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Demand-Side Financing for Sexual and Reproductive Health Services in Low and Middle-Income Countries

A Review of the Evidence

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Abstract

Demand-side financing approaches have been introduced in a number of low and middle-income countries, with a particular emphasis on sexual and reproductive health. This paper aims to bring together the global evidence on demand-side financing mechanisms, their impact on the delivery of sexual and reproductive health services, and the conditions under which they have been effective. The paper begins with a discussion of modalities for demand-side financing. It then examines 13 existing schemes, including cash incentives, vouchers, and longer term social protection policies. Based on the available literature, it collates evidence of their impact on utilization of services, access for the poor, financial protection, quality of care, and health outcomes. Evidence on costs and cost-effectiveness are examined, along with analysis of funding and sustainability of policies. Finally, the paper discusses the preconditions for effectiveness of demand-side financing schemes and the strengths and weaknesses of different approaches. It also highlights the extent to which results for sexual and reproductive health services are likely to be generalizable to other types of health care.

It is clear that some of these policies can produce impressive results, if the preconditions for effectiveness outlined are met. However, relatively few demand-side financing schemes have benefited from robust evaluation. Investigation of the impact on financial protection, equity, and health outcomes has been limited. Most importantly, cost effectiveness and the relative cost effectiveness of demand-side financing in relation to other strategies for achieving similar goals have not been assessed.

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Demand-side financing for sexual and reproductive health services in low and middle-income countries: A review of the evidence

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Introduction

In recent years, demand side financing (DSF) mechanisms have been piloted and implemented in the health sector in several countries around the world. They have been attempted in a wide range of settings, from middle-income countries with relatively good governance and strong performance monitoring systems to low-income countries with fragile health systems. Questions remain, however, about their feasibility, effectiveness and sustainability in different contexts. In particular, there is little understanding about the pre-conditions, institutional as well as economic, for their success.

The term DSF is used in different ways in different studies (Gupta et al. 2010). We have defined DSF as actions which transfer resources to households on condition that they utilize specific services. There are three possible objectives for this:

1. The first is to change the kind of services which are consumed. Assuming the services are public health goods with external benefits or merit goods, increasing their consumption will increase allocative efficiency in the sector.
2. The second is to improve equity by focusing transfers on specific disadvantaged and under-utilizing groups, increasing their consumption of services.
3. Finally, there can be an objective of promoting choice between suppliers for services, and hence competition, with the aim of improving quality and technical efficiency.

The mechanisms through which DSF might work are two-fold – first, incentivizing behavior change (for consumers, but also indirectly for suppliers of services), and second, by increasing the affordability of specific services (as a result of cash transfers or near-cash transfers, such as vouchers).

Although the term is used in a variety of ways, it follows from this definition that DSF is distinct from the following (closely related) approaches:

- Unconditional cash transfers, which increase income levels of targeted groups and hence affordability of services, but without tying transfers to specific service use
- Fee exemption, which increased affordability of specific services, but using a supply-side approach (channeling resources through providers)
- Insurance approaches, which can provide protection against health care costs for specific groups, but are not conditional on specific behaviors
- Changes to provider payment systems, such as capitation, which may influence consumer choice but cover a wider package of services and use a supply-side payment mechanism

Some reviews exist of different DSF modalities, such as conditional cash transfers (Lagarde et al. 2007). This paper aims to bring together existing evidence on all DSF mechanisms in relation to sexual and reproductive health (SHR) in low and middle-income countries. SHR services have been a major focus for DSF, largely driven by concern about Millennium Development Goals targets for maternal health, which continues to pose a global challenge. The paper aims to synthesize evidence on the design and scale of existing schemes, their impact on the delivery of sexual and reproductive health services, and their cost

and sustainability. From this we draw policy lessons on different modalities and the conditions under which they have been effective, as well as identifying outstanding research gaps.

Research methods

This paper is compiled based on a literature review carried out in November-December 2010. Search terms included demand-side financing, or vouchers or cash transfers *and* reproductive health or sexual health or maternal health or deliveries or obstetric care or family planning or neonatal care or antenatal care or postnatal care or sexually transmitted infections. In addition, we ran individual searches for programs by country or name of program (when known). Google Scholar, PubMed, SSRN, World Bank Imagebank and other library resources were searched.

The results reflect some of the better documented schemes – they are not definitive, and there are more recent programs which are either still in pilot phase or not well documented. Much of the existing literature is 'grey' – agency reports, which are not yet published in peer-reviewed journals. We have focused on recent interventions relating to sexual and reproductive health. There are a number of studies on vouchers for insecticide-treated bed nets, for example; however, as the main health benefits relate to children, these have not been reported here. Similarly, studies of conditional cash transfer (CCTs) which focus, say on education, but have side-effects in terms of sexual behavior are not included. Older schemes, such as the vouchers for family planning in Korea and Taiwan, China in the 1960-70s, are not described here but can be found in Bellows et al. 2010.

Results

Modalities for DSF

There are three main types of DSF (Walford, 2008):

1. Cash transfers paid when a service is taken up. For these schemes, such as the Safe Delivery Incentive Programme in Nepal (now named Aama), the cash tends to be more limited and is focused on covering service and/or access costs[1].
2. Vouchers that can be used to cover all or part of the cost of specified health services, such as for Sexually Transmitted Infection (STI) treatment in Uganda. These near-cash benefits have a similar objective to the first mechanism but can be marketed in different ways (including social marketing and subsidized sale). They often emphasize choice of provider more than direct cash-for-services.
3. Longer term income support linked to take-up of education and health services. These schemes, such as the conditional cash transfers (CCTs) in Latin America, function more as social protection mechanisms. Although there is conditionality linked to specific service uptake, they have a more significant impact on overall household incomes and a wider poverty-alleviation objective.

[1] For the main references for the schemes which are analysed in depth, see Table 1. All schemes which have been documented in any detail are included in the tables.

Targeting

Although it is generally assumed that DSF are targeted to specific income groups, this is not necessarily the case – in Nepal, for example, cash incentives were offered to all women, although with varying sums based on location. In the Janani Suraksha Yojana (JSY) in India, a mix of geographical and income targeting is used. For larger social transfers, such as in Latin America, income targeting is more essential, because of their aim and scale. For voucher schemes, such as the STI treatment vouchers in Nicaragua, specific client profiles can be adopted – this scheme, for example, targeted sex workers and their partners.

Fully free or subsidized

In terms of benefits to households, the cost of services is usually fully covered by the schemes, but some vouchers are sold at a high subsidy, so that households make a small contribution. As well as reducing costs, DSF also aims to increase their predictability.

Demand- versus supply-side financing

Although the label of DSF implies that it is an alternative to supply-side (traditional) financing, this is not generally the case. In most schemes, ongoing public financing of services is unchanged, and the DSF component is supplementary or replaces user fees revenues.

Payment mechanisms

For vouchers and cash-for-services (as opposed to the broader social protection form), the payment mechanism for providers is output-based, with an agreed tariff for each type of service delivered in most cases (though one scheme reports using fee for service payments).

Complementary elements

In some cases, the DSF is complemented by payments to providers for performance and/or fee exemptions. In the Nepal Aama program, all three components of cash payments to women, incentive payments to health workers, and free delivery care are present. In other cases, the DSF may be complemented by insurance aimed at the poor which covers other services (this is the case in a number of Latin American countries). In the case of vouchers for goods, such as family planning, social marketing of products may run alongside the DSF activities.

Organizational context

A DSF requires autonomous fund management capacity, which is undertaken in many schemes by a purchasing body, third party organization or external donor. However, this is not necessary, and in some cases the funds are managed by the line ministry.

Provider types

The providers participating in a DSF scheme can be public, private and private not-for-profit, depending on their availability, capacity, quality and cost in any given context.

Scale and scope of DSF

There has been a proliferation of DSF in recent years, with many of the schemes focused on SHR. An overview of some of the schemes is given in Table 1.

The scale of implementation is very varied – many are national policies, with nationwide implementation, whilst others are more limited, and often supported by external partners. A brief description is given here of some of the main schemes.

Cash incentives

There are two major national cash incentive programs currently described in the literature, both encouraging facility-based deliveries, in India and Nepal, although other as-yet-undescribed programs are starting in a number of other countries, such as Zambia.

In India, the Janani Suraksha Yojana (JSY) program was launched in 2005 to increase institutional delivery among the poor and hence reduce maternal mortality[2]. It is a nationwide program with central funding, but focussed on the states with low institutional delivery rates. Local associations or health workers are encouraged to identify women and support their access to a full package of pregnancy care, using a birth micro-plan. Cash assistance is available to all women in low-performing states delivering in public institutions or accredited private institutions, and to women over 19 and below the poverty line in higher performing states. Scheduled caste and scheduled tribe women receive support whatever the area in which they live. The tariff of payments is higher for rural than urban areas, to allow for higher transport and lodging costs, and includes an incentive payment to health workers in low-peforming states. The cash is provided by the health institutions, generally at the time of the delivery. The service itself is supposed to be provided without charge in public facilities.

For deliveries in private facilities, women receive cash but are not entitled to free delivery services, nor are the health workers eligible for the incentive payments. In low performing states, there is no limitation on the number of births, while in high performing ones, the limit is two live births. Caesarians are carried out free of cost, but where no public facility is available, assistance is provided to fund private care. For poor women who choose to deliver at home, are over 19 and have had fewer than two live births, Rs 500 is made available to support their costs. Some financial support is also given to women who volunteer for sterilization immediately after delivering.

