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Encouraging maternal health service utilization: An evaluation of the Bangladesh voucher program

Ha T.H. Nguyen[a,*], Laurel Hatt[a], Mursaleena Islam[a], Nancy L. Sloan[b], Jamil Chowdhury[c], Jean-Olivier Schmidt[d], Atia Hossain[d], Hong Wang[a]

[a] Abt Associates Inc, International Health, 4550 Montgomery Avenue, Suite 800N, Bethesda, MD 20814, USA
[b] Independent consultant, USA
[c] RTM International, Bangladesh
[d] Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, Bangladesh

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ABSTRACT

With the ultimate goal of reducing maternal and neonatal mortality, many countries have recently adopted innovative financing mechanisms to encourage the use of professional maternal health services. The current study evaluates one such initiative – a pilot voucher program in Bangladesh. The program provides poor women with cash incentives and free access to antenatal, delivery, and postnatal care, as well as cash incentives for providers to offer these services.

We conducted a household survey of 2208 women who delivered in the 6 months before the survey (conducted in 2009) in 16 intervention and 16 matched comparison sub-districts. Probit and linear regressions are used to analyze the effects of residing in voucher sub-districts on the use of professional maternal health services and associated out-of-pocket expenditures. Using information on birth history, we conducted sensitivity analyses employing difference-in-differences methods, comparing women's reported births before and after the program's initiation in the intervention and comparison sub-districts.

We found that the program significantly increased the use of antenatal, delivery, and postnatal care with qualified providers. Compared to women in matched comparison sub-districts, women in intervention areas had a 46.4 percentage point higher probability of using a qualified provider and 13.6 percentage point higher probability of institutional delivery. They also paid approximately Taka 640 (US$ 9.43) less for maternal health services, equivalent to 64% of the sample's average monthly household expenditure per capita. No significant effect of vouchers was found on the rate of Cesarean section.

Our findings therefore support voucher program expansion targeting the economically disadvantaged to improve the use of priority health services. The Bangladesh voucher program is a useful example for other developing countries interested in improving maternal health service utilization.

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Introduction

Despite significant improvements in the past two decades, most developing countries will not achieve the Millennium Development Goal 5 to reduce maternal mortality by 75% between 1990 and 2015 (Hogan, Foreman, & Naghavi, 2010; United Nations, 2009). A priority toward this end is to improve access to and use of quality health services and skilled assistance at birth (Donnay, 2000; Singh, Darroch, Ashford, & Vlassoff, 2009). However, only half of parturient women receive skilled assistance at delivery and many fewer receive postpartum care (Singh et al., 2009). Women in developing countries face multiple barriers to using formal health services, including limited physical and financial access, lack of voice and decision-making authority, and lack of education (Matsuoka, Aiga, Rasmey, Rathavy, & Okitsu, 2010; Priya, 2002; Sharma, Smith, & Sonneveldt, 2005; Simkhada, van Teijlingen, Porter, & Simkhada, 2006). The poor quality of available health services presents an additional deterrent (Singh et al., 2009). The complexity of these barriers suggests that any solution to increase maternal health service utilization must be comprehensive, taking into account both health system constraints on the supply side as well as financial, cultural, and knowledge barriers on the demand side.

* Corresponding author.
E-mail address: n.hongha@gmail.com (H.T.H. Nguyen).

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In recent years, there has been a mounting interest in the use of vouchers and other innovative financing mechanisms to improve the effects of maternal and child health programs (Bellows, Hamilton, & Kundu, 2010; Bhatia & Gorter, 2007; Donaldson, Sethi, & Sharma, 2008; Ir, Horemans, Souk, & van Damme, 2010; Janisch, Albrecht, & Wolfschuetz, 2010). By providing a financial or in-kind reward conditional upon achievement of agreed performance goals, vouchers can be a promising holistic approach to encourage the use of cost-effective services by the poor and other disadvantaged populations (Gorter, 2003). Vouchers can work through supply or demand side or both. Supply-side incentives aims at improving quality and responsiveness of the service provision, while demand side incentives encourage utilization of services by not only lessening the financial burden, but also giving women the choice of providers and educating them of the benefits of using maternal health service. Vouchers are a particularly appealing approach for addressing barriers to maternal health services. The target population (pregnant women) is a vulnerable priority group that can be easily identified; a package of necessary maternal health services can be clearly defined; and the financial barriers to service use – particularly in the case of pregnancy complications – are substantial. To date, evidence suggests that many voucher programs have successfully encouraged deliveries with skilled birth attendants and institutional deliveries (Bellows et al., 2010; Ir et al., 2010). However, little evidence is based on rigorous evaluation studies, which makes it difficult to draw confident conclusions on the impact of voucher initiatives and make corresponding policy recommendations.

