Making Services Work for Poor People

A Research Program on Public Services

Success in reaching the Millennium Development Goals, particularly those related to human development outcomes, will depend not just on faster economic growth and the flow of resources, but on the ability to translate those resources into services. Thus improving service delivery has become a higher policy priority. The purpose of this Research Program is to find new ways to measure the efficacy of public spending and service delivery, and analyze their determinants in the context of complex motivations, multiple outputs of varying measurability, multiple stakeholders and delivery systems, and user differentiation. The Program will generate new micro data through frontline provider surveys and randomized experiments. It will go a long way towards generating new analytic work and findings for the 2003/04 World Development Report on the same topic, but it will also continue well beyond the publication of the WDR. The Program is closely linked to the Bank’s operational work as well as the in-country and international research community. While the research covers all developing regions, special attention is given to Africa and South Asia where the gap between current poverty and human development indicators and the Millennium Development Goals is the widest.

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Countries

Bangladesh, Bolivia, Brazil, Chad, Chile, Taiwan (China), China, Costa Rica, Egypt, India, Kenya, Laos, Madagascar, Malaysia, Mexico, Mozambique, Nicaragua, Nigeria, Pakistan, Papua New Guinea, South Korea, Uganda, Vietnam, Zambia.
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1. Prioritizing research on service delivery

Success in reaching the Millennium Development Goals (MDGs), particularly those related to human development outcomes, will depend not just on faster economic growth and the flow of resources, but on the ability to translate those resources into basic services. With the shift in focus from inputs to results and outcomes, as laid out in the MDGs, improving service delivery has become a higher policy priority.

Service delivery is at the core of the World Bank Group’s strategic priority of investing in people. A key challenge for policy research in the Bank is to improve services for poor people. In particular, we need to find better ways to measure the efficacy of public spending and evaluate the performance of service delivery.

The rationale for government intervention is to enhance efficiency and ensure equity. However, the degree to which governments in developing countries are actually able to deliver good-quality services to address efficiency and equity concerns, has become a more pressing issue. There is widespread practical evidence of poor performance in service delivery: rural schools do not have qualified teachers; health facilities lack trained staff and basic equipment; or transfers of public funds suffer from capture. Underlying reasons range from political economy issues to provider and household behavior and incentives. In many contexts and times, non-governmental sectors (for-profit and not-for-profit) have stepped into the breach left by governments.

There is a considerable body of research on health and education in developing countries using household data from the Living Standard Measurement Study (LSMS) surveys, which have their institutional home in the Bank’s Research Group. Similarly, a considerable body of research exists on the relationship between public spending and growth, on the one hand, and between public spending and human development outcomes, on the other hand. However, unsatisfactory health and education outcomes and poor basic service standards in many developing countries, as indicated in Voices of the Poor (Narayan and others 2000), suggest that research has not, to date, been sufficiently catalytic and/or absorbable as policy lessons.

In 2001 the Development Economics Vice-Presidency launched a new multi-sectoral research team on Public Services. The team’s manager is Ritva Reinikka and lead economists for education and health are Elizabeth King and Jeffrey Hammer, respectively. Two research teams were merged to create the new team. The Public Economics team used cross-country and budget data, analyzed public expenditure, decentralization, and other public policy issues, often without an explicit reference to the demand for services. The Human Development (HD) team made use of household survey data; focused on household economics, demand for social services, equity, and production of HD outcomes within the household, often without reference to the supply side or to the institutional context within which social services are delivered. During the past year the Public Services team has been building a practical research program (in collaboration with several country teams in the Regions and research institutions both in developed and developing countries) to combine the supply of and demand for
services and to generate policy lessons on what works in service delivery. Given that the research team is co-managed with the Bank’s Human Development Network, its mandate is to produce practical guidance communicated in an accessible fashion.

Although the focus is on education and health care service, which typically are transaction-intensive, we expect many of the findings on provider behavior, incentives, accountability, participation, and so forth, to be applicable to other basic services, such as water supply, sanitation, agricultural extension, road maintenance, rural electrification, the police, and the judiciary. We also recognize that health and education outcomes depend on many other services apart from those in health and education (as well as on many factors other than services).

The 2002/03 World Development Report (WDR) will investigate how countries can accelerate progress towards the MDGs by *Making Services Work for Poor People*. It will celebrate successful innovations while taking a hard look at some of the failures, and learning from both will attempt to guide policymakers, donors, and citizens on improving the delivery of services. The Public Services Research team will be closely involved in the WDR both in terms of generating new research for it and directly contributing to the preparation of the report. In addition to generating new analytic work and findings for the upcoming WDR, this Research Program is also expected to continue well beyond publication of the report.

This Research Program proposal is organized as follows. This section presents the case for prioritizing research on service delivery, specifies a number of policy and research questions to be addressed by the Program, and discusses data issues and links to the Bank’s operations and international and in-country research institutions. Section 2 highlights the research agenda on service delivery by nongovernmental organizations. Section 3 contains the research portfolio on health care. Section 4 summarizes the research portfolio in education. Section 5 details the expected outputs and presents staffing, timing, and cost, as well as a funding request for the Research Support Budget (RSB).

### 1.1 From public finance to production of services

It is useful to distinguish between *financing* and *production* of services. While financing continues to be important, it has received most of the attention until now. This proposal focuses on problems of service production, including government at all levels, especially lower tiers, private not-for-profit providers (NGOs, Churches), and the private for-profit sector.

A considerable body of evidence exists on the relationship between public spending and economic growth. The available empirical evidence, largely based on cross-country data, finds that the effect of public spending on growth is ambiguous at best. For example, Kormendi and Mequire (1985) and Ram (1986) find that higher government expenditures are associated with higher growth, whereas Landau (1986), Barro (1991), Dowrick (1992), and Alesina (1997) find higher government expenditures to be associated with lower growth. Easterly and Rebelo (1993) show that overall public investment has a very low impact on
growth, but that certain types of investment expenditures are correlated with growth. Devarajan, Swaroop and Zou (1996) observe that the standard candidates for productive expenditures had either a negative or an insignificant relationship with growth.

With respect to public spending and educational outcomes, researchers have had difficulty finding much relationship between the level of resources spent on schooling and education outcomes (Hanushek 1995). It is hardly surprising that a positive relationship between resources spent and outcomes might be weak at best in contexts where allocated government funds do not reach schools intact, as studies in Uganda (Reinikka and Svensson 2001a) and Indonesia (James, King, and Suryadi 1996) have shown. However, Hanushek finds the same thing in the United States suggesting that the problem is more general.

Cross-country studies in health have come to a consensus on two points (Filmer, Hammer, and Pritchett 2000). First, socioeconomic characteristics explain nearly all of the variation in the mortality rates across countries. For example, an econometric study of mortality among children under age five by Filmer and Pritchett (1999) shows that virtually all the cross-national variation in child mortality can be explained by a small number of variables, including average gross domestic product (GDP) per capita, a measure of the distribution of income, the level of female education, a dummy variable for predominantly Muslim countries, an index of ethno-linguistic diversity, and regional dummy variables.

Second, total public spending on health care has had much less impact, on average, on life expectancy and child mortality than one might expect. Although the lack of data on public spending has, until recently, limited direct examination of the issue, Musgrove (1996) and Filmer, Hammer, and Pritchett (2000) summarize studies of the effect of public spending on health along similar lines. Namely, multivariate estimates of the determinants of life expectancy and child mortality show that income is always significant, but the share of public spending on health in GDP is not. Filmer and Pritchett (1999) estimate that doubling public spending from 3 to 6 percent of GDP would improve mortality by only 9-13 percent. Bidani and Ravallion (1997) find, however, that public spending has a large effect on the health status of the poor, but they also estimate the effect of public spending on aggregate health status (of the poor and nonpoor taken together) to be quite small.