In Nepal, the Safe Delivery Incentive Programme (SDIP) was also launched in 2005. The package of financial benefits offered by the SDIP sought to change the behavior of both families and health workers. The level of cash incentive offered to women was set to reflect differences in geographical accessibility to health institutions across regions, covering between a third and a half of the transport cost. Initially, free care was available in districts with a low human development index score. In January 2009, this was extended to all areas of the country, with the new Aama program (which combined fee exemption with the existing cash payments).

Since then, a range of DSF has been developed in Nepal, including for ANC, PNC, and uterine prolapse, as well as for PMTCT, multi-drug resistant TB and HIV/AIDS[3]. At present, women receive $7 in transport payment for deliveries in lowland areas, $14 in the hills and $21 in the mountains. The same payments are made for women undergoing treatment for uterine prolapsed. For women who have completed four

[2] This information is taken from the Ministry of Health website.
http://mohfw.nic.in/dofw%20website/JSY_features_FAQ_Nov_2006.htm
[3] Scoping report for the National Health Sector Support Programme, Witter & Prasai, December 2010

or more ANC visits, an additional $2.2 is paid, and there is piloting of payments for those who complete three PNC visits ($4.2).

Vouchers

Voucher programs are typically implemented on a smaller scale – aimed at specific groups and specific areas, and in all cases with external funding and technical support. Services covered have included maternal health care (ANC, deliveries, PNC), family planning, treatment of STIs and counseling and treatment of gender-based violence. There are currently also two pilots being undertaken in Malawi and South Africa using vouchers for male circumcision (Boler and Harris, 2010).

KfW has recently been supporting the use of vouchers for family planning and delivery services in Kenya and Uganda. Vouchers are offered for sale at a highly subsidized rate (200 Shillings per delivery in Kenya – around $2.5). To identify members of the target group, a participatory poverty grading tool was developed for the four targeted Kenyan districts. The tool is district-specific and includes eight indicators (housing, access to medical facility, water source, rent amounts, sanitation, income levels, and number of meals taken per day). A score rate of between 8 and 16 points qualifies the person one to purchase the voucher. Providers are a mix of public, private and NGO-based.

Under the World Bank-funded Poverty Action Fund in China, poor households in Yunan province were given MCH vouchers to cover the user fees for specific categories of mother and child health care, including routine pre- and post-natal care, hospital delivery care for high-risk pregnant women; and first aid for severe obstetric complications. The vouchers were collected by facilities and sent to the provincial headquarters for reimbursement. The very poor and poor (14% of the population) were identified through village councils (Kelin, Kaining, & Songuan 2001). Further data on this program has not been identified however.

In Bangladesh, a voucher scheme for maternal health care was piloted by UNFPA and WHO. The vouchers were distributed to households below a certain income threshold, entitling them to free deliveries for their first and second pregnancies, subject to adopting family planning. This was later rolled out by the government in 2007 to 33 sub-districts (in some using targeted vouchers and in others universal ones). Under the Maternal Health Voucher Scheme, target women receive vouchers for three ANC check-ups, safe delivery at a facility or at home by skilled birth attendants, a postnatal check-up within 6 weeks of delivery and management of complications including caesarean section from designated providers. They also receive transportation costs for accessing the covered services.

Vouchers for maternal health have also been used in some districts of Cambodia, alongside a range of other measures such as health equity funds and contracting of services. There have also been pilot projects in Indonesia and Pakistan, and a longer-standing voucher scheme for private provision of delivery care in Gujurat state, India.

In Nicaragua, a voucher scheme has been implemented to increase the prevention and treatment of STIs in high-risk groups, such as sex workers(Sandiford, Gorter, & Salvetto 2002). A reproductive voucher scheme was also supported in Managua in 2000 (Meuwissen, 2006).

Social transfers

The social transfer approach has been developed extensively in Latin America. The focus of most of the programs has been on child health, educational attendance and, to a lesser extent, preventive care for mothers. Reproductive health is therefore only a small strand within the studies. In recent years, the model has been exported to Asia, with pilots established in Indonesia and the Philippines.

The best known example is the PROGRESA program (later Opportunidades) in Mexico, aimed at improving children's education, health and nutrition through conditional cash transfers. Low-income families were given a subsidy on condition they obtained a range of health services including nutrition monitoring and supplements for children and lactating mothers, growth monitoring for the under-fives, antennal care and child immunizations and attended various adult health promotion clinics (Gertler, 2000).

Honduras has operated a family allowance program – a scheme distributing freely exchangeable vouchers through primary schools or the program itself for antenatal (ANC) visits, perinatal checkups, and monthly well-child checkups (Morris, et al. 2004a). This is part of a wider social protection system, providing montly income, and is therefore included under social transfers, despite using a voucher mechanism.

Brazil has been operating the 'Bolsa Alimentacao', a scheme providing cash payments via magnetic debit cards to be used at automatic teller machines or lottery ticket sellers for antenatal care visits, monthly well-child checkups, immunization and growth monitoring services (Morris, et al. 2004b). Although ANC is included, the focus of this intervention is improving child health. Similarly, Bolivia has a cash transfer scheme, available to all households in 70 rural districts with a pregnant woman or young child, conditional on their use of preventive services (Morris & et al. 2004).

Evidence of impact

The quality of evidence varies across different projects and policies – some have been subject to fairly rigorous impact evaluations (e.g. the JSY in India and the SDIP in Nepal, as well as the Bangladesh and Nicaragua vouchers schemes, and the social transfers in Mexico and Honduras), while others rely on internal project data or administrative sources to assess impact. A summary of results is given below, but giving more weight to the more robust studies.

Utilization of services

Raising the utilization of specific services is a core aim of the DSF policies, and this output indicator is reported in all studies (see table 2), though with varying degrees of adjustment for other influencing factors. Unsurprisingly, given the policy mechanisms, all report increased utilization, although the degree of response is sometimes lower than expected, suggesting either low price elasticity of demand, poor implementation of policies and/or the presence of other (non-financial) barriers to service use.

Studies often fail to assess the degree to which increases reflect switching by users (e.g. from private to public services). Possible spillover effects on non-targeted groups are also often ignored.

Cash incentives

A process evaluation found that there was evidence to suggest that institutional deliveries had increased due to the JSY in India (Devadasan et al. 2008). However, it was apparent that there are some weaknesses in the scheme. Women were not aware of the scheme in some states. Changes in the benefits were promoting home deliveries, which conflicted with the original objective of encouraging institutional deliveries to reduce maternal and neonatal deaths. The authors also concluded that documentation procedures had evolved into a cumbersome process and had the potential to deny benefits to the needy.

An impact evaluation of the JSY found that implementation was highly variable by state—from less than 5% to 44% of women giving birth receiving cash payments from JSY (Lim et al. 2010). The poorest and least educated women did not always have the highest odds of receiving JSY payments. It found that the JSY had a significant effect on increasing antenatal care and in-facility births.

An evaluation report found that implementation of the SDIP in Nepal had been well below the target level of paying all eligible beneficiaries but was showing promising signs of improvement over time (Powell-Jackson et al. 2008). Women exposed to the SDIP were 24 percent more likely to use government health institutions, 5 percent less likely to deliver at home and 13 percent more likely to have a skilled attendant at delivery. However, there was no evidence that the SDIP increased use of life-saving obstetric surgery (caesarean sections).

Vouchers

All voucher schemes reported increased utilization – for example, an increase of 21% in institutional deliveries was recorded in the first year of implementation of the Chiranjeevi Yojana policy in Gujurat (CYG), India. In the Bangladesh voucher scheme, women living in areas with universal entitlement were found to be 26% more likely to deliver in a health facility, while those in targeted areas were 13% more likely (and no difference with control areas was found for caesarean sections).

For the STI vouchers in Uganda, there was a 15% increase in utilization of treatment services in the first two years, but skewed toward those living within 10 km of facilities. A more closely targeted voucher scheme aimed at sex workers and their partners and clients in Managua produced a more dramatic increase in treatment of the four most common STIs – up from 15% before the project to 92% afterwards. For sexual and reproductive health care vouchers distributed to adolescents in Managua, 34% of voucher recipients used these services, compared with 19% of non-receivers, leading to a higher use of modern contraceptives and condoms.

However, use of vouchers is sometimes low, especially for delivery care where access and cultural factors play an important role. A recent study of the combined effects of vouchers and health equity funds in some districts of Cambodia concluded that vouchers had increased facility utilization and had brought to facilities pregnant women who had previously delivered at home (Por et al. 2008). However,

uptake was disappointing – less than 50% of women who were given vouchers used them for delivery care.

Social transfers

The social transfers were focused on child health and education services and have had modest reported impact on use of ANC. In the case of the Mexico and Honduras policies, this was one of the conditional services on which receipt of funds depended, so an increase in utilization would certainly be expected, although the degree to which conditionality was monitored and enforced is reported to have varied across schemes (PAHO/WHO 2007). It is also noteworthy that despite its proven importance to mother and child health, none of the Latin American conditional cash transfer schemes included facility deliveries in their conditionality, perhaps because they were covered by health insurance programs for the poor.

No difference in antenatal care (ANC) utilization was found in rural areas in the first phase of PROGRESA, though for the second phase in urban areas, ANC increased by 6%. A study focussing on family planning (FP) uptake (Feldman et al. 2009) found that the 'treatment group' were more likely to use modern contraception, but had no difference in birth spacing and were no more likely to deliver in a health institution. In Honduras, an increase of 18% in ANC was recorded in a trial related to the policy (Morris et al. 2004).

