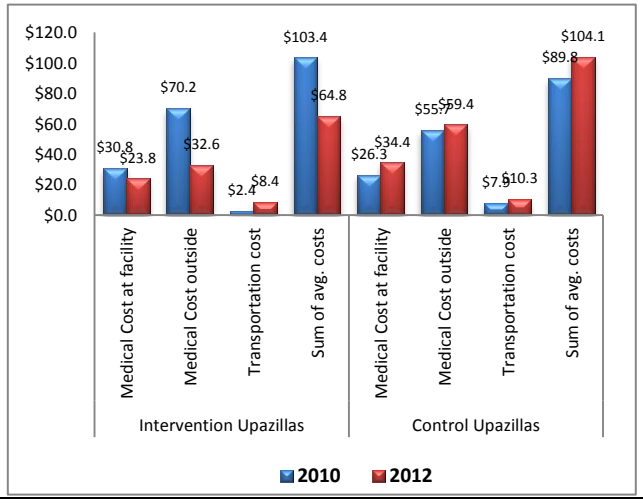

Figure 1 shows the average cost of different OOP expenses to receive **normal delivery** services from public health facility. Expenditure incurred inside and outside the facility decreased in intervention area and in control area expenditure in inside increased but outside decreased which might happen for availability of supply or free services at public facility. Cost incurred outside the facility (purchasing drugs and laboratory services) is the largest component (about half) of OOP expenditure for normal and cesarean delivery services in both areas. But average transportation cost increased in both areas. The total average cost for normal delivery decreased a little bit in intervention areas and increased in control areas.

As shown in **Figure 2,** there has been decline in the out-of-pocket cost for **cesarean delivery** women incurred as medical cost both inside and outside the facility in intervention while an increase was reported for control. Reduction in both internal and external cost implies a positive impact of DSF benefits on women in receiving cesarean deliveries. With a mixed pattern of expenditure, the differences in OOP expenses between intervention and control that women incurred in 2012 cannot be explained with the effect of the DSF program (Figure 1 & 2).

In the intervention areas, average OOP cost for receiving normal delivery service reduced by 16% (from $25 to $21), again money required for a caesarean delivery was decreased by 37% (from $103 to $65). Overall, the subsidized maternal voucher had a positive effect on cost.

DISCUSSION AND CONCLUSION

Findings reveal that there was a significant increase in the utilization of delivery care at the facility but it was also observed that use of public-sector facilities for delivery services increased in only intervention sites while control sites experienced greater increase in using private sector.

Although public sector maternity care services are officially free of cost (fully subsidized) in Bangladesh, but it is very common in Bangladesh for the clients to incur expenses for receiving health services from a government facility. The demand-side incentive package for the poor covers essential costs for maternal health care services and related to transportation also while other costs like purchase of additional medicine, unofficial provider fee and incidental costs incurred at facility are not covered under the purview of the program. Therefore, in DSF upazillas, there is no such woman who did not incur any cost to utilize delivery services. But findings suggest that, the average volume of expenditure in receiving normal or cesarean deliveries is higher in control than that of in intervention area. So, cost implies a positive impact of DSF benefits on women and this leads to assume that DSF may have contributed to lower OOP payments.

These findings necessitate the allocation of resources to subsidize the cost women incur to purchase medicine and undergo laboratory services that are not available in government facilities. Increase in transportation expenses strongly justifies the need to increase the existing amount of financial assistance the government provides to poor clients. But, without making normal delivery fully subsidized, it will be difficult to increase the rate institutional delivery as women still spends large share of their family income for receiving normal delivery services.

Besides this, implementing program at the upazila hospital alone cannot raise the rate of delivery in rural areas. Additionally, for optimum utilization of the existing health structure in rural areas, other govt. facilities need to incorporate. It was also observed that a large proportion of women are receiving services from private health facilities. Therefore, the national health financing strategies should engage the private health sector in a way that enables poor women receive services from the private sector more easily. With the right types of interventions, maternal health-related MDG may not be very difficult to achieve in Bangladesh.

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