Several possible hypotheses might explain the weakness in these correlations. One possibility is that in fact public expenditures do not have any impact on growth or human development outcomes. A second possibility is that some types do and some types do not, but given the mix it is hard to separate them. Another possibility is that public expenditure is generally effective, but this is obscured by omitted variable bias; for example, areas that have greater health needs might have more need for spending, or areas where health care service is

1. Indeed, the empirical growth literature abounds with explicit (and implicit) attempts to separate productive spending from expenditures that have no direct effect on productivity, for example, by ex ante determining what types of spending are likely to be productive (see Barro and Sala-i-Martin 1995). Given the ambiguity in research findings, it appears that partitioning expenditure categories does not address the core problem—that public funds tend to be a poor proxy for actual service delivery.
more expensive might have greater expenditure. Another possibility is attenuation bias due to poorly measured expenditure.

In order to distinguish the various possible explanations for the lack of correlation between spending and outcomes, and in particular to determine whether this results from omitted variable bias or because some types of spending are inefficient while others are efficient, it is necessary to have plausibly exogenous variation. Natural experiments or prospective randomized evaluations are one way of ensuring such variation.

Using cross-country data, Rajkumar and Swaroop (2002) show that public health spending lowers child and infant mortality rates and increases primary education attainment in the countries where governance is good—measured by level of corruption and quality of bureaucracy—but not in countries with poor governance indicators.

A number of recent microeconomic studies argue that the ambiguity in the relationship between public spending and economic growth, on the one hand, and social outcomes, on the other hand, is caused by a problem of identification: more spending does not necessarily imply more public capital or public services. The cost of public investment may be much higher than its return due to non-profit-maximizing behavior by governments (Pritchett 1996), or (bureaucratic) capture of public funds may prevent spending from reaching the intended beneficiaries (Reinikka and Svensson 2001a). In fact, when actual output measures (instead of spending) have been used, such as telephones per worker (Easterly and Levine 1997) or electricity available from the public grid to enterprises (Reinikka and Svensson 2001b), a positive relationship between inputs and outcomes emerges. Hence, micro-level evidence (instead of cross-country data) is required to assess the real impact of public capital and services on outcomes.

1.2 Policy and research questions

The purpose of this Research Program is to measure and explore determinants of efficacy of public spending and service delivery in the context of (see also Box 1):

- Complex motivations of service providers,
- Multiple stakeholders and multiple outputs of varying measurability,
- Multiple delivery systems, and
- User differentiation, such as income, gender, and education.

As argued earlier, little systematic information is available on service providers in developing countries. More is known about users through household surveys but this evidence is seldom directly linked to service provision. Therefore, an important contribution of this Research Program will be the establishment of stylized facts about service provision on the frontline. Such stylized facts can be used as benchmarks for multi-country comparative studies, as well as baselines against which to monitor the effectiveness of policy changes and performance of the service delivery systems over time within individual countries.
The other important use of these data is empirical research on incentives (both at the level of the individual and the organization), provider behavior (comparable to analysis of household behavior), and analysis of determinants of quantity and quality of service outputs, resource allocations within facilities, service categories, financing (including user fees and donor financing), management systems and incentives, community participation, staff attendance, and so forth.

Priority policy questions will vary by country. Similarly, new research questions can be expected to emerge during the course of implementation, given that this is a relatively new area of research. The first set of research questions to be explored empirically include:

- What are the most cost-effective ways to meet the human development related MDGs?
- What motivates staff to deliver quality services, especially to the poor?
- How to design institutions that can generate the “right” incentives within the public sector, characterized by multiple principals (stakeholders) operating in a political economy context, multiple agents, and multiple tasks, as well as actions and outputs that are not easily verifiable?
- What kind of accountability and oversight mechanisms between various tiers of government as well as between the providers and beneficiaries are conducive for improved service delivery?
- How do multiple delivery systems impact efficiency of spending and service delivery, including private not-for-profit, private for-profit, and public sector providers?
- What is the impact of information and “voice” of different users on the quantity and quality of services?
- How do demand and supply interact to produce good (or bad) outcomes?
Box 1. Theory of incentives and public sector agencies

The organizational structure of public sector agencies involves multiple tiers of management and frontline workers. Multiplicity is also a key aspect of public sector agencies both in terms of the tasks they perform and stakeholders or constituencies they serve. Another characteristic is that their output and actions are often difficult to verify or measure.

Even though most of the incentive theory does not specifically address issues related to public service agencies or service delivery, as it has primarily been developed for the firm, it provides, nevertheless, a useful framework and testable hypotheses for our empirical research agenda. In the last few years, applications of this theory to the public sector have begun to emerge in the literature, a promising development from the viewpoint of this Research Program (for example, Dixit 2000, Burgess and Metcalfe 1999, Hammer and Jack 2001).

Dixit (2000) gives an example of multi-tasking and multiple stakeholders in the context of public education. In this case, multi-tasking includes providing literacy and numeracy and other direct skills, supporting the emotional and physical growth of the children, providing vocational skills and preparing pupils for working life, providing skills in health and financial management, instilling citizenship, overcoming the disadvantages of home life, and ensuring children can grow up in a violence-free environment. While these goals are not mutually exclusive, they compete for limited resources in the schools’ production process, and, as mentioned earlier, it is often difficult to measure the output of each of these tasks.

Similarly, the diverse body of stakeholders in public education includes parents and children, teachers and their unions, taxpayers, potential graduate employers, society as a whole, private schools, and various groups favoring or opposing specific components of the curriculum. These principals have diverse preferences and objectives. Parents want “good education” and day care for their children, teachers and unions want higher pay, taxpayers want low costs, employers want vocational skills, society wants good citizens, and private schools compete for pupils and some public funds. Again, many of these objectives are mutually conflicting, for instance taxpayers’ objective of low costs vis-à-vis teachers and the union’s goal of having higher pay. And yet, teachers are often not interested in money alone but in challenging work and career prospects.

The existence of multiple principals reduces the agent’s incentives, because activities desired by the principals to realize their respective goals are often substitutes for each other (for example, Bernheim and Whinston 1986, Dixit 1996 and 1997, Holmström and Milgrom 1988, Martimort 1992, and Stole 1991). Similarly, when some task outcomes are verifiable and others are not, it may not be optimal to provide explicit incentives to any task, as the agent would divert all effort from unverifiable to verifiable task. In education, for example, exam results would be disproportionately emphasized. In health, local pressure from clients may skew delivery toward curative care and away from public health (Hammer and Jack 2001). Incentive schemes are most suitable when tasks are clearly defined and unambiguous, and become weak when neither outcomes nor actions are verifiable, as in a typical government ministry. Public service providers also often lack competitors. While the introduction of competition does not in itself guarantee better performance, it places greater emphasis on other management devices.
1.3 Data

As mentioned above, it has become evident that there is a severe shortage of systematic evidence and lessons at the level of the service-providing unit, such as the clinic or the school. The core task of the Public Services Research team is therefore to collect such micro-level evidence, and to organize its analysis in collaboration with scholars and institutions in the developing countries concerned. This micro-level data from frontline service providers will include public, private not-for-profit, and private-for-profit sectors. A new survey instrument, the Quantitative Service Delivery Survey (QSDS), is currently being designed and tested for that purpose (Box 2). The QSDS takes the frontline service facility or service provider, such as the health clinic or the school, as the principal unit of observation much in the same way that the firm is the unit of observation in enterprise surveys and the household in the household surveys. The QSDS provides comparable micro data on the “service delivery climate” across countries.

Furthermore, we intend to link the service-providing unit “downstream” to evidence from actual and potential users (through household surveys) and “upstream” to the public administration and political processes (through surveys of public officials). This will allow us to analyze supply and demand factors jointly, as well as to bring political economy factors explicitly into the analysis.

Policy experiments are another way to obtain micro-level evidence on service delivery and its impact. Evaluating programs by examining correlations of inputs and outcomes can sometimes be misleading. For instance, researchers might observe that schools with more textbooks typically have better educated children. However, the greater educational achievement might reflect other factors correlated with textbooks, such as income or parental interest in education, rather than being a direct causal effect of the textbooks. On the other hand, if compensatory programs provide textbooks to problem schools, then retrospective studies may underestimate the effect of these programs.