Access to services for the poor

For many of the schemes which are targeted at poor households (identified through a variety of criteria and channels), analysis of the distribution of benefits or differential impact on access by different groups has not been conducted, perhaps on the assumption that they can be assumed to be pro-poor. Where analysis has been done, universal schemes have tended to benefit middle-income households disproportionately in the cash incentive schemes. Targeted schemes (where analysis is available) report under-coverage of their target group in some cases (e.g. the CY in Gujurat), while in others there is considerable 'leakage' (e.g. 40% o the top two quintiles receiving vouchers in the Honduras BMI, and 49% of women in the top two quintiles in Bangladesh receiving maternal health vouchers).

Cash incentives

For the JSY in India, implementation has varied considerably across states, but the national evaluation found that women of middle wealth and middle income were most likely to benefit from the scheme (Lim et al 2010). In rural areas, those living close to facilities were more likely to benefit. In relation to equity, the impact of the SDIP in Nepal on utilization of skilled birth attendance was also greatest among women of average wealth (middle wealth quintile) (Powell-Jackson, Neupane, Tiwari, Morrison, & Costello 2008). Women exposed to the SDIP and in the middle wealth quintile were 93 percent more likely to use government delivery care services and 66 percent more likely to use a skilled attendant at delivery. While the impact was slightly less among the poorest two-fifths of women, they were still 64 percent more likely to use a skilled attendant at delivery. In contrast, there was no evidence that the

SDIP had any impact on skilled birth attendance among the richest two-fifths of women. For these women, the SDIP simply encouraged them away from NGO or mission health institutions (where available) into government health institutions.

Inequality in the use of delivery care services provided by government health facilities means that the recipients of the cash incentive are disproportionately richer households. This is to be expected since there is no specific targeting of poorer households in the SDIP. Among women who were eligible and meant to receive the money, women with no education, unaware of the SDIP, living more than one hour from the health institution and Dalits were less likely to receive the cash.

Vouchers

Most studies of vouchers schemes do not analyze differential uptake. For the STI voucher scheme in Nicaragua, there was no analysis of coverage of the target group, but the poor and those with more STIs were reported to be more likely to use their vouchers. For the Bangladesh MHV scheme, it contributed to reduced inequity in facility deliveries, but 49% of women in the top two quintiles benefited, even in targeted areas. By contrast, the Gujarat vouchers were well targeted but failed to cover all of the poor.

Social transfers

Targeting of PROGRESA has been effective: 80% of its beneficiaries were estimated to be in the poorest 40% of the population (Gwatkin, Bhuiya, & Victora 2004), although later studies indicate that this may have dropped to 60%. It is very different in scale compared to many of the other DSF policies, however, covering 40% of rural households. Moreover, its targeting costs are substantial - estimated at 30% of total costs (Gertler 2000). For the Honduras BMI, it is reported to have reached 84% of its target group, but with 40% of beneficiaries in the top two quintiles.

Financial protection

Reproductive health costs can be significant for households. However, while DSF schemes aim to improve the affordability of specific services, very few evaluation studies examine the impact of the policy on household spending on reproductive services or health care in general.

Cash incentives

The SDIP evaluation (Powell-Jackson, Neupane, Tiwari, Morrison, & Costello 2008) is an exception: it concludes that the cash incentive protects a small proportion of households from catastrophic expenditure but fails to protect households from being forced into poverty that results from delivery care payments. In one district, Makwanpur, the cash incentive represented less than 20 percent of out-of-pocket expenditure on institutional delivery care, an inadequate amount to reduce the impoverishing effects of these health care payments. In India the JSY scheme covered less than half the costs of women. In addition, around a third of women reported not having received the incentives (Lim et al. 2010).

Vouchers

In general, vouchers are reported to have reduced user costs for services (unsurprisingly), but the significance of this in relation to household incomes or expenditure is generally not assessed. For the Bangladesh scheme, lower out-of-pocket payments by beneficiaries were recorded; however, only 60-

65% of women reported receiving their nutritional cash incentive (the largest component of the cash payments due to them) (Hatt et al. 2010).

Social transfers

Financial protection is not assessed directly for the social transfers, but the value of the overall transfer is known – around 20% of average household consumption in Mexico, but much lower in Honduras (4%). As services are free, the aim of these transfers is poverty alleviation (with conditionality), rather than financial protection against health care costs per se – at least in the Mexican policy. For Honduras, the lower level transfer might more appropriately be seen as compensation for the opportunity costs of accessing services.

Quality of care

A number of the studies – in India, Nepal and Bangladesh, for example - highlighted poor quality of care or supply side constraints (such as inadequate staffing and services), before as after the introduction of the DSF schemes (Table 3). Clearly, a DSF approach presupposes that services are available, accessible and able to offer a reasonable quality of care – otherwise higher utilization is likely to be ineffective or even positively dangerous. For that reason, a number of interventions were accompanied by supply-side measures to upgrade services. These included provider incentives, training, and upgrading of facilities in some cases.

In only a few cases were checks done to assess the technical quality of care. In the Uganda RH voucher scheme, the proportion of correct treatments was high, especially for the more common STIs. In the Nicaragua STI voucher program, simulated patients were used to assess quality of care, and this demonstrated some improvements following the start of the program (although some indicators dropped again after the program stopped).

Improvements in quality of care rely on DSF schemes either increasing consumer choice pressures (where there are alternative providers of reasonable quality available) or the schemes adding significant resources for providers. Where there is choice, accreditation mechanisms can also be used to ensure that only providers of a certain standard are reimbursed under the scheme. However, there often is no effective choice either because providers do not sign up to the scheme because the reimbursement level is insufficient (private providers are often not keen for this reason) or because there is a limited range of providers in a given area. The rapid review of the Bangladesh voucher scheme, for example, found there was little evidence that the mechanism encouraged competition due to the limited provision of health care services (Schmidt et al. 2010). It concluded that the voucher scheme provided substantial additional funding to facilities but remained complex to administer, requiring a parallel administrative mechanism which put an additional work burden on the health workers.

Health outcomes

Measuring health outcomes gains and attributing them to the DSF intervention is ambitious and many studies (e.g. Nepal, Kenya, Gujarat) do not attempt to do this (see Table 3). In other cases, positive trends are noted but cannot be attributed with confidence to the policy (Bangladesh and Indonesia). For some policies (e.g. Honduras), no health gains were found by evaluators.

For some of the policies, improved user knowledge is an important outcome – this is reported, for example, in the Nicaragua STI and SRH voucher programs. In the Nicaragua STI voucher scheme, declines

in rates of syphilis and gonorrhea are reported (Sandiford, Gorter et al., 2002), as is also the case for the Ugandan RH vouchers, where a 42% drop in syphilis prevalence was found in the first year (Bellows and Hamilton, 2009).

The JSY payment was associated with a reduction of 3.7 in perinatal deaths per 1,000 pregnancies and 2.3 neonatal deaths per 1,000 live births, but no significant impact on maternal mortality could be detected using that sample size (Lim et al. 2010).

In Mexico, cash transfers alongside information, micro-nutrient supplementation, weight monitoring etc brought about higher birth weights and improvements in child nutritional status, especially stunting.

Costs and cost effectiveness

Total costs

Total cost information is available for most (8 out of 13) of the policies which are studied in depth (see table 4). The different scales of the DSF policies is illustrated by comparing the size of their budgets, ranging from $60,000 per year to provide vouchers to a specific client group in one city (the Nicaragua STI scheme) to $3.6 billion for the PROGESA/Opportunidades program in Mexico, which enhances the income of an estimated 25% of the country's population.

Cost breakdown

Costs are hard to compare, given the different packages being offered. However, the proportion of spending which comprises overhead costs is of interest, as one measure of efficiency (although some overhead costs can be very productive – for example, investments in training of providers or communication to clients can be effective interventions in their own right). Not all studies report overhead costs and classifications vary, but the available information is nevertheless illuminating.

For the national JSY policy in India, implemented through the national health system, the overheads are limited to a total of 11%. For Nepal, the proportion is not reported. The proportion is likely to be relatively low; however, implementation difficulties may be a reflection of under-investment in strong administrative systems in both of these cases.

Two voucher schemes in neighboring countries – both in their start-up phases – nevertheless had overhead costs of 21% in one case (Kenya) and 72% in the other (Uganda). For voucher schemes, a complicated array of administrative structures is needed for voucher management, accreditation of providers, voucher distribution, setting reimbursement rates and claims processing. These are costly and require developed management capacity (in Kenya, an international management consultancy firm was hired to provide voucher management functions). It is not clear however why there is such a divergence between the two schemes.

A systematic review of conditional cash transfers found that the value of the transfers constituted a mere 4% of overall program expenditure for the Mexican scheme, 8% in Nicaragua, 16% in Columbia

and 28% in Honduras (Lagaarde, Haines and Palmer, 2007). Targeting, conditioning, and administrative costs are amongst the overhead categories.

Cost effectiveness

None of the studies examined the cost-effectiveness of their DSF interventions, with the exception of the Nicaraguan STI voucher scheme, which was found to be cost-effective, with a lower cost per STI patient effectively cured costs compared to before ($118 compared to the status quo of $200).

Funding and sustainability

There is a correlation between the level of development of a country and the funding of their DSF policies – by and large, low income countries have external funding, while for low and upper middle income countries, some or all of the funding comes from local sources. Some policies are quite ambitious: in Mexico, the overall Opportunidades policy absorbs 45% of the entire federal anti-poverty budget (Barber and Gertler, 2008), while in India, almost half of the federal budget for maternal health is now absorbed by the incentive scheme (Walford, 2004). As many of the policies are young, it is hard to assess at this stage their likelihood of being sustained, and indeed it is not yet clear how long they should be maintained in order to meet their objectives. There is a risk that after 2015 many of the policies focused on improving maternal health may lose support.

