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Assessing the population-level impact of vouchers on access to health facility delivery for women in Kenya

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ABSTRACT

Although available evidence indicates that vouchers improve service utilization among the target populations, we do not know whether increased utilization results from improved access (new clients who would not have used services without the voucher) or from shifting clients from non-accredited to contracted service providers. This paper examines whether the safe motherhood voucher program in Kenya is associated with improved access to health facility delivery using information on births within two years preceding the survey in voucher and comparison sites. Data were collected in 2010–2011 and in 2012 among 2933 and 3094 women aged 15–49 years reporting 962 and 1494 births within two years before the respective surveys. Analysis entails cross-tabulations and estimation of multilevel random-intercept logit models. The results show that the proportion of births occurring at home declined by more than 10 percentage points while the proportion of births delivered in health facilities increased by a similar margin over time in voucher sites. The increase in facility-based births occurred in both public and private health facilities. There was also a significant increase in the likelihood of facility-based delivery (odds ratios [OR]: 2.04; 95% confidence interval [CI]: 1.40–2.98 in the 2006 voucher arm; OR: 1.72; 95% CI: 1.22–2.43 in the 2010–2011 voucher arm) in voucher sites over time. In contrast, there were no significant changes in the likelihood of facility-based delivery in the comparison arm over time. These findings suggest that the voucher program contributed to improved access to institutional delivery by shifting births from home to health facilities. However, available evidence from qualitative data shows that some women who purchased the vouchers did not use them because of high transportation costs to accredited facilities. The implication is that substantial improvements in service uptake could be achieved if the program subsidized transportation costs as well.

Introduction

In many countries in sub-Saharan Africa, a high proportion of women of reproductive age (15–49 years) who have begun childbearing seek antenatal care services from skilled providers, but the proportion of births that occur in a health facility remains low (Abou-Zahr & Wardlaw, 2003; Wang, Alva, Wang, & Fort, 2011). In East Africa, for example, 92% of expectant women in Kenya make at least one antenatal care visit to a skilled provider while only 43% of the births take place in a health facility (Kenya National Bureau of Statistics [KNBS] and ICF Macro, 2010). A similar pattern is noted in Uganda where 95% of expectant women make at least one antenatal care visit to a skilled provider while only 57% of the births occur in a health facility (Uganda Bureau of Statistics and Macro International, 2012). The corresponding figures for Tanzania are 96% for skilled antenatal care and 50% for health facility delivery (National Bureau of Statistics and ICF Macro, 2011). Various factors contribute to the low levels of institutional delivery in the region including the costs associated with having a facility birth, distance and availability of transport to care, as well as negative community perceptions about the quality of care available in health facilities (Bowser & Hill, 2010; KNBS and ICF Macro, 2010; Kyomuhendo, 2003; Magadi, Zulu, & Brockerhoff, 2003; Stekelenburg, Kyanamina, Mukelabai, Wolffers, & van Roosmalen, 2004).

The use of vouchers is one strategy intended to address financial barriers to healthcare service utilization in low-income countries. In Kenya, for example, the Government has implemented the reproductive health vouchers program since 2006 in Kiambu, Kisumu, and Kitui districts, and in Korogocho and Viwandani informal settlements in Nairobi. The program was expanded to two more districts in Coast region (Kilifi and Kaloleni) in 2011. The vouchers subsidize comprehensive safe motherhood services (up to

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four antenatal care visits, delivery and complications, and postnatal care), long-term family planning methods (implants, intra-uterine contraceptive device [IUCD], and voluntary bilateral tubal ligation) and gender-based violence recovery services (GBVRS). The safe motherhood and family planning vouchers are made available at subsidized cost (equivalent US$2.50 and US$1.25 respectively) to poor women through distributors appointed by the voucher management agency. The distributors use a poverty grading tool consisting of eight items on household assets and amenities (housing structure, land ownership/monthly rent, source of water, sanitation/garbage disposal, and fuel for cooking), expenditure or income (daily income and average meals per day), and access to health services (herbalists/traditional birth attendants, public or private facilities) customized to each district to identify women in the community who are economically disadvantaged and therefore qualify to purchase a voucher. Women who score between eight (which is the minimum) and 16 points on the poverty grading tool qualify for the vouchers, which are then redeemed for services from accredited providers comprising public, private-for-profit, and private-not-for-profit institutions. The GBVRS voucher, on the other hand, is available at no fee at facilities contracted to provide the services. Detailed descriptions of the program and its design are in Abuya et al. (2012), Hagenmeyer et al. (2005), Janisch, Albrecht, Wolfschuetz, Kundu, and Klein (2010), PricewaterhouseCoopers (2008), and RH-OBA Technical Committee (2009).