One way to address these concerns is to conduct randomized prospective evaluations. Such prospective evaluations (done with random assignment to treatment and comparison groups) revolutionized medicine, and they could have a similar impact in other fields. In several cases, field experiments have produced strikingly different results from retrospective econometric analyses of inputs and outcomes (LaLonde 1986, Miguel and Kremer 2002, Glewwe and others forthcoming).

In fields such as health and education, randomized evaluations are often feasible. For example, programs could be phased in over time with the order of phase-in determined randomly among suitable sites. The randomization would mean that areas treated early and later should be comparable aside from the effect of the program. Then the effects of the program can be measured directly, and the results will be transparent to policymakers. One

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2 Details on the QSDS surveys including questionnaires can be found on the Public Services Research website http://econ.worldbank.org/programs/public_services/topic/tools/.
example of this is the PROGRESA program in Mexico, where a subset of the villages was selected randomly for delayed implementation of the program. The success of PROGRESA is spawning similar programs in other countries. Other examples demonstrating the feasibility of conducting randomized evaluations include a study of school-based de-worming in Kenya and an evaluation of a school voucher program in Colombia (Miguel and Kremer 2001, Angrist and others forthcoming).

Box 2. The quantitative service delivery survey (QSDS)

Collecting micro-level data from service-providing units is a key element in the Public Services team’s research program. The surveys of service facilities are not entirely new, however. The Living Standards Measurement Study (LSMS) and Demographic and Health Surveys (DHS) surveys as well as several project evaluations have used health facility surveys in the past. However, these have been relatively limited in scope (for a review of LSMS surveys see Alderman and Lavy 1996). Similarly, community surveys have included interviews with a few informants to pose questions on service facilities. The proposed QSDS focuses on the service provider to collect a comprehensive set of quantitative data on different aspects of service delivery.

The objective of the proposed approach is twofold. First, we intend to develop survey instruments that will serve both as diagnostic tools and data collection instruments for research. It can be argued that these instruments have immediate relevance for operational policy dialogue. Many countries formulate policies within a paradigm of state-led growth and development, with large and ambitious public spending programs intended to improve well-being. Yet, the implementation capacity of governments has seldom been systematically incorporated into the analysis of spending (or lending) priorities. Survey instruments that focus on frontline providers can address this gap, and provide more concrete diagnoses of “the service delivery climate,” thereby contributing to more effective policy dialogue. Second, the primary data collection effort will be geared toward a research agenda on questions of an institutional nature that cut across all sectors. For example, are there specific institutional environments that are associated with greater accountability, and hence improved service delivery and greater utilization rates? Are these institutional environments amenable to policy manipulation to improve outcomes? These are issues on which empirical evidence is severely lacking, despite a plethora of appealing theoretical arguments. Well-designed and executed surveys may thus provide the necessary data to undertake such analysis that informs innovative policy interventions to improve accountability.

As mentioned earlier, in the QSDS instrument, the facility or provider is typically the main unit of analysis in much the same way that the firm is the unit of observation in enterprise surveys and the household is the agent in the household surveys. The QSDS can be applied to government-owned, NGO-run, or privately operated services. In each case, quantitative data is collected directly from service provider’s records, as well through interviews. These data can also be triangulated with those collected from local governments and service users (such as exit polls).

Finally, undertaking the surveys in partnership with both in-country and international institutions yields additional benefits of local capacity building and coordinated provision of financial and technical assistance for policy analysis. Working with in-country academics, research institutions, and relevant ministries can be very useful in building local capacity in and ownership of policy research. Bilateral donors have an important role in financing the survey work and providing technical assistance as these surveys require intensive labor, financial, and other resources that are often beyond developing countries’ own capacities.
1.4 Country participation and relationship to Bank operations

Various stakeholder groups have been engaged in each of the proposed country studies discussed below. First, in each case government is on board, often after a long consultation process between the Ministries of Finance, Health and Education, donors, and civil society organizations. Second, when a micro survey is involved, in each case in-country researchers or consultants will implement it. Third, an in-country research institution will be involved in data analysis.

The Research Program is linked to the Bank’s operational work across all Regions. Furthermore, it gives special attention to Africa and South Asia where the gap between the current poverty and human development indicators and the MDGs is the widest. In particular, work at the country level will be carried out in collaboration with the Bank’s country teams. In most cases data collection is funded by operations and in-country bilateral donor support. RSB funding is required primarily for data analysis and research, including the costs of collaboration with international and in-country researchers, as well as two surveys.

The Public Services Research team has consulted the Human Development (HD), Environment and Socially Sustainable Development (ESSD), and Poverty Reduction and Economic Management (PREM) networks on the proposed Research Program. Specifically, consultations have been held with the following sector boards: Education; Health, Nutrition and Population (HNP); Social Protection; Public Sector; and Social Development. The proposal reflects the comments received. As mentioned above, a large number of colleagues from the Regions are closely involved in this work.

2. Nongovernmental organizations as service providers

Over the past twenty years there has been a dramatic shift in the provision of basic services in developing countries. Services in health care, education, and rural credit, once largely the province of government ministries and other public entities, are increasingly being provided by non-governmental organizations (NGOs). Yet, despite widespread interest and a large number of case studies, there has been relatively little systematic and quantitative analysis of the efficiency and quality of NGO service provision. Conceptual models of NGOs, moreover, are hampered by disagreement regarding the appropriate objective function of NGOs. This research aims, then, at the following tasks:

- Analysis of the costs, efficiency, and quality of NGO service provision in developing countries; and
- Empirical characterization of the behavior of NGOs in developing countries, and comparison to the existing theoretical models.

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3. The research team includes Varun Gauri and Ritva Reinikka (DRG); Marcel Fafchamps, Abigail Barr and Trudy Owens (Oxford University); Raymond Fisman (Columbia University); and William Jack (Georgetown University).
The conventional conceptualization of NGOs holds that the non-distribution constraint reduces the incentive for efficiency because NGO managers cannot lawfully share the surplus generated from their effort and skill. At the same time, the non-distribution constraint reduces their incentive to engage in activities that, though profitable, are socially inefficient, and might also function as a signal of trustworthiness to customers and donors (Rose-Ackerman 1996, Weisbrod 1998). Synthesizing these effects has proven difficult, and as a result the literature has offered a large variety of competing objective functions for non-profit organizations, including maximizing budgets, maximizing quality and quantity, maximizing the use of preferred inputs (such as medical supplies or handicapped persons), maximizing a combination of commercial and public benefits, and maximizing social welfare (Steinberg 1993).

Almost all empirical tests of these hypothetical objective functions have occurred in developed countries. Some studies have found evidence for the hypotheses that not-for-profit entities, including charities such as the United Way, liberal arts colleges, and cultural organizations in the United States are driven to expand available resources as much as possible (Galaskiewicz and Bielfeld 2001). When comparing for-profit and not-for-profit hospitals on quality of care, outcomes, and responses to cost pressures the variation between them is much smaller than variation within them (Cutler 2000). Non-profits as a group, moreover, particularly in developing countries, might have different objective functions depending on their sources of funding and the regulatory framework in which they operate. In short, empirical evidence to test theoretical characterizations of NGO behavior is limited, and comes almost exclusively from developed country contexts.

Comparing the costs, efficiency, and quality of NGO service provision to that of government has immediate and obvious policy relevance. As argued earlier, while public financing of basic services is warranted on both equity and efficiency grounds in many contexts, the case for public provision is more contingent, depending largely on governance in the sector and how agency issues associated with each juridical form play out within schools, clinics, rural banks, and other facilities. While there has been extensive empirical and theoretical work on some aspects of NGO service delivery, such as micro-credit (Morduch 1999), much more work remains to be done in health, education, and related sectors.