Discussion

Preconditions for effectiveness

A number of factors for success of these reproductive DSF policies are drawn out here, not necessarily in order of importance.

1. Correct identification of demand-side barriers to use

DSF approaches will work best when services are underutilized by the target group for reasons which are predominantly financial.

DSF works on the asumption that supply-side subsidies provided by government may not be effective at targeting those in most need. There is strong evidence that the poor have inferior access and make lower use of publicly allocated resources and services (Demery 2000, Institute of Policy Studies 2001, van Doorslaer, et al. 1993). This is for a variety of reasons, however, many of which are non-financial, including poor physical access to facilities, ignorance of treatment options, poor treatment by providers, and other constraints (cultural, gender, ethnic, caste etc.) preventing health seeking behaviour. Where non-financial barriers predominate, alternative policies may be more effective, or complementary actions to address these wider factors are likely to be necessary to make DSF schemes effective. Reproductive health is an area where social and cultural factors tend to play an important role in health seeking choices.

The assumption that improving the affordability of the service alone will raise demand does not always hold. In the case of Cambodia, the low utilization of delivery vouchers (which covered the full range of costs, including transport) raised the issue of cultural perceptions and other (non-price) barriers.

Interviews with non-users revealed that concerns about finding transport to facilities, about poor staff attitudes in facilities and about taking care of their household were responsible for women not using their vouchers (Por et al. 2010). For the Kenya voucher scheme, a range of marketing strategies had to be developed – what worked in rural was different for urban areas (Bellows et al. 2009). In Pakistan, in addition to distributing vouchers, the project invested in communication activities, meeting with women, and providing testimony from women who had used services to break down cultural barriers. Three to four visits were needed per household to develop trust, deal with doubts and sell the voucher (Bashir et al. 2009).

In addition, the way in which vouchers are distributed and to whom may affect their effectiveness, especially when there are different preferences, for example in a household. In a randomized trial of FP vouchers in Zambia, vouchers given to women individually had a significant effect in terms of uptake, adoption of FP and unwanted births avoided, whereas vouchers given to couples had no effect on unwanted births avoided, compared to the control group (Ashraf et al. 2010).

2. Adequate supply-side capacity and quality

Clearly, adequate services must be in place if DSF is to be effective in raising utilization and improving outcomes. In Nepal, for example, the roll-out of the SDIP was accompanied by considerable other investments in establishing and equipping birthing centers and improving training of staff, amongst other activities. An underutilized health system, functioning reasonably well, with competition between different suppliers, is the ideal context for introducing a DSF scheme.

The introduction of DSF therefore involves an assessment of the state of the existing services, and potentially supply-side investments in raising standards prior to inflating demand. This should focus on the accessibility of services, the availability of services (staffing, opening hours etc.), having adequate infrastructure (equipment, buildings, drugs etc.), appropriate processes (infection prevention etc.) and management (staff workload, supervision etc.

3. The right economic conditions

Many DSF schemes are externally funded and longer term funding will be needed to ensure their sustainability. In Nepal, for example, the SDIP was initially fully funded by DFID. Over time, the aim is to transfer the funding responsibility to the Government of Nepal, which will however be challenging. Countries which have sustained large-scale and enduring DSF policies, such as Mexico, have tended to be middle-income countries, which meet the preconditions of having reasonable state capacity to target and manage policies, the ability to finance more far-reaching transfers, a smaller proportion of their population living in poverty, and a reasonable network and standard of services (Cechini, 2009).

4. Appropriate design of package

Services which are unpredictable, in terms of demand or need, are not easily accommodated in a DSF, Preventive care is favoured not only because it averts future costs for individuals and the public purse, but also because coverage goals are clear and greater consumption is generally good. For most reproductive health interventions, the identification of the target group is relatively easy, and their need for services predictable. One area for careful monitoring however is emergency obstetric care, which can be inflated or provided to the wrong group (women without clinical indications) if there is a financial incentive for providers.

Another factor is the cost of the goods and services. If the cost is very low (for example, the price of purchasing condoms as a family planning method), then a relatively expensive delivery mechanism, such

as vouchers, is unlikely to be justified. However, offering access to longer terms, less affordable FP methods may be worthwhile.

Another important decision is whether to include non-facility costs (for vouchers and cash linked to services). Where travel costs are very high (as was the case in Nepal) and where schemes target the poorest, these costs should ideally be included.

5. The right size of transfers

The size of the subsidy has to be adequate to motivate behaviour change (Chapman, 2006). On the other hand, payments which are excessive are wasteful and may be benefiting those who would in any case have used services. The level of subsidy can be established iteratively through pilot projects, if these are carefully monitored.

6. Motivated and incentivized suppliers

If health workers are underpaid and under-motivated, then DSF schemes will exacerbate these problems through increasing their clinical and administrative workload (and in some cases undermining the payments which they previously received from clients). In such contexts, schemes have been most effective when combined with complementary measures to address supplier incentives. In Cambodia, for example, areas with performance-based contracting and provider incentive payments performed better than those with demand side measures (vouchers and health equity funds) alone (although the incremental cost-effectiveness of each component was not assessed and would be interesting to know). However, provider incentives should be carefully designed to avoid distortions in services provided (e.g. promoting FP services which are lucrative rather than respecting client choices).

7. Strong political leadership

Given the complexity and cost of many DSF schemes, ultimately there has to be considerable political commitment to sustain them. Some of the studies highlight the importance of an influential local champion (e.g. Bellows & Hamilton, 2009; Ensor, Clapham, & Prasai 2008).

8. Institutional capacity

The managerial complexity of some of the schemes is evident. Systems for identifying beneficiaries, communicating schemes, channeling funds, and monitoring must be strong. If funds are not available on time, the credibility of the whole project is undermined for beneficiaries. Considerable technical support and iterative development of systems is needed. Where this develops wider systems capacity, it may have side-benefits beyond the project. However, where external agencies manage the project, the systems benefits are less clear.

Handling of cash also involves financial risks which have to be managed. In Nepal and India, cash was managed by health staff and there is evidence of some degree of misuse. One rapid review of the SDIP, for example, found that 8% of incentive payments to health workers for institutional deliveries were fraudulent (CREHPA, 2008). For payments to staff conducting home deliveries (which are much harder to verify), the rate was much higher.

Targeting of the poor is also a demanding activity, requiring both resources and institutional capacity, although in states where there is already an established poverty identification system (such as the BPL cards in India), then targeted schemes are more feasible and potentially efficient.

9. Simple payment systems

Most cash-for-service and voucher schemes use fixed payments to pay providers per episode. In the case of the Uganda STI vouchers, however, payments were made per test and procedure, with the result that vetting claims was very complex and back-logs developed in settling them.

10. Good collection and use of evidence

Last but not least, those policies which have been accompanied by strong information systems and regular, high-quality evaluations to inform their development are more likely to have been successful and sustained. The most notable example is PROGRESA, which has been extensively documented and subject to annual evaluations since its start. The evidence of impact has been used to sustain government investment. In the case of Nepal, findings of the implementation evaluation were fed back into improved guidelines and stronger financial systems early on in the development of the SDIP (Powell-Jackson et al. 2007).

Strength and weakness of different approaches

Beyond identifying general pre-conditions for success, are there lessons on the types of roles for which these different mechanisms can best be used? All financing mechanisms' effectiveness is dependent on purpose, context, and implementation. However, some general strengths and weaknesses are drawn out in Table 5.

Many of the differences noted derive from the scale of implementation: the cash for services policies which are currently well documented are all operated at national scale, for example, while voucher programs tend to be small-scale and receive more focused external technical inputs. A large-scale voucher program – Bangladesh is the key example here – may have more in common with cash for services policies in neighboring India and Nepal than with small-scale voucher programs managed in a limited area by an international NGO or contracted company.

Similarly, the nature of the services themselves is important. Family planning and STI services have very clear outcome indicators and are therefore easy to monitor and evaluate. For delivery care, quality of care and health outcomes are much harder to assess. Having a facility delivery does not in itself indicate how health risks have been affected; there are no gold standards for quality of care measures; and assessing impact on mortality ratios requires large-scale, costly surveys. These will affect how schemes are implemented and how easy it is to provide robust evidence for management and evaluation purposes. These reflections indicate the extent to which the findings in this review are likely to apply to other (non-SRH) services – those with clearly defined services and easily measurable outcomes are more likely to respond well to DSF approaches.

Lessons on implementation

It is beyond the scope of this paper to present detailed lessons on implementation of DSF schemes. Most are complex, and at minimum, require attention to the following additional areas:

Communication and marketing – Communication strategies have to reflect the nature of the products and clients. In the Uganda safe motherhood voucher scheme, for example, a combination of community-based sensitization, use of radio, and incentives for distributors was considered effective in

increasing uptake. In a Pakistan family planning voucher program, it was important to use trusted community members to address widely held misconceptions about the products (Boler and Harris, 2010).

Quality assurance – this will involve a range of activities, including training, accreditation of providers, internal and external audits, and plan to reinforcing referral chain.

Distribution strategies – particularly for vouchers, the decision about how to distribute is critical, including a choice of community-based agents and/or through retail outlets such as pharmacies.