The current study presents an evaluation of a pilot voucher program in Bangladesh, a country where roughly 85% of all deliveries took place at home and only 18% of births were assisted by a qualified provider at the time of the program's inception (NIPORT et al., 2009). Using current and past delivery information from women residing in voucher and non-voucher areas, we perform single and double differences estimates of the program's effects on utilization of key maternal health services and associated out-of-pocket (OOP) expenditure.

In the following, we provide a brief description of the Bangladesh voucher program. We next present our data and methods, to be followed by the estimation results. We conclude with a discussion of the study's strengths and weaknesses, as well as the implications of its findings.

Bangladesh voucher program for maternal health

Known in the country as "Demand-Side Financing program", the Bangladesh pilot voucher program aims to encourage the use of maternal health services, in particular qualified birth attendance, and mitigate the financial costs of delivery. It started out in 2004 in 2 sub-districts, expanded significantly to 21 in 2007, and is now functioning in 46 out of 489 sub-districts in the country. Covering a population of roughly 10 million people, the program is financed with national and pooled donor funds. The program distributes vouchers to pregnant women which give them free access to: (1) three antenatal care (ANC) check-ups including blood and urine tests; (2) safe delivery care in a health facility or at home with a qualified provider; (3) emergency care for obstetric complications, including Cesarean sections (C-sections); (4) and one postnatal care (PNC) check-up within 6 weeks of delivery. In addition, women can also receive up to Taka 500 (US$7.29) for routine transport costs, Taka 500 for emergency transport, a gift box worth Taka 500, and a Taka 2000 (US$29.18) cash incentive after delivering with a qualified provider (exchange rate in 2009: US$ 1 = Taka 68.55). According to the program's design, women are only eligible for vouchers for their first and second births and only if they practice family planning in between the two. In nine sub-districts, vouchers are made available to all women meeting these criteria (so-called "universal" sub-districts) while in other sub-districts, additional means-testing (based on income, land, and asset ownership) is applied (so-called "means-testing sub-districts") (Hatt, Nguyen, & Sloan, 2010). Eligible women have to be permanent residents of the voucher sub-districts and their vouchers have to be stamped by the Union Council to be valid.

Government facilities with the capacity to provide emergency obstetric care (EOC) can participate in the voucher program; private facilities and providers with specific qualifications and access to operating theaters may also apply for accreditation, although very few of them currently participate in the program (Ahmed & Khan, 2011; Hatt et al., 2010). Total payment for the package of ANC, normal delivery, and PNC is up to Taka 750 (US$10.94). Additional reimbursements are made in case of complications or C-sections (Taka 2000 (US$29.18) and Taka 6000 (US$87.53), respectively). While private providers receive the full reimbursement, in the case of government facilities, half of the reimbursement goes to the facility's general "seed fund" used for improving quality of care while the remaining half is distributed among personnel involved in service provision. At the village level, community health workers receive an incentive of Taka 10 (US$0.15) for each eligible woman recruited (Hatt et al., 2010). Table 1 provides a summary of different incentives provided to the women and providers.

From April 2007 through August 2009, over 304,000 voucher booklets were distributed in 46 sub-districts, about 80% of the number of eligible women estimated based on population and fertility rate. Qualitative assessment conducted as part of this evaluation reveals the program's strong visibility among both providers and communities. Women receiving vouchers reported being told about the importance of safe delivery as well as the benefits of the program. They also reported having approval from family members for using formal care covered by the vouchers (Hatt et al., 2010). On the other hand, operational challenges include enforcing the criteria of poverty, parity, and family planning practice between the first and second birth, as well as challenges in timely reimbursement of the providers and women and assuring quality of care. The supply-side investments have not kept up with the increased demand, resulting in long waiting lines, poor provider attitudes, and medication stock-outs (Ahmed & Khan, 2011; Hatt et al., 2010). It is also reported that program administrators closely monitored the incidence of C-section, fearing the high level of reimbursement would drive up C-section excessively (Hatt et al., 2010).

Methods

Data

Data for this evaluation come from a household survey conducted in 2009 in 32 sub-districts, of which 16 have been implementing the pilot since mid-2007 and 16 have not had the program. The 16 intervention sub-districts (8 universal and 8 means-testing) were selected to the survey to represent all divisions of the country. Control sub-districts were matched with intervention sub-districts on geographical proximity (i.e. from the same district), number of beds in the sub-district hospital, and literacy rate. All control sub-districts remained without intervention for the whole period of interest (from mid-2007 to the date of the survey). The study has been approved by Abt Associates' Institutional Review Board.

The survey employed a multistage sampling design. First, in each sub-district, 3 unions reported by the sub-district health complex to have the largest number of deliveries during the reference period (6 months prior to the survey) were selected. In

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