This component of the Research Program will advance both the conceptual and policy agendas. The project will consist of three broad areas. First, we will attempt to characterize the behavior of a “typical” NGO in a developing country—externally funded, exempt from taxes on earnings, competing with government services in some markets, and subject to lax regulatory control. The work draws on the contract and incentive theory as well as on results from the country surveys, described below, to specify the objective functions of NGOs. Second, existing household and community survey data will be used to explain location decisions of development NGOs.

The third, and most significant, part of the project will involve the design and implementation of NGO surveys in two country cases, Uganda and Bangladesh. A sample of 200-300 NGOs will be surveyed in each country. The surveys will examine each NGO’s
balance sheet and income statements (comparable to methods used in enterprise surveys), collecting data on sources and uses of funds, services provided, staffing, unit costs, incentives for staff, community participation, savings and assets, and governance. In addition, a focus group instrument will be used to assess the quality of services provided and user satisfaction with those services. These surveys will result in the largest and most comprehensive micro data set available on the activities of NGOs in developing countries. Analyses of the data, both practically and theoretically motivated, will follow, as will comparisons to government and for-profit providers (see also 3.1 for the Uganda QSDS in health care). Both surveys are being planned, designed, and implemented in collaboration with the Africa and South Asia Regions, respectively, as well as with in-country collaborators.

3. Health care provision

This section presents the portfolio research on health care provision, reflecting the research priorities and questions described above. This research includes (i) multi-country QSDS pilot surveys of frontline health facilities in Africa to provide an assessment of the service delivery system and provider behavior, performance measurement in service delivery, and a baseline for examining the impact of policy and institutional reforms over time; (ii) a multi-country study on health worker motivation and incentives; (iii) a study based on new survey work on private health care providers in India, and (iv) an analysis of the health care system to control communicable diseases, piloted in India.

3.1 Pilot for provider surveys in Africa

There appears to be a broad consensus in international health policy circles that the appropriate area of focus for public expenditures in health care in developing countries is primary health care, defined as a mix of public health programs, and preventive and simple curative services provided through low-level facilities. The argument for this stance is appealing because the problems it addresses are the most urgent and prevalent in developing countries, and at the same time problems for which health technology appears to have relatively cheap and non-controversial solutions. As highlighted in section 1, Filmer and Pritchett (1999) provide cross-country evidence on the impact of public spending on primary health outcomes, relative to other socioeconomic variables, and conclude that total public spending as the share of GDP falls far short of expectations in having substantial impact on actual outcomes.

This component goes beyond cross-country data and pilots a micro survey approach to health care providers in five African countries (Chad, Madagascar, Mozambique, Nigeria, and Uganda). The pilot has two main purposes. First, it will design and test the Quantitative Service Delivery Survey (QSDS) instrument to collect a new type of micro-level data from primary health care providers. The QSDS provides comparable micro-level data across countries. Second, these data will be used to generate systematic empirical evidence on basic health care delivery, with the objective of contributing to health and public sector reforms to improve these services. Research questions to be explored are related to incentives, provider behavior, resource flows, voice and information, cost-efficiency, accountability, participation, and the
quality of service as described in section 1. These surveys include government, private not-for-profit, and private for-profit service providers.

Primary health care is particularly appropriate for studying incentives in the public sector, and for determining which institutional features are more likely to be correlated with greater accountability and better performance in service delivery. First, the role of the public sector is not well defined in this area—some components of the services have large externalities, other do not, with potentially substantial impacts on poverty, as access to services by poor people varies—and so effective public initiatives in the delivery of services may be critical to achieving the right outcomes. Second, it is an area where demand is considered to be very sensitive to supply-side issues, such as the behavior of health care workers, the quality of the inputs, and the efficacy of public education programs. Low quality of services can lead even very poor individuals to bypass the public primary health centers for other providers. Surprisingly, it is also an area where there is a very small literature on the role of incentives in determining outcomes in service delivery.

In collaboration with the HNP anchor, the Public Services research team organized a joint workshop on health facility surveys in December 2001, bringing together the LSMS, WHO, Macro International (Demographic and Health Surveys), RAND, and the MEASURE under USAID (see Lindelöw and Wagstaff 2001). We have also prepared a training module on the provider surveys for the World Bank Institute to be used for capacity building in this area.

Chad: Supply and demand side determinants of extremely poor health outcomes

The QSDS in Chad will be combined with the first nationally representative household survey to be launched in September 2002. These two surveys will be explicitly linked, allowing a joint analysis of the supply of and demand for health care. Research questions will include determinants of the maternal mortality rate (one of the MDGs) as Chad ranks among the highest in the world on this indicator (823 deaths per 100,000 live births). Various reasons have been proposed, including pregnant women not seeking pre-natal care, either because of demand or supply constraints, or both. This and other hypotheses will be tested using the household- and the facility-level data. The QSDS will be piloted in June 2002.

In the next few years, Chad will benefit from a substantial increase in public revenue when the Chad-Cameroon pipeline investment is completed. Government has committed itself to allocating much of this revenue to social services. The QSDS will serve as a baseline for reforms in service delivery improvements planned to accompany the expected increases in public spending.

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4. The Bank team includes Waly Wane (DRG); Christine Richaud (AFTP3); and Michele Liou (AFTH3). External collaborators are Bernard Gauthier (Université de Montréal), Mark Gersovitz (Johns Hopkins), and Tomas Philipson (University of Chicago). The in-country research partner is INSEED (Institut National de la Statistique et des Etudes Economiques et Demographiques).
**Madagascar: Evaluation of health sector reforms**

The QSDS in Madagascar (to be piloted in 2002, political situation permitting) will enable the examination of the performance of the Malagasy health care system, and the impact of the ongoing health sector reforms on health outcomes and equity. It will provide a baseline against which future data can be compared, to see how the sector responds to the reforms.

In particular, the Madagascar study will be used to examine the impact of the health sector reforms on public sector governance, that is, on the incentives facing public health authorities and their performance in supplying health services. As private markets for health care and insurance are adversely affected by information asymmetries, the private sector will undersupply those services that have non-excludable benefits, such as immunizations and sanitation. Yet public sector providers are not immune to the same moral hazard and asymmetric information problems that plague the private sector. While improving the performance of the health sector requires correcting or compensating for the most important market failures, it is also necessary to discover and correct public sector failures.

**Mozambique: Financing and incentives in frontline health care delivery**

The current approach to delivering primary level health services in Mozambique has been quite successful. In a context of very limited human and material resources, the National Health Service has managed an increase in the coverage of the health system through an expansion of health facility infrastructure and health sector staff. This has permitted a considerable expansion in aggregate service outputs. However, there is also evidence of notable problems in service delivery, for example, low technical quality, lack of drugs and equipment, low staff morale, and informal charging. In addition, due to poorly functioning management information systems, little is known about the process by which resources are allocated between districts as well as between facilities within districts. The QSDS is designed to shed light on the nature, extent, and determinants of performance problems in the delivery of primary health care, including the role of implicit allocation mechanisms at different levels of administration.

The survey approach reflects the complex institutional setting for delivery of health services. Data will be collected through structured interviews and record reviews at provincial and district directorates. At the facility level, a detailed questionnaire will be administered to the facility director and a sample of staff and clients will be interviewed. It is expected that the survey will cover 30 districts and approximately 100 facilities nationwide. In parallel, a small-scale qualitative component will be implemented in six districts. This component will use semi-structured interviews and focus group discussions to seek a deeper understanding of administrative and management systems, allocation criteria, and constraints in service delivery.

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5. The Bank team includes Mead Over (DRG); and Jesko Hentschel (AFTP1). The in-country research partner is yet to be decided.

6. The Bank team includes Magnus Lindelöw (DRG), Peter Moll (AFTP1), and Mary Mulusa (AFTH1). The in-country research partner is yet to be decided.
Through a deliberate selection of well and poorly functioning districts, reasons for differing performance will be explored.