Detection and prevention of fraud – fraud can occur at many different stages and therefore requires a range of preventive strategies. For example, for a voucher scheme, fraud can take the form of the creation of fake vouchers or collusion between distributors and clients during distribution, between clients and providers during use, and/or between providers and claims processing agents during payment of vouchers. Careful systems for validating claims (including use of text messaging to contact beneficiaries directly) and zero tolerance for fraud are two important strategies to contain fraud (Boler and Harris, 2010).

Conclusions and outstanding questions

The paper shows the variety of DSF schemes in operation, and the variety of outcomes that they can produce, depending on their goals, design, context, funding and implementation. It is not easy to generalize about such wide-ranging policies, but it is clear that some can produce impressive results, in terms of increased utilization, if the preconditions outlined above are met.

There are however a number of outstanding questions which research to date has not adequately addressed. Most importantly, the relative cost effectiveness of DSF in relation to other strategies for achieving similar goals not been assessed. That paying people to use services increases service use is not in itself surprising – of more interest is whether it does so more effectively and at lower cost than alternatives (some of these issues are explored in Table 6). This comparative cost effectiveness analysis, allowing for different contextual features, is still outstanding, in addition to the other gaps highlighted in the synthesis - for example, a need for more focus on equity analysis, and analysis of DSF schemes' impact on financial protection, quality of care, and health outcomes. Where increased utilization is measured, there is little understanding of its determinants. Despite the rapid increase in the popularity of DSF, rigorous evaluations of DSF remain rare in low and middle income countries.

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Table 1 Summary description of selected DSF schemes for reproductive health

	Name, place and date	Services covered	Target group	Mechanism	Evaluation or study
	Cash for services				
1	Janani Suraksha Yojana, India, 2005 - ongoing	In-facility delivery (also health workers incentivized to ensure 3 ante-natal care visits; attended or in-facility delivery; one postnatal check up; child immunization; promoting breastfeeding). Before that, there was the National Maternity Benefit Scheme (NMBS) (2001–5) for nutritional support for pregnant women. It gave a one-time cash payment per pregnancy of Rs. 500 to below-poverty line (BPL) pregnant women, 19 years of age or older, for up to two pregnancies that resulted in live births.	Households below poverty line, or of scheduled (low) cast or tribe + entire population in 10 high focus states with lowest in-facility births: Uttar Pradesh, Uttaranchal, Bihar, Jharkhand, Madhya Pradesh, Chhattisgarh, Assam, Rajasthan, Orissa, and Jammu and Kashmir	For first two live births, after delivery in a government or accredited private health facility, eligible women would receive 600 Indian rupees (US$13·3) in urban areas and 700 rupees ($15·6) in rural areas. The cash incentive is higher in the 10 low in-facility birth states: 1000 rupees ($22·2) in urban areas and 1400 rupees ($31·1) in rural areas. Also, 500 ($ 11) rupees for home delivery for women below poverty line. In case of CS, the woman receives 1,500 rupees. ASHAs (accredited social health activists) also paid 200 rupees ($4·4) in urban areas and 600 rupees ($13·3) in rural areas per in-facility delivery assisted by them in high-focus states. No payments to facility staff. There are some variations in implementation across states, however. Initially the scheme was focussed on the public sector but private facilities being included. Paid up to 1,500 rupees per delivery.	Lim et al. 2010; Dagur et al 2010; V Paul 2010
2	Safe Delivery Incentive Program, Nepal , 2005 - ongoing	In facility delivery . (Also has P4P elements and since 2009 free delivery care has been added)	Universal entitlement, but amounts vary according to ecological zones (higher for mountains and hills than lowland areas). Women in the low-HDI districts received free deliveries originally - this is now extended to all. Originally restricted to women with few than two living children or an obstetric complication (as diagnosed by the health provider) but this restriction now lifted	Conditional cash transfers, on delivery, in public facilities originally but now extended to some private and private not-for-profit facilities. 500 NRS ($7)paid to women in plains districts; 1,000 NRS ($14) in hill districts; 1,500 NRS ($21) in mountain districts. Part of wider Safe Motherhood Programme, with supply-side investments	Hanson & Powell-Jackson 2010 (Ensor et al 2009 for funding)
3	Conditional In-kind transfers, Rwanda, 2010	in-kind benefits linked to ANC in first 4 months of pregnancy, institutional delivery, and PNC in first 7 days by mother-child pairs	Piloted in 2010 in 30 sectors - one per district of the country	On completion of each stage, the mother receives a package including a bar of soap, water purification products, and a choice of umbrella, adult clothing, or a well-baby package	Ngabo & Humuza 2010 (news brief) - www.rbfhealth.org

	Name, place and date	Services covered	Target group	Mechanism	Evaluation or study
	Vouchers				
4	Chiranjeevi Yojana, Gujurat, India, 2005 onwards	One prenatal consultation, sonography, transport, delivery care, any complications. Women receive Rs 200 for transport. ANC and PNC not included	Below poverty line women in remote areas. Piloted in five districts of the state. 10 million pop, of which 43% estimated BPL. BPL card used as evidence of entitlement. Expanded state-wide from 2007.	The state contracted with private providers to provide delivery care cash-free for identified women.	Bhat et al. 2006 & 2009; Mavalankar, 2009
5	Output-based aid programme, Kenya, 2005-8	Safe motherhood, family planning, gender violence recovery. The SM vouchers covers 4 ANC visits, a delivery visit, and postnatal care (PNC) within 6 weeks after delivery at any contracted facility. The FP voucher entitles the user to any of several modern contraceptive methods: bilateral tubal ligation (BTL), vasectomy, hormone-based implants, and IUCDs. The GBV voucher entitles the user to medical examination, treatment, and counseling	Poor households in 5 pilot sites (3 rural, two urban slums) in economically disadvantaged parts of Kenya. Total population 3 million. Targeting tools developed to identify suitable households. Rural districts of Kisumu, Kitui, and Kiambu, as well as the Nairobi informal settlements of Viwandani and Korogocho.	Vouchers, sold at highly subsidized price. Cost $2 per SM voucher and $1.25 per FP voucher. Redeemed at public and private facilities	Project site: http://www.output-based-aid.net/e102/. Bellows et al 2009
6	Reproductive Health Vouchers, Uganda: STI vouchers beginning 2006 and SM vouchers beginning 2008	STI Voucher covers treatment but not transport. SM Voucher covers 3 ANC visits, safe delivery, 1 PNC visit. ANC package includes malaria prophylaxis, iron supplements for anemia, HIV screening and services, and general monitoring of the health of mother and fetus.	SM and STI voucher program beginning 2008 in 22 districts in western Uganda (4-5 million population). STI vouchers for everyone, SM vouchers for poor women. STI patients encouraged to use half the vouchers and share the other half with their sexual partners. Marketed by radio initially	Vouchers, at subsidized rates: Ush 3000 ($1.3) for SM voucher and same price for pair of vouchers for STI. Redeemed only at private facilities	Bellows and Hamilton 2009; Kilonzo et al. 2010; Marie Stopes 2010
7	Vouchers for poor pregnant women, Cambodia , from 2007	3 antenatal care visits, delivery and 2 postnatal care visit, as well as transportation costs for 5 round trips between her home and the health centre, and for referrals from the health centre to the referral hospital in case of complications.	Poor pregnant women in the catchment area of rural health centres in three districts	Vouchers for primary care and access costs at public health centres. Referral costs covered by existing Health Equity Funds (HEF). In the same areas, performance-based contracting and staff incentives are also in place to provide supply-side incentives	Ir Por et al 2010

	Name, place and date	Services covered	Target group	Mechanism	Evaluation or study
	Vouchers				
8	Maternal Health Voucher Scheme, Bangladesh, 2007	3 antenatal care visits, safe delivery, 1 post natal visit, transport upto Taka 500 for first two pregnancies	Poor population in 33 sub-districts covering 10.7 million people (7% of population); 9 sub-districts applied universally and remaining 24 were targeted at poor women with first or second pregnancy. Identified by Family Welfare Assistants, who distribute booklets	Vouchers. Beneficiary entitlement includes free antenatal, delivery and postnatal care, plus Tk 100 per ANC visit; Tk 2000 for safe delivery; Tk 100 for PNC visit; Tk 100 for transport for institutional delivery; also fund for referral and gift box for baby. Supposed to receive at time of service, but often have to collect later. Providers also get incentive (half of funds paid to facilities)	Olivier-Schmidt et al. 2010; Ahmed & Khan 2010; Koelmoos et al. 2008; Hatt et al. 2010
9	Indonesia midwife vouchers, Pemalang province, Java. 1998-2004	Pre-paid vouchers(booklet of 29) distributed for six services, including delivery, referral to hospital if needed, ANC, PNC, infant care, FP, and family health care services	Poor pregnant women in project villages. Identificationdone by the project midwives	Funded by World Bank Safe Motherhood project, and accompanying performance-based contracts for village midwives (the aim was to encourage them to seek out low income women). Fixed amounts paid per voucher.	Tan et al. 2005
10	Sehat Voucher Scheme (pilot), Pakistan, 2008-9 - administered through the Greenstar program/Goodlife service providers	3 ANC visits, vaginal delivery, 1 PNC visit, FP counselling	2000 pregnant women in low income urban Dera Gazi Khan district: women who have previously delivered at home, monthly income of US$ 42.68 on average, and have never saved money for delivery (indicating lack of information about the importance of ANC visits and institutional delivery).	Vouchers at highly subsized rates (pay Rs. 100 or US$ 1.21 for US$ 50 worth of vouchers); covers transport as well as services. Transport component (covering all services) is worth around $6. Have to access Greenstar services. Also has component of incentive payments for providers	Bashir et al. 2009
11	STI Vouchers, Nicaragua, 1995 onwards	Free STI testing and treatment, including: a medical consultation; screening tests for syphilis, and trichomoniasis, candidiasis, gardenerella & cervical cancer (Papanicolaou smear) in the case of female redeemers; diagnosis of other STIs through physical examination; health education; provision of information booklet, especially designed for sex workers, and 24 condoms during each visit. Presumptive treatment with a single-dose of 1 gram of azithromycin is offered.	2,000 vouchers distributed to HIV vulnerable populations in Managua (sex workers, and later their partners and client, transvestites and adolescent glue-sniffers). Distributed though NGO in 5-6 main prostitution centres of city	Vouchers distributed every 6 months; expire after 2.5 months; if test positive for STI or are pregnant, given voucher to return for additional consultation. Services at ten contracted centres, which are assessed for quality before and during implementation. Initially public, private and PNFP, but public centres later dropped	Sandiford et al 2002; Borghi et al 2005
12	SRH Vouchers, Nicaragua, 2000	SRH: 1 consultation and 1 follow-up visit for advice/counselling, contraception, treatment of STIs or reproductive tract infections (RTIs), pregnancy testing and/or antenatal care	Adolescent males and females in disadvantaged areas of Managua (ages 12-20)	Vouchers; transferable; valid for 3 months. Providers included public, private and PNFP. Providers given training, treatment protocols and financial incentives.	Meuwissen et al. 2006a/2006b/2006c/2006d/2006e