Available evidence indicates that vouchers do improve service utilization among the target populations (Bellows, Bellows, & Warren, 2011; Bellows, Kyobutungi, Mutua, Warren, & Ezeh, 2013; Meuwissen, Gorter, & Knottnerus, 2006; Obare et al., 2013). However, we do not know if voucher programs are improving utilization by shifting clients from non-accredited to contracted facilities or if they are improving access to services for new clients who would not have used services had the voucher program not existed. Using two rounds of survey data, this paper examines whether the safe motherhood voucher program in Kenya is associated with improved access to health facility delivery by comparing changes in facility and home-based deliveries over time for births occurring within two years before the survey date in voucher and non-voucher sites. It is expected that if the program improved access to health facility delivery, there should be significant increases in the proportions and the likelihood of births occurring at a health facility over time accompanied with significant declines in home-based births in voucher sites. In contrast, there should be no significant changes in facility- and home-based births in non-voucher sites over time given the absence of the voucher program in these sites.

Conceptual considerations

Vouchers have the goals of not only reducing the financial barriers for the poor and underserved populations but also reducing inequality in service use, improving quality of care, achieving cost-effectiveness in service delivery, and improving health outcomes (Bhatia & Gorter, 2007; Cave, 2001; Gorter, Sandiford, Rojas, & Salvetto, 2003). Voucher schemes aim to achieve these goals through various mechanisms. For instance, the schemes subsidize services and put in place mechanisms for identifying beneficiaries to ensure that target populations are reached. The programs also employ explicit contractual arrangements with service providers which, in theory, require them to meet set minimum standards of care before being accredited. In addition, it is expected that accreditation of several providers in one location should stimulate competition for voucher clients with pressure to improve service quality. The programs further negotiate reimbursements with the service providers in order to maintain service costs which, together with the set minimum standards of care, should ensure cost-effectiveness in service delivery. Vouchers have, for instance, been used to improve uptake of various services in low-income settings including family planning, maternity care, treatment for sexually transmitted infections (STIs), and insecticide-treated bed nets for malaria prevention (Ahmed & Khan, 2011; Bellows, 2009; Brody, Bellows, Campbell, & Potts, 2013; Cernada & Chow, 1969; Mushi, Schellenberg, Mponda, & Lengeler, 2003).

In spite of the evidence showing positive impact of reproductive health voucher programs on the desired outcomes, the effectiveness of a given program may be affected by the way it is designed (Gauri & Vawda, 2004; Gorter et al., 2003). The design of a voucher program has, in turn, implications for effective targeting of beneficiaries as well as for evaluating its effectiveness. In terms of evaluation, for example, the Kenya voucher program did not involve random assignment of sites. Instead, the Government in collaboration with the German Development Bank (KfW) that funds a major part of the program budget identified the sites based on need and availability of health facilities (RH-OBA Technical Committee, 2009). Moreover, there was self-selection of facilities into the program. In each of the sites, health facilities that could provide services to voucher clients were approached to participate in the program and those that met the accreditation criteria were contracted as voucher service providers (VSPs). There is therefore a strong likelihood that health facilities that were contracted may be different from those that were not invited, did not choose, or were not accredited to participate in the program in ways that might not be determined *a priori*. The program has also been implemented in phases (Abuya et al., 2012; EPOS Health Management, 2011). During the first phase (2006–2008), a total of 54 health facilities in Kiambu, Kisumu, Kitui and Nairobi were contracted as VSPs. During the second phase (2008–2011), additional 39 health facilities were added to the program (25 facilities in the original sites and 14 facilities in new sites—Kilifi and Kaloleni districts).

The design of the Kenya voucher program has important implications for evaluating its impact on health outcomes at the population level. First, given that there was no random assignment of sites to the program, the evaluation of its impact can at best use a quasi-experimental design involving a comparison group and two rounds of data collection (Fisher, Foreit, Laing, Stoeckel, & Townsend, 2002). Second, the implementation of the program in phases—see Abuya et al. (2012) for the timeline of implementation of the program—could imply that its impact varies by the period of exposure. Besides the program design, we assume that the voucher program could potentially change over time access to health facility delivery both directly and indirectly. The direct effect could result from an increase over time in the proportion of women in the intervention sites who bought and used the safe motherhood voucher to deliver at a health facility due to intensified marketing by voucher distributors and constant or increasing voucher sales. The indirect effect could, on the other hand, be due to women who had never bought or used vouchers to deliver at a health facility being influenced to seek services by voucher users' positive experiences or the marketing efforts of the voucher distributors. Such influence should increase over time as more women buy the vouchers and share their experiences with their neighbors. The two (direct and indirect) scenarios should in turn contribute to a general shift from home to facility-based deliveries at the population level over time.

Study design

The study used a quasi-experimental design with two rounds of data collection in voucher (intervention) and non-voucher (comparison) sites. The choice of the design was informed by the fact