The survey, which will be implemented in 2002, is designed to study three broad areas that are seen as particularly important in the delivery of health services: (i) human resources; (ii) support systems, financing and supply management; and, (iii) the client perspective. In each of the indicated areas, the survey will provide a detailed analysis of relevant systems and procedures, including the administrative barriers and incentive effects they give rise to. It will also provide both quantitative and qualitative evidence on service outcomes. This includes both direct outcomes (amount of drugs allocated, staffing patterns, etc.) and indirect outcomes (staff and client perceptions, service outputs, drug prescriptions, etc.). Finally, the survey will provide a rich data set and baseline for further analysis, including future evaluations of the impact of ongoing health sector reforms.

**Nigeria: Political economy of primary health care**

The paramount issue in the health sector in Nigeria in the 1980s was the tightening financial constraints imposed upon public spending in health following the decline in the country’s oil revenues. In the last five years, however, revenues of the federation has increased fivefold thanks to a boom in world oil prices, and the recently-elected democratic government is eager to use the windfall to deliver so-called “democracy dividends” to the people. Spending on primary health care, in particular, has increased over the last two years. Through some rudimentary analysis of public budgets and expenditure patterns, a dialogue has been initiated with the Federal Ministry of Finance and some state governments, emphasizing the need to analyze further whether the institutions and incentives in the public sector will actually allow the proposed large spending programs to effectively deliver basic services to the people.

As part of this effort, a survey of primary health care delivery will be carried out in Nigeria, in partnership with relevant government agencies, to generate quantitative data that will allow us to understand what is actually accomplished in terms of service delivery with any given level of public spending, and how these outcomes can be improved. The study will focus on the role of two particular institutions (that have been at the center of policy debate in Nigeria) in shaping incentives and outcomes in service delivery—one, political and fiscal institutions of decentralization to local governments, and two, social institutions of community participation.

There exists large-scale variation across local governments in Nigeria in the extent of autonomy exercised by them in decisionmaking and management, and in the nature of their relations with state governments, the next higher tier of government. There is also variation across local jurisdictions in the role and extent of community participation through community based organizations. This study will assess how these sources of institutional variation correlate

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7. The Bank team includes Stuti Khemani, Monica Das Gupta, Varun Gauri (DGR), and Victoria Kwakwa (AFTP3). The in-country research partners are National Primary Health Care Development Agency and University of Ibadan.
with variation in service delivery outcomes at the level of the service facility. Primary data collection includes:

- Survey of public officials—eliciting information on service delivery responsibilities, activities, performance, relation between the three tiers of government, degree of autonomy from higher tiers, and organization and activities of community based organizations

- Survey of primary health care centers—including interviews of facility managers and workers to assess the institutional environment within which the facility operates; as well as separate instruments to collect quantitative data on inputs and outputs from facility records.

In addition, secondary information on budgetary accounts from available sources at each tier of government—local, state, and federal—will be collected.

**Uganda: Ownership, user fees, and drug use**

In many developing countries, private not-for-profit organizations are important actors in the provision of health care. This is the case also in Uganda. For this reason, the QSDS implemented in the health sector in 2000 was explicitly designed to include health facilities (dispensaries) from all the main ownership categories: government, private not-for-profit (primarily religious), and private for-profit. Despite their importance, there is little systematic evidence on how private not-for-profit facilities compare with government or private for-profit managed facilities. Closing this gap is the first research question to be tackled in this study.

As briefly discussed in section 2, there are two main theories of not-for-profit behavior. The first assumes that private for-profit and private not-for-profit providers only differ in the ease at which they can appropriate profits. Thus, instead of maximizing cash flows, the not-for-profit facilities maximize perquisites. The alternative theory is based on the assumption that private not-for-profit facilities are driven by altruistic motives. The Uganda QSDS data allow us to explore which of these models best characterize the private not-for-profit health facility behavior. Clearly, this has a large policy value.

The second research question is the impact of user fees on the use and provision of health services. Soon after the baseline QSDS was completed, government abolished user fees in 2001, offering a near natural experiment for studying the impact of user fees on health care delivery. The second round of the Uganda QSDS will be implemented in 2003 to explore the impact of this policy change. Third, issues related to drug and vaccine procurement and use at the facility level will be explored, including the apparent over-prescription of penicillin and other drugs in dispensaries.

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8. The Bank team includes Magnus Lindelöw, Ritva Reinikka and Jakob Svensson (DRG); Satu Kähkönen and Sudharshan Canagarajah (AFTP2); Shiyan Chao and Peter Okwero (AFTH1). The in-country research partners are the Makerere Institute for Social Research, and the Economic Policy Research Centre.
The clinical skills of health workers comprise the foundation for the delivery of health services. The importance of health workers is also reflected in the considerable share of salaries and benefits—typically between 60 and 80 percent—in total recurrent health sector spending in developing countries. There are many important challenges in the design and implementation of human resource policy in the health sector, for example concerning the number, skill mix, deployment (geographical distribution), and pay and working conditions of the workforce (Martinez and Martineau 1998). While these “macro-level” policy concerns remain important, there is also a need to address questions concerning health worker motivation and incentives at the micro level. There is considerable evidence that low levels of effort and opportunistic behavior is hampering both quality and efficiency in service delivery. This calls for both theoretical and empirical research on the motivation, incentives, and behavior of health workers.

Standard principal-agent theory provides a framework for analyzing worker incentives. Health workers can be seen as agents for multiple principals, including patients, communities, and government agencies with responsibilities for the delivery of health services. In general, the challenge is to induce health workers to exert effort in a range of different areas: clinical tasks (diagnosis, treatment, follow-up, outreach activities, etc.), psychosocial interaction with patients, and administration and maintenance of hygienic standards. In addition, there is a need to restrain opportunistic behavior (such as absenteeism, overcharging, and petty corruption) by health workers. Agency problems in the health sector are the subject of a considerable theoretical and empirical literature. A sizeable literature has dealt with the incentive issues that arise due to the asymmetry of information between patients and providers. A related literature has studied the effect of provider payment systems on the incentives and behavior of health workers. Recently, the principles of agency theory have motivated reforms in public sector management, which emphasize performance measurement and incentives (for example, Goddard, Mannion, and Smith 2000, Martinez and Martineau 1998, and Mills 1997). These efforts have tried to remedy a perceived lack of incentives in the public sector by introducing systems of rewards and sanctions in the form of performance management systems.

As noted earlier, the health sector is characterized by a multiplicity of tasks and principals, as well as vague and poorly observable objectives. In response to difficulties associated with establishing clear contracts, factors such as merit pay, group incentives and career concerns gain importance (Dixit 1997, 2001; Wilson 1989). In addition, “intrinsic motivation” (Deci

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9. See, for example, Ferrinho and others (1998) for a discussion of absenteeism; Ensor and Witter (2001) and Killingsworth and others (1999) for evidence on informal payments; McPake and others (1999) for an assessment of informal economic activities of health workers in Uganda.

10. See Arrow (1963) for an early contribution.

11. Chaix-Couturier and others (2000) and Gosden, Pederson, and Torgerson (1999) discuss the effect of different forms of physician payment, such as capitation, shared financial risk, fee-for-service, and salary, on medical practice. See also Barnum, Kutzin, and Saxenian (1995) for a discussion on the effect of payment systems on hospital performance.
in the form of, say, professional ethics or norms, may also be important, in effect resulting in a self-enforcing contract. Some contributors have suggested that intrinsic motivation is more likely to arise and be sustained in certain types of organizations, such that, for example, NGOs or religion-based organizations are better able to overcome agency problems in the health sector (Glaeser and Shleifer 2001, Pauly 1987).