Table 2 Impact on utilization, equity and financial protection of selected DSF schemes

	Programme	Impact on utilization of services	Access to services for poor/equity analysis	Financial protection
	Cash linked to specific service use			
1	JSY, India	In-facility births have increased at the national level. Slight increase in ante-natal care and shift from home based attended delivery to in-facility delivery. Of the 10 low in-facility birth states, some had low uptake such as Bihar (15%) and Uttar Pradesh (7%), while others such as Orissa and Madhya Pradesh had high uptake (42% and 44%). District level variations are significant: from under 5% in 141 districts to more than or equal to 30% in 128 districts.	Receipt of financial assistance from JSY was generally higher in the middle bands of wealth in high focus (low in facility birth) states and in those with middle levels of education - the poorest and least educated did not necessarily benefit the most as per program objectives. The highest rates of JSY payments were to women living in rural areas, but close to a health facility. Except in the northeast states, women from the socially disadvantaged castes were significantly more likely than were the other groups to receive JSY payments	Hot assessed, however there is evidence that not all eligible women received payments. An assessment of five high-focus states in India indicated that 7–33% of women who delivered in facilities reported not receiving any money after delivery
2	SDIP, Nepal	Women in the treated group were 4.3 percentage points (26 percent) more likely to deliver in a public health facility, 4.2 percentage points (17 percent) more likely to deliver with a skilled birth attendant and 1.2 percentage points (36 percent) more likely to have a caesarean section. The impact varies depending on the size of the financial package relative to the cost of care and the quality of care provided in hospitals and primary health care centres.	The richer households benefited more as had higher utilisation rates. Poorer women also less likely to be informed. However, in terms of increased likelihood of having a supervised delivery, the main impact was on the middle quintile (66% more likely if exposed to the SDIP) and the lower two quintiles (64% more likely if exposed to the SDIP)	20% of facility costs covered on average, so households are not effectively protected. Out-of-pocket payments for institutional delivery care disrupt living standards and force some households into poverty. 12.8 percent of households incurred expenditures for delivery care that exceeded 10 percent of total consumption (the standard threshold for catastrophic expenditure). Out-of-pocket payments also pushed an additional 1.9 percent of households into extreme poverty, equivalent to a 25 percent increase in poverty.
	Vouchers			
3	Chiranjeevi Yojana, Gujurat, India, 2005 onwards	In first year, institutional deliveries in the five districts increased from 38 per cent to 59 per cent. 4.7% of deliveries in the group were caesareans. A later report states that public sector insitutional deliveries have been declining	A household-level survey of beneficiaries (n=262) and non-users (n=394) indicated that the scheme is well-targeted to the poor (only 6% of beneficiaries were non-poor) but many poor people do not use the services.	The beneficiaries saved more than Rs 3,000 (US$ 75) in delivery-related expenses and were generally satisfied with the scheme, although 5% reported not receiving transport funds and 4% reported being asked for money by staff. An average of Rs 654 was spend per person on additional medicines.
4	OBA, Kenya	Significant increase in uptake of safe motherhood services; limited increase in the uptake of FP services (possibly driven by socio-cultural/other factors)	Where ability to pay is low, Marie Stopes pays for the vouchers. In rural areas, 95% of vouchers purchased by MSK (the service provider)	Households benefit from high subsidies (e.g. 200 KES for delivery package, compared to 600-1,500 KES for delivery in public sector (plus additional costs for drugs, ANC, PNC)

	Programme	Impact on utilization of services	Access to services for poor/equity analysis	Financial protection
5	RH Vouchers, Uganda	Utilization of STI treatment services increased by 15% (not significant) during 2006-2008 (the first STI program period). More than 40% of redeemers men. Significant increase (48%) in use of STI services for those living within 10 km of facility	For STIs, not targeted at the poor -available to all. No equity analysis of uptake	80% savings offered on normal service costs for STI
6	Vouchers for poor pregnant women, Cambodia , 2007	Facility deliveries increased overall from 16.3% in 2006 to 24.9% in 2007. This includes voucher and HEF recipients, as well as self-paid deliveries. For voucher recipients, utilization of facilities increased from 2.4% in 2006 to 7% in 2008. However, there is a large difference between vouchers distributed and vouchers utilized. Highest utilization of vouchers was for initial ANC visits: of the 1,093 poor pregnant women who received vouchers in 2007, 855 (78.2%) used their vouchers for ANC1, 665 (60.8%) for ANC2, 501 (45.8%) for ANC3 and 487 (44.6%) for	No analysis, but authors mention targeting problems.	No information
7	Maternal Health Voucher Scheme, Bangladesh, 2007	Institutional delivery increased 2.5 times faster than other areas in DSF areas, especially after Jan 2008 (corresponding to an increase in voucher uptake). 92% of pregnant women in voucher areas had at least one ANC visit compared to 76% in control areas; 58% delivered with qualified provider compared to 27% controls; 44% facility delivery compared to 19% controls; 31% PNC visit compared to 20% controls. In multivariate analysis, a woman living in a universal area has a probability of delivering in a health facility that is 26.2 percentage points higher than that by a woman living in a non-DSF area. The corresponding difference for the means-tested area is 12.9 percentage points. No difference for caesareans	Poorer women in the universal areas were somewhat more likely to receive a voucher than the richest women. However, the differences between the quintiles are not significant. In the means-tested site, as intended, significantly more women in the bottom three quintiles (78%) received vouchers than did women in the richest quintile (49%). Still, the fact that nearly half of the women in the richest quintile obtained a voucher in the means-tested area raises a question about the effectiveness of poverty-related targeting. In control areas, women from the top 80% of the wealth distribution were more than 3 times more likely to deliver with a qualified provider than women from the poorest 20%. In universal areas, this ratio was 1.18, while in means-tested areas the ratio was 0.91.	Only 60-65% of women reporting receiving cash for nutritional food and less for transport incentives. Out-of-pocket expenditures on delivery were significantly lower in universal voucher districts (945 Taka) and among means-tested voucher users (896) compared to controls (1480), however
8	Indonesia midwife vouchers, Pemalang province, Java. 1998-2004	Utilisation of midwife services increased, though attribution is hard as the voucher scheme coincided with contracting of midwives and other changes. Women reported more confidence in the midwife services	Poor women were using midwife services at the end of the project, compared to start where few did. No assessment of accuracy of voucher targeting made however	Not assessed

	Programme	Impact on utilization of services	Access to services for poor/equity analysis	Financial protection
9	Sehat Voucher Scheme (pilot), Pakistan, 2008	Over a period of 12 months: 1,999 voucher booklets distributed; 20% increase in ANC visits; 68% delivered at Good life facility; 79% utilized FP counselling; women beneficiaries also brought 3-4 pregnant women to health facilities for care from their families or neighborhood.	Not assessed	Not assessed
10	STI Vouchers, Nicaragua, 1995 onwards	Since 1995, over 15,000 vouchers distributed, over 6,000 consultations provided, and numerous cases of STI treated, with more than 40% redemption rate for vouchers. Successful in reaching high-risk groups, providing high quality service and treating 92% of the four most frequent STIs vs. only 15% in the absence of vouchers.	Redemption of vouchers higher amongst poorest and amongst those with highest initial rates of STI	The average cost per consultation in the absence of vouchers was estimated at US$12; the cost per STI cured at US$200. The total direct cost (including transport, snacks and limited medical expenses) to voucher redeemers was US$4.46 (SD 5.3). Opportunity cost of time was US$ 2.64
11	SRH Vouchers, Nicaragua, 2000	3,067 girls redeemed 3301 vouchers, with 6% using more than 1 voucher. 40% came back for further consultation. 34% of vouchers were used for contraceptives, 31% for complaints related to an STI or RTI, 28% for advice/counselling, 28% for antenatal check-ups, 18% for pregnancy testing. In 10% of the consultations, vouchers were used only for advice/counselling. 20% redemption rate by girls - Voucher receivers had a significantly higher use of SRHC compared with nonreceivers, 34% v. 19%; At schools, sexually active voucher receivers had a significantly higher use of modern contraceptives than nonreceivers, 48% versus 33%; also higher condom use during last sexual contact among receivers vs. non-receivers in neighborhoods	Not assessed	Not assessed
	Long term cash			
12	Family Allowance Program (PRAF)'s BMI Voucher, Honduras, 1990	In trial, antenatal care increased by 18%; well-child visits/preventative care by 20%	BMI reached 84% of its target group, according to evaluation of first phase, but 40% of beneficiaries in top two quintiles	Not assessed; however overall transfers estimated at 4% of average household consumption
13	Opportunidades, Mexico, 1997	No increase in ANC in rural areas. 6.12% point increase from base of 56% in urban areas (second phase). Small but significant increase in use of modern contraceptives by treatment group vs. control; no difference in birth spacing; Beneficiaries received 12.2% additional prenatal procedures. However no difference in likelihood of facility delivery	Low leakage - 80% of benefits go to 40% poorest families (although later studies found reduction - 60% of beneficiaries in bottom two quintiles). 8% poverty reduction in intervention areas	Not assessed; however overall transfers estimated at 20% of average household consumption

Table 3 Impact on quality of care and health outcomes of selected DSF schemes

	Programme	Quality of care	Health outcomes
	Cash linked to specific service use		
1	JSY, India	Deliveries may be done by unskilled support staff vs. skilled nurses or doctors. Best practices, such as partogram, neonatal resuscitation, and kangaroo care, are not followed. The system of referral to a higher level for emergencies is inadequate. Most mothers and babies are discharged within hours after delivery because the hospitals lack amenities, and families want to return home having got the cash incentive. As a result, there is inadequate time for newborn-care counselling, stabilisation of the post-partum mother, and detection of danger signs in the mother and the infant.	Unable to detect a signifcant impact of JSY on maternal mortality. Difference-in-difference analysis does not show significant effect on perinatal and neo-natal mortality. However, JSY payment was associated with a reduction of about four perinatal deaths per 1,000 pregnancies in the matching and with-versus-without analyses, and a reduction of about two neonatal deaths per 1,000 livebirths.
2	SDIP, Nepal	No assessment made of impact on quality of care, but the limits to service provision (after as before) are highlighted, particularly at lower level facilities. (Shortages of staff and equpment limit the services, especially for emergency obstetric care.)	Not assessed, but limited impact expected given limited increase in emergency obstetric care and quality of care constraints
	Vouchers		
3	Chiranjeevi Yojana, Gujurat, India, 2005 onwards	Not assessed, but authors note that PNC is not included in the package	Not assessed
4	Safe Motherhood Vouchers, Kenya,	Not assessed	Not assessed
5	RH Vouchers, Uganda	The proportion of diagnoses correctly treated ranged from 79% for balanitis to 98% for gonorrea.	Knowledge of STI symptoms increased 18 percent between the first and second years (adjusted odds ratio, aOR=1.43; 95 percent CI=1.22-1.68). The prevalence of syphilis, as measured by the VDRL test, decreased 42 percent between the two surveys (aOR=0.63;95 percent CI=0.48-0.79). There was a greater reduction in the prevalence of syphilis among respondents who lived within 10 kilometers of a contracted facility (57% decrease versus 20% for those further away)

	Programme	Quality of care	Health outcomes
6	Vouchers for poor pregnant women, Cambodia , 2007	Not assessed	Not assessed
7	Maternal Health Voucher Scheme, Bangladesh, 2007	General satisfaction with services by beneficiaries. However, provider quality standards not always enforced. Also users not well informed about scheme. Choice of providers was limited. Also, the voucher only applies to the area of residence while it is expected that a woman will go to stay with her parents for delivery which may be in a different (non-voucher) area. Delay in releasing funds to reimburse vouchers and service providers created problems in the initial stages of the program. Providers report being over-burdened because of increase in demand. Inadequate service providers and facilities to address increased demand for ANC services; shortage of obs/Gynaecologists and anesthesiologists at facilities; variation in training on DSF across regions	The incidence of complicated deliveries, stillbirths, and newborn deaths was lower in voucher UHCs than in control UHCs, likely a consequence of more maternal care in voucher UHCs.
8	Indonesia midwife vouchers, Pemalang province, Java. 1998-2004	Not assessed	MMR declining in province over the period but cannot be attributed to project
9	Sehat Voucher Scheme (pilot), Pakistan, 2008	Not assessed	Not assessed
10	STI Vouchers, Nicaragua, 1995 onwards	Not assessed	Reduction in prevalence of gonorrhea in the female sex worker population by an average of 5.25% per year; reduction in incidence in repeat users by 11.5% per year; reduced prevalence of syphilis by an average 10.25% per year; women remained STI free longer; and while HIV prevalence has increased in Managua, it is much lower compared to that of sex workers in other major cities

	Programme	Quality of care	Health outcomes
11	SRH Vouchers, Nicaragua, 2000	User satisfaction higher among voucher receivers vs. non-recievers, especially among girls not yet pregnant (91% v.85%); 88% voucher receivers satisfied with care at reception vs. 80% for non-receivers; no statistically significant difference in perception about doctors' explanation (83% vs. 80% for receivers v. non-receivers). Prior to voucher implementation, half the simulated patients (SP) left the doctors' office without contraception; reported decision on contraception being made by doctor; with voucher, higher rate of contraception distributed, also respondents more frequent mutual decision making on contraception. However, SPs with vouchers stated that their wait times were longer in some cases, and there may have been some gaming of the system by providers. Also, some quality indicators improved during intervention but dropped once it was stopped	Voucher receivers had significantly higher levels of knowledge about modern contraceptives (OR 1.3), STIs (OR 2.6) and the ways to prevent STIs (OR 1.2).
	Long term cash		
12	Family Allowance Program (PRAF)'s BMI Voucher, Honduras, 1990 onwards	Poor individual counselling on nutrition reported, as well as gaps in information to beneficiaries	Evaluation of first phase found no evidence of health or nutritional gains, perhaps because of low level of payments
13	Opportunidades, Mexico, 1997	Oportunidades beneficiaries received 12.2% more prenatal procedures compared with non-beneficiaries (adjusted mean 78.9, 95% Confidence Interval (CI): 77.5–80.3; P<0.001). Higher perceived quality of care among users - which may be result of greater sense of empowerment achieved through the overall program. Some small-scale studies suggest however that public facilities were not always able to cope with the increase in demand (e.g. running out of drugs)	Oportunidades beneficiary status was associated with 127.3 g higher birthweight among participating women and a 4.6 percentage point reduction in low birthweight. Also lower incidence of illness amongst beneficiary children, reduced stunting and increased growth. Maternal and child mortality delined in programme areas, but this is based on administrative data alone and uncontrolled

Table 4 Program costs, funding and sustainability, selected DSF schemes

	Programme	Costs and cost effectiveness			Funding & sustainability	Country economic band
		Overall cost	Cost breakdown	Cost effectiveness		
	Cash linked to specific service use					
1	JSY India	Budget allocation of 15·4 billion rupees ($342 million) in the 2009–10 financial year to reach 9.5 million women (estimated 36% of total births in India for the year)	7% of funds at state level can be used for admin; 1% at district and 3% at facility	Not assessed	Financed by central government through taxation	Low middle income
2	SDIP Nepal	Five year estimated cost of NRs. 0.95 to 1.3 billion (GBP 7.3-9.9 million)	Not assessed	Not assessed	Grant funding from the World Bank, DFID and AusAID funding; long-term funding to be absorbed by government	Low income
	Vouchers					
3	Chiranjeevi Yojana, Gujurat, India, 2005 onwards	No information	Average cost of Rs 1,795 ($45) negotiated with providers, to cover all costs, and across all delivery types	Not calculated, but authors note that by contracting in bulk with private providers, the government is getting a better price - $45 per delivery, compared to the average paid by non-covered people of $100	No information	Low middle income

	Programme	Costs and cost effectiveness			Funding & sustainability	Country economic band
		Overall cost	Cost breakdown	Cost effectiveness		
4	OBA, Kenya	Expenditures Phase I- June 2006 to Oct 2008: 6.1 million Euros	21% on management and administration; 79% on direct service costs. Provider reimbursements for vouchers: C-section/complications in delivery US$ 292; normal delivery $70; ANC $14; surgical contraception $42; implant $28; IUCD $14. More cost effective for government facilities than NGO clinics. NGO clinics have added costs such as for space rental which government facilities do not have to bear	Not assessed	Funded mainly through the KfW and Marie Stopes Intl through 2012, but the Government of Kenya (GoK) has contributed. After 2012, financing will rely on the GoK and other partner buy-in	Low income
5	RH Vouchers, Uganda	US$ 6.3 million (for 3 years beginning 2008)	Provider reimbursements for vouchers: normal delivery $58; complications $140; STI treatment $10; $0.11 per voucher sale. Average total cost of US$ 53 per person for STI voucher. Patient care only absorbed 18% of programme costs in first two years (21% went on management and rest of marketing, TA etc.). However, unit costs dropped to $21 per client visit in 2009.	Not assessed	STI vouchers 2006-8 funded by KfW. Beginning October 2008, both components funded for 3 years through KfW and World Bank (GPOBA) partnership	Low income
6	Vouchers for poor pregnant women, Cambodia , 2007	No information	Unit cost: Approx. US$ 7.5 for a normal delivery and US$ 0.25 for each antenatal and postnatal care visit + a variable transport cost estimated at US$ 0.1 per km.	Not assessed	Assistance from Belgian Technical Cooperation	Low income
7	Maternal Health Voucher Scheme, Bangladesh, 2007	No information	Providers compensated for vouchers depending on service provided as follows: 10 Tk for voucher distribution; 70 Tk for blood and urine tests; 150 per ANC visit; 300 Tk normal delivery; upto 6000 Tk for c-section; 1000 Tk for eclampsia/vaccuum; 50Tk for PNC visit; 100 Tk for medicine.	Not assessed	Donor funding administered by World Bank currently	Low income