The importance of intrinsic motivation has also been emphasized by a multidisciplinary literature that seeks to provide a more comprehensive picture of worker motivation. For example, Franco, Bennett, and Kanfer (2002) propose a framework in which worker motivation has many and complex influences, including non-monetary factors. They highlight the deeply psychological and cultural nature of worker motivation, suggesting three classes of internal influences on motivation that are common across most theories of motivation: (i) goals, motives, and values; (ii) self-concept and other self-related variables; and, (iii) cognitive expectations about the relationship between various actions and consequences. In addition, the organizational, and the social and cultural context influence motivation. This perspective on health worker motivation presents a more complex picture, where the effect of policy changes, including a softening of financial incentives, are highly context-contingent. Drawing on the psychological and sociological literature on worker motivation, some contributors have suggested that intrinsic motivation is not only an essential factor in resolving deep agency issues in the health sector, but that increasing reliance on extrinsic incentives may serve to undermine internal sources of motivation.13

12. Kreps (1997) has suggested that in many cases what is referred to as intrinsic incentives may in fact be workers’ response to fuzzy extrinsic motivators such as fears of discharge or career concerns, but he also acknowledges that “true” intrinsic motivation may be an important factor in many contexts.

13. For example, Segall (2000, p. 11) notes: “Market relationships present health care providers with perverse incentives and can do violence to the professional ethos of caring.” See also Kreps (1997).
Box 3. Role of incentives and culture in petty corruption: an economic experiment

As a complement to the new survey work on health providers, we will pilot economic experiments to investigate the individual decision-making processes that lead to the most common forms of petty corruption. The aim is to explore how culture, both local and professional, and economic incentives interact when individuals are faced with decisions about whether to favor themselves or others. Such decisions are akin to the decision about whether to engage in petty corruption or remain true to social and professional principles.

This new method will involve an economic experiment conducted in the field with health practitioners as subjects. In economic experiments subjects play games for money and hence face real incentives, which, if sufficiently strong, will cause them to reveal their preferences relating to their own and other’s (relative) welfare. The experiment will involve two games known as the dictator game and the punishment game in the experimental economics literature. The former is a simple game that is often used as a control or basis for comparison in economic experiments. The latter investigates sharing behavior and people’s willingness to punish non-sharers (Fehr, Fischbacher, and Gachter 2000).

Hypotheses to be tested using the experiment could include: (1) when health practitioners ascribe to a culture of “turning a blind eye” to petty corruption, does peer-group monitoring become an ineffective deterrent? (2) is the monitoring and sanctioning of practitioners by actors in other roles (supervising manager/patient group) more effective? and (3) does greater observability of practitioners’ behavior lead to “better” behavior?

This approach facilitates a cross-country comparison that could challenge implicit assumptions about corruption in developing countries. The manipulations outlined above enable us to investigate whether health practitioners share a particular culture, that is, a set of socially transmitted rules, relating to other-regarding behavior, how they respond to a greater possibility of punishment, the sharing of the responsibility to punish, and the prospect of shame, an emotion associated with norm violation or with going against the shared culture.

In cases where a shared culture exists, it might be possible to find cost effective ways of enhancing it and strengthening its impact on individual practitioner’s behavior. If observability appears to impact strongly on behavior, then efforts should be applied to increasing observability in clinics themselves. Evidence of variations in tendencies toward other-regarding preferences between sectors that are explained by income variations will suggest that low income is an important factor leading to petty corruption. If such variations cannot be explained with reference to income it might prompt an investigation into training practices and measures taken to boost morale in the two sectors. Finally, the results of this experiment based on “off-the-shelf” games could assist in the design of new games tailored to answer more specific questions about petty corruption.

The economic experiments will be implemented in Mozambique and Chad by Abigail Barr (Oxford University), and Magnus Lindelöw and Waly Wane (DRG). In Mozambique, specified hypotheses to be tested include (i) practitioners’ willingness to transfer resources from themselves to their patients in accordance with their role as civil servants and agents of the government, and (ii) practitioners’ and other actor-types’ willingness to sanction practitioners whose behavior is not befitting of these roles. In Chad, the experiments will generate variables relating to practitioners’ willingness to transfer resources to be incorporated in the analysis of the demand and supply side of health care delivery.
These issues raise a number of important conceptual, empirical, and methodological questions. For example, what is the relative importance of extrinsic and intrinsic motivation, and how do they interact? How do professional norms, commitment, or trust affect the motivation and behavior of health workers? How can we approach the measurement of intrinsic motivation and their impact on behavior? Is intrinsic motivation stronger or more important in certain types of organizations? There is currently little evidence on these issues, particularly for developing countries. Some research has tried to measure professional commitment through the use of self-administered questionnaires with a broad range of questions concerning the worker’s level of identification with the organization (e.g., hospital) and its goals, willingness to exert effort on behalf of the organization, and general job satisfaction.14

Health worker motivation and incentives will be studied in the context of (i) the health care QSDS surveys in Africa (see section 3.1), (ii) economic experiments (see Box 3), and (iii) a cross-country study on teacher and health worker absenteeism to be implemented as part of background work for the 2003/04 WDR (the latter will be funded and implemented separately and hence is not included in this Research Program proposal).

3.3 Private health providers in India15

This Program component (the “Delhi Health Project”) is now in its second year of conducting household surveys concurrent with surveys of doctors and facilities in the areas corresponding to the household locations. Under this Research Program the approach will be extended to a rural area in India. Both the household and the doctor surveys are based on new questionnaires and methodologies, and several important questions have arisen in the course of this work:

- What is the nature of morbidity? What are characteristics of the link between morbidity and poverty?
- How does illness impact on household labor decisions?
- How do households access health resources, and what are the differences that arise between different groups, such as income, gender, and education?
- How are visits distributed between private and government providers? How do households choose between these two sectors? For instance, do households use government hospitals for certain illnesses and the private sector for others, or do they go to government hospitals only following referrals from other doctors?
- What is the experience of households who visit government providers with regards to the quality of care, the dispensation of medication, and the expenditure incurred?

14. See, for example, Bennet, Gzirishvili, and Kanfer (2000). See also Mowday and Steers (1979) for an early approach.

15. The first phase of this research (“the Delhi Health Project”) has been supported by a RSB grant. The Bank team consists of Jishnu Das and Jeffrey Hammer (DRG), and the in-country partner is the Institute of Socio-Economic Research on Development and Democracy.
The data from frequent sampling scheme (repeated weekly surveys) points toward a different picture of morbidity and expenditure from that obtained from other household health surveys. A large part of morbidity in Delhi is from illnesses traditionally regarded as minor and unimportant for either research or policy (for instance, flu or stomach-ache). This research shows that in fact, these illnesses account for the bulk of time spent sick and a large number of doctor visits. Furthermore, the expenditure on such illnesses is regressive with regards to income: low-income households spend far more on such illnesses compared to those in the higher income groups. Thus, this work highlights some problems with the traditional picture of morbidity and health expenditure, which relies on the incidence of relatively infrequent but major illnesses.

Using interviews and case studies suggests that such frequent reports of minor illnesses may reflect problems with the current health sector, both through misdiagnosis (for instance, undiagnosed TB is often reported as cough, fever) as well as maltreatment (for instance, repeated aspirin use may lead to recurring stomach problems). This points to the existence of large inefficiencies in the health sector, and suggests that increasing access to medical care providers is neither a necessary nor a sufficient condition for improvements in health care to occur. Finally, it points toward the central role of information in the use and expenditure on health resources in urban settings.

Another research question is the use of medical resources by various income groups. The starting point is the observation that there is no difference in the frequency of doctor visit among poor and rich households (if anything, poor households visit doctors even more often than their rich counterparts). If income is the only difference between the households, this observation is not consistent with standard utility maximization. Two alternative hypotheses are tested. First, is it the case that the poor are more often sick than the rich? Second, is it the case that there are significant differences in knowledge between the rich and the poor?