	Programme	Costs and cost effectiveness			Funding & sustainability	Country economic band
		Overall cost	Cost breakdown	Cost effectiveness		
8	Indonesia midwife vouchers, Pemalang province, Java. 1998-2004	The total cost of base wages and voucher reimbursements for the 30 TPC midwives in Pemalang district was over Rp. 1.2 billion (US$134,000) for the period 1999 to 2004; in addition, two staff from the District Health Bureau were each paid a monthly salary of Rp. 150,000 for their role in monitoring. The District Project Monitoring Unit (DPMU) also received an unknown income for its	In 1999, the voucher payments were Rp. 60,000 for delivery, Rp. 30,000 for family planning, and Rp. 5,000 each for other services	Not assessed	Project costs were paid by the World Bank and the central government through 2003; 2004 costs for base wages were paid by the district while vouchers continued to be reimbursed by the central government with World Bank funding.	Low middle income
9	Sehat Voucher Scheme (pilot), Pakistan, 2008	No information	Rs. 4000 per woman (includes provider and beneficiary entitlement)	Not assessed	Pakistan Initiative for Mothers and Newborns (PAIMAN) project funded via JSI/USAID; Expanded to another district, with support from another donor and local government.	Low income
10	STI Vouchers, Nicaragua, 1995 onwards	US$ 60,000 per year	Under the voucher scheme, the average cost per consultation (voucher redeemed) was US$41 and the average cost per STI cured was US$118. Direct medical costs including administration accounted for 63% of total cost; remaining on training and supervision; distribution and other support activities.	Voucher programme had higher per STI patient treated costs, but lower per patient STI effectively cured costs at $118 compared to status quo of $200. Able to negotiate good rates with providers, who appreciate steady income from the scheme	Donor funding; implemented by ICAS	Low middle income

	Programme	Costs and cost effectiveness			Funding & sustainability	Country economic band
		Overall cost	Cost breakdown	Cost effectiveness		
11	SRH Vouchers, Nicaragua, 2000	No information	Avg. unit cost per consultation was negotiated at US$ 4.56	Not assessed	IACS (Central American Health Institute) administered; donor funding	Low middle income
	Long term cash					
12	Family Allowance Program (PRAF)'s BMI Voucher, Honduras, 1990 onwards	US$ 3.5 mn per year (1990-2005)	No information	Not assessed	Being funded mainly through IADB with some funding from Government of Honduras	Low middle income
13	Opportunidades, Mexico, 1997	$3.6 billion in 2007	30% of costs spent on targeting, according to one study	Not assessed	Funded via 1bn loan from IADB - Oportunidades also has won a significant commitment from the government representing 46.5 % of Mexico's federal annual anti-poverty budget (Also recently approved 1.25bn funding via WB for 2011-13)	Upper middle income

Table 5 Typical strengths and risks associated with the three main DSF approaches

Mechanism	Summary of strengths	Summary of risks or challenges
Cash for services	Simpler version – can be implemented through integrated services and at large scale, if desired	Higher risk of weak management and patchy implementation, especially if no third party administrator
	More suited to categorical targeting (e.g. all pregnant women) than individualized	Categorical targeting is always at risk of 'capture' by less poor groups
		Higher risk of ignoring supply-side constraints, including low quality of care
Vouchers	Well adapted to community targeting and identification of specific target groups	Costs of identification and distribution tend to be high, especially when the target population is dispersed
	Marketing and distribution strategies can be used to raise awareness of neglected or stigmatized services (e.g. STI treatment). Leakage also less likely for these services	Higher risk of fraud (e.g. counterfeiting, black market sales) than cash for services
	Vouchers require third party administration which, while costly, can be more effective at ensuring quality of services provided	Few vouchers schemes are operated at large scale
	Allows, in principle, for easy tracking of outputs	
Long term cash	Can address broader objective of providing income support, while also promoting merit goods and services with externalities	May work better as income support than as a way of stimulating increased use of priority reproductive health services
	Payment mechanisms can be more direct and cost-effective, e.g. into client bank	Despite well-publicized success of Opportunidades, not all schemes have

	accounts	achieved high accuracy of targeting or significant changes to behavior
	Tend to operate at scale and long-term, which reduces the relative size of targeting costs	As a social protection measure, the overall cost is likely be high, making this most sustainable in upper middle income countries and above

Table 6. Some outstanding research questions on DSF

DSF versus user fee removal

DSF schemes generally cover some part or all of service and access costs. From a consumer perspective, therefore, they can operate in a similar manner to the removal of user fees for specific services (e.g. family planning or delivery care). The main differences are that most schemes are targeted to certain income groups or areas, and some are managed by a third party structures. These third party structures may also leverage quality improvements, although again this can potentially be paralleled in an integrated structure, assuming payments to facilities are sufficient to allow some investment in quality enhancements.

Whether the higher costs of establishing and managing these structures is offset by greater targeting precision or more efficient purchasing will depend in the first case largely on demand conditions and the degree of public sector management capacity. If utilization of a service is low in absolute terms across all quintiles, then the costs of targeting are unlikely to be justified. Even if wealthier women are considerably more likely to deliver in a facility than poorer ones, if the overall skilled delivery rates are low, then targeting of payments may not be appropriate. There is also an important demonstration effect to consider – when wealthier women shift to facility deliveries, this will usually be emulated over time by other socio-economic groups.

On the supply side, administrative capacity is needed for good implementation of any of these policies. Effective financial management is highlighted as a challenge in most study reports, but particularly those utilizing regular government systems.

DSF versus insurance

The cost-effectiveness and preconditions for DSF should also be compared with insurance approaches, which can have very similar goals – increasing service uptake and reducing financial barriers – although they commonly have wider financial protection aims as well. Some countries such as Argentina have adopted an insurance approach instead of CCTs: the Plan Nacer, for example, offers coverage for a package of basic interventions to all uninsured pregnant women and children under six. Its estimated cost is $10 per capita per month (World Bank, RBF 2010).

The value-added of conditionality

While the Latin American CCTs such as PROGRESA have had positive impact on nutrition, health and development outcomes, the debate about the value-added of the conditionality continues, with unconditional cash transfers in other regions achieving significant gains for nutritional status of

children, for example (Glassman et al. 2007). Conditioning comes with a cost, both in terms of monitoring but also for households. For example, an average household at the start of Progresa faced 32 conditioned visits for health care and talks a year; these carry clear opportunity costs.

Unconditional cash transfers give poor families most flexibility. Yet vouchers and conditions reassure governments and donors that money will be spent on desired goals. In practice, compliance with conditions is not always enforced rigorously (Chapman 2006).

The costs and benefits of poverty targeting, and alternative approaches

Targeted schemes typically impose higher costs while potentially providing a more pro-poor result, but assessing both is a pragmatic issue, depending on the modalities adopted. In general, if DSF schemes do not target the poorest, they are likely to disproportionally benefit wealthier groups, whose utilization of health services is typically higher. On the other hand, individual poverty targeting often leads to under-coverage of target groups and is costly. Whether these outcomes are acceptable depends on social goals – increased utilization across all social groups may be a priority, or there may be particularly disadvantaged pockets of population which are the priority. Longer term political support for a program may also be increased if benefits are spread beyond the poorest. **Decisions on whether to target individually will depend on a large number of questions, including consideration of stigmati**zation, the availability of data for targeting, minimizing opportunities for patronage etc.

In the Uganda voucher scheme, the high cost of conducting individualized poverty assessment led to a decision to offer vouchers to all households in areas with high poverty[4]. By restricting the areas to sub-counties, leakage was thought to be minimized. The effectiveness of area targeting will depend on area characteristics, though, such as homogeneity of socio-economic characteristics. Densely populated and relatively homogenous areas such as urban slums may be particularly suited to geographic targeting.

Paying for demand and/or paying for supply

There is a shared logic to the impetus for DSF and provider pay-for-performance approaches. While demand has to be stimulated for certain services and their affordability increased, so too health workers incentives have to be 'aligned' and their motivation (via pay) increased. For this reason, many DSF schemes include a provider incentive component. Some design questions are also shared – what is the right level of incentive, which services should be prioritized, which group of consumers/providers to reward, and how to monitor? However, the risks are somewhat different. The main risks for DSF payments are that funds are wasted making payments to households who would have used services in any case, and that demand is generated for services which are of low quality (and consequent health benefits are not realized). High transaction costs of targeting and scheme management are also a source of inefficiency. For provider payment schemes, there are additional concerns about perverse effects, including gaming of the payments system, neglect of non-funded activities and the potential demotivation (for individuals, teams and cadres not included in the pay-for-performance systems).

While both pay-for-performance and DSF have shown their potential to raise provision and consumption of services in the short-term, the longer term question is what happens when payments are withdrawn. Will changed behaviour be maintained? What are the benchmarks for assessing when

[4] Defined in this instance as 'the poorest sub-counties where poverty incidence is above 50% and poverty density is above 100 people per square km' (Boler and Harris, 2010).

the right stage has been reached to make this transition?