Finally, the issue of the nature of the medical market in urban India has also arisen. Although more than 70 percent of medical care is provided by private practitioners, there is a dearth of information on the practices of such providers, as well as the organization of the market for medical care. While some studies document basic characteristics of such providers, the data is extremely sparse, and typically available only for rural areas. From our provider surveys, it is clear that there is tremendous variation both in the quality and the practices of medical service providers in Delhi: degrees range from three-month long distance-learning courses to six-year long formal training courses (equivalent to an MD). The preliminary results show that not only is this variation manifest across localities (higher income localities have more trained doctors) but also within localities (the same locality will have both an MD and an untrained doctor). Further, within localities, there is very little variation in the prices charged by different doctors. This research will provide a clear description of the entire market for medical care, including both private and public doctors and facilities.
Box 4. Survey design in the urban Delhi health project

An urban site was deliberately chosen to help us examine the issues that arise in the provision of health care when accessibility to doctors is not the primary concern. In each survey locality there are at least 80 doctors and health facilities (including nursing homes and hospitals) within a 15-minute walking distance. As a result, the price of health care is fairly low (but not necessarily that of high-quality health care): a visit to the doctor can be as low as 50 cents including prescription of medicines. This environment allows us better to examine causes of ill health and the linkages between morbidity and poverty when accessibility constraints are not the primary issue.

The household survey uses a panel structure whereby households are repeatedly interviewed over a two-year period. In the first four months of the annual cycle, interviews are conducted weekly, with questions on illness, doctor visits, medication and the effect of the illness on the work of the individual. Thereafter, households are surveyed monthly for eight months, until the end of the year. Subsequently, the second annual cycle starts again with weekly surveys. The frequency of these surveys combined with the short recall period allows us to follow households closely as they go through health problems and make health decisions for these two years. The design of this study thus allows us to examine important questions related to the temporal nature of morbidity.

In conjunction with the household survey, we are also surveying medical service providers who serve the localities where the survey households reside. The first stage of this survey was a census of all medical service providers within a 20-minute walk of the seven localities. In the second stage (currently underway), a sample of these doctors was chosen to obtain detailed information on practices and quality. The sampling strategy for these doctors was based on visits as a stratification variable: 25 doctors were chosen with probability proportional to the number of visits, and a further 10 doctors were randomly chosen from the census of medical service providers who were never visited by the households during the course of the survey.

For the detailed survey, two new instruments are being implemented. The first instrument is based on the notion of clinical vignettes, where a team of two surveyors records the examination and treatment strategies for medical service providers against five standardized cases. In conjunction with the clinical vignettes, participant observation is undertaken of each doctor in the clinic for one day (by one surveyor). The combination of vignettes and participant observation yields important insights on the links between theoretical knowledge and practical implementation. Thus, not only is the survey of facilities useful in itself, but also in combination with the household survey, presents unique opportunity to further our understanding of the choice of providers among urban households in India.

3.4 Communicable disease control

To achieve the two-thirds reduction in child mortality laid out in the MDGs, it is essential to reduce exposure to diseases caused by vectors and unsanitary environments. In poor developing countries diarrhoeal diseases and malaria are the main causes of death of infants and young children, while for adults they are the main causes of morbidity, making it harder for people to get out of poverty. Yet we know little about the institutional determinants of effective public health service delivery in reducing people’s exposure to communicable diseases. To
further analytical and operational understanding of these issues, the research focuses on communicable disease control in India. We ask the following questions:16

• What are the key obstacles to more effective public health service delivery for communicable disease control?

To study this question, a comprehensive assessment will be carried out of the functioning of preventive health service delivery at central, state, and district levels in India. This assessment uses questionnaires based on prototypes developed by the U.S. Centers for Disease Control. These are being revised for subsequent use by public health authorities to (i) periodically identify constraints to effective service delivery, and to (ii) conduct inter-state and inter-district benchmarking and performance evaluations over time at the national, state, and district levels. Preliminary results indicate that the key obstacles to more effective functioning lie in institutional procedures and incentives, rather than in a shortage of trained staff and facilities.

• How can communities be more closely engaged in assuring and monitoring these services?

Based on the above assessment, we will identify ways in which the ongoing process of devolving health service delivery to the community level (through the panchayati raj system) can be harnessed to improve public health outcomes.

• How can the work of frontline service workers be more effectively coordinated on the ground, and better supported from above?

The preliminary assessment indicates that frontline workers are given few incentives to focus on communicable disease control, and receive inadequate technical support. Much can also be achieved by coordinating their work (ensuring, for example, that DDT spraying is coordinated with drainage and other methods of vector control). A pilot is planned to apply the lessons from the assessment in a district in Karnataka, and evaluate its impact.

• How have the coordination problems been managed in other developing countries, which have successfully controlled communicable diseases?

A number of case studies of public health systems in a selection of countries (China, China Taiwan, Costa Rica, Malaysia, Mexico, and South Korea) are structured around a common analytical framework. The effectiveness of the system will be assessed with measures of intermediate and final outcomes so that clear alternative models can be distilled and then adapted to the specific circumstances of countries seeking to improve their public health outcomes.17

16. The Bank team consists of Monica Das Gupta and Peyvand Khaleghian (DRG).
17. A separate RSB grant has been approved for the cases studies outside India.
4. Education

This section presents new research on education provision, reflecting the research priorities and questions described in section 1. This research includes (i) a multi-country pilot survey of primary schools, combined with household and other micro surveys, to assess service delivery systems in education, measure performance, and establish a baseline for examining the impact of policy and institutional reforms over time; (ii) a multi-country study on reforms related to teacher incentive; and (iii) randomized impact evaluations of education programs that will explore how the MDG of universal primary education can be achieved in a cost-effective manner and how to improve the quality of education.

4.1 Micro survey approach

As described in section 3 for the health sector, the QSDS approach will also be piloted in education. A multi-country study of five countries (Laos, Pakistan, Papua New Guinea, Uganda, and Zambia) is currently being designed and implemented. As in health care, the new data will be comparable across countries.

Laos: Access, quality, and regional disparities

Analysis of poverty and education services in Laos indicates that poor areas generally have more limited access to schools. Further, the quality of education services in these areas is much lower. Enrolment ratios are also lower, and dropout and repetition rates are higher. Regional disparities in education services pervade every level.

A survey of primary schools will be carried out in 2002 as a collaborative effort with government, the Bank’s country team, and DECRG. It will shed more light on the inequalities in education as well as serious service delivery problems identified by a participatory poverty assessment in 2000 and previous household survey data. The school survey will explore whether access to, and the quality and cost-efficiency of primary education can be improved by, for example, increasing the number of complete primary schools and community-based measures. Similarly, it will explore whether the quantity-quality tradeoff, to the extent it applies, could be mitigated through more efficient management of education resources. For instance, the distribution of qualified teachers is inefficient, with low student/teacher ratios in some areas and very high ratios in others (especially in remote villages where there may be no qualified teachers). Expanded reliance on multi-grade teaching is expected to be a strong cost-saving measure.

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18. The Bank team includes Elizabeth King and Dominique van de Walle (DRG); Ronald Hood and Keiko Miwa (EASPR). The in-country partner is yet to be decided.
Pakistan: Private schooling, quality of education, and gender

Over the past two decades, private education has grown both in terms of the numbers of schools and the proportion of children enrolled. Nevertheless, there has been little research on this phenomenon, largely due to a lack of reliable data either on private schools or on the population.

In a recent paper, Andrabi, Das, and Khwaja (2002) show that private schools are an important component in Pakistan’s education system. Contrary to popular belief, it seems private schools are actually reducing the problems of differential access for disadvantaged groups, such as low-income households and female children. In particular, the low user fees make private schools affordable to low- and middle-income groups, and the inclusion of largely female teaching staffs and coeducational schools have reduced the female-male enrollment differentials. The private sector is also expected to grow dramatically in the next decade.

Important questions regarding school-choice, the nature of the price-quality trade-off, and the role of female teachers remain unanswerable with available data. In addition, there is a major gap in the existing data on outcome variables related to learning in the private sector. There has been no study of the quality of education in private schools, and the formulation of a viable policy for the private sector is highly dependant on the ability of households to judge the quality of education. The research questions of this study therefore include:

- To what extent are households able to judge the quality of schooling that they receive?
- To what extent does the use of private facilities lead to the “pricing-out” of low-income households?
- To what extent does the nature of incentives in the private sector impact on gender differentials in education?
- How important are female teachers on both female enrollment and overall enrollment (more than 50 percent of all teachers in private schools are female, in contrast to public schools with less than 35 percent).
- To what extent should private schools comply with a set of rules and regulations?

To evaluate the quality of private schooling, we must be able to separate out the effects of sorting by pupils (test scores are high because the students all come from “good” backgrounds) from the effects of school inputs, by testing of the same children with the same test at different time (six months apart, as describe in the Zambia study below). The outcome variable will then be the change in test scores over the two points in time, and the relationship between this change and school inputs and fees can be estimated. The school survey and testing data will also be linked with the household surveys carried out by IFPRI and the World Bank.

19. The Bank team includes Jishnu Das (DRG) and Tara Vishwanath (SARVP). An explicit goal of the study is to make it a collaborative effort between the World Bank, and academicians, educationists, and the education administration in Pakistan.
**Papua New Guinea: Resources and learning outcomes**

The vast majority of students in Papua New Guinea (PNG) attend schools that receive heavy government subsidies (recurrent public expenditures are predominantly made up of teacher salaries and school subsidies). Policies around teacher deployment and compensation, and school funding and control of those funds form both the domestic and international core of the debate on improvements in education service delivery.

This study is organized around trying to answer two main questions in the PNG context. First, what are the factors that determine how effectively public funds flow through the administrative and budgetary system and ultimately reach teachers and schools? Second, what determines how effectively those resources are combined with other inputs at the school level to generate education outcomes? The basis for the analysis will be new data collected through a survey of 220 primary schools in 8 (out of 20) provinces. The survey includes instruments for head teacher (covering characteristics of the school as well as of all teachers), the chairman of the school’s board of management, a grade 5 teacher, and a parent of a student at the school. Additional instruments cover the district, province, and national levels. Supplementary data on local level characteristics (including literacy and poverty), the list of teachers on the payroll by school, and on student test performance by school, will be collected from national level sources.

The main outcomes analyzed will be teacher posting and absenteeism (including long-term absenteeism); the share of the intended per-student school subsidy that a school actually received in each quarter in 2001 and 2002; student learning achievement from test scores; student absenteeism, attrition and transition. While effective resourcing and effective use of resources are separate issues, the competing hypotheses about what determines them are overlapping: poverty, physical remoteness, knowledge and information dissemination, organization and degrees of autonomy, participation, and political involvement. The data collected and compiled from various administrative levels and from the service delivery points will attempt to quantify all of these. The main goal of the research will be to assess their relative contribution to explaining variations in outcomes.

**Uganda: Information and voice**

Recent studies confirm that (bureaucratic or political) capture of public funds is a serious obstacle to improving basic service delivery in many developing countries. There is also some practical evidence that information campaigns using mass media can reduce leakage by mitigating the problem of asymmetric information. This research project will assess the impact

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20. The Bank team includes Deon Filmer (DRG) and Gaurav Datt (EASPR). The in-country partner is the National Research Institute.

21. The study is funded by a separate RSB project grant. The Bank team includes Ritva Reinikka and Jakob Svensson (DRG); Satu Kähkönen and Sudharshan Canagarajah (AFTP2); Paud Murphy and Harriet Nannyonjo (AFTI1); and the Economic Policy Research Centre in Uganda.
of information on leakage in nonwage education spending in Uganda. Key research questions are:

- Are better-informed schools, holding other determinants constant, more likely to receive their entitlements?
- Is it possible that by raising some schools’ knowledge (information), other schools will also gain?

The project assesses the relationship between individual schools and the government, as well as possible externalities in the acquisition of information across schools.

Despite the frequent use of buzzwords like “knowledge” and “empowerment” in the policy debate on development, little quantitative evidence exists on the impact of policies aimed at empowering and informing citizens about their rights and entitlements. Educational spending in Uganda is a case in point. A survey of schools to gauge the extent to which public resources actually filter down to the intended end-user revealed that in the mid-1990s, for every dollar spent by the central government to support nonwage expenditures in the primary schools, on average, these schools received only 22 cents. There was also considerable variation between schools bargaining power vis-à-vis other parts of government. As a result of the 1996 survey findings, government began, through information campaigns, to “empower” schools and citizens to monitor and challenge abuses of the system. While this experience has created great interest in many other countries, it has not been rigorously evaluated. This research project proposes such an evaluation.

The research consists of three parts, each with a specific but closely interlinked objective. First, it takes a non-experimental (or econometric) approach to estimate the impact of the information campaign on capture of funds in primary education. To this end, the 250 primary schools in the initial public expenditure tracking survey of 1996 will be revisited. By evaluating the information campaign a few years out, we hope to identify the long-run impact of the changes. Second, a randomized experiment will be carried out to complement the econometric approach. The plan is to expand the sample of schools and randomly assign a sub-sample of the schools to receive training in the workings of the grant program. The sample of schools will be revisited within a year and information on funding will again be collected. The experimental design and the fact that the experiment will be evaluated within a reasonably short time span will minimize the influence of other determinants of capture. An attempt will also be made to evaluate different methods of informing schools. Third, we will investigate possible externalities in the acquisition of information across schools. The purpose is to examine (from the experimental data) whether the acquisition of information or empowerment of a given school increases the likelihood that nearby schools also receive additional funding.
Zambia: Transforming inputs into educational outcomes

A QSDS-type survey will also be carried out in the education sector in Zambia in 2002. The survey has three closely linked components. The first component analyzes service delivery by studying the flow of public expenditure through the delivery system, from the Ministry of Education to the schools. In doing so, the study will provide valuable insights into areas that can be further strengthened, especially with regard to capacity building at lower levels of the educational system.

The second part of the study will examine how the funding that reaches the school, either as cash transfers or the delivery of educational materials, impacts on the test scores of pupils. The education sector in Zambia offers a unique opportunity to implement this strategy, by building on the work carried out by the Examination Council of Zambia through the National Assessment Survey (NAS 2001). The study proposes to retest the children tested under the NAS 2001 with the same test to measure changes in test scores over time. The need for retesting arises from the contamination of outcome measures, such as test scores, due to selection issues arising from the correlation of public expenditure with unobserved school and pupil attributes. This is one of the most important parts of the study and will allow us to deal with the problems arising from omitted variables and selection bias, and hence to make statements regarding the transformation of educational inputs into test score outcomes.

The third and final focus of the study will be to relate school and household characteristics to ascertain the impact of educational funding on enrollment, an issue of great policy importance. The household survey will especially stress the link between health shocks and enrollment in an effort to disaggregate the effect of household level versus school-level attributes in determining the enrollment status of children.

4.2 Teacher incentives

Ongoing work includes a project on teacher incentives launched in a number of developing countries with the overall objective of understanding better what kinds of policies governments can adopt to attract, retain, motivate and develop qualified teachers in elementary and secondary schools.

The research consists of three main components. The first component involves studying recently implemented reforms of the teaching profession in a number of countries. Some reforms involve increases in compensation linked to specific teacher behaviors that are believed to affect educational quality and/or equity. For example, a bonus for providing bilingual education and for teaching in rural and poor areas was implemented in Bolivia in 2001 and a

22. The Bank team includes Jishnu Das (DRG); Hinh Dinh and Mushiba Nyamazana (AFPT1); and Bruce Jones (AFTH1). External collaborators are Stefan Dercon (Oxford); and Pramila Krishnan (Cambridge).

23. The team consists of Elizabeth King, Halsey Rogers, and Emiliana Vegas (DRG); and Michael Kremer (Harvard). The project (apart from the Kenya component) will be funded under a separate RSB research project grant. The Kenya research team includes Esther Duflo (MIT), and Michael Kremer (Harvard). The Kenya component will be funded from trust funds.
bonus for teacher attendance was recently implemented in Nicaragua. In some countries, such as Chile and Mexico, reforms have established teacher pay increases linked to student outcomes. In these cases, we plan to identify the effect of the reforms ex post on teacher quality and, where possible, on student outcomes.

The second component of this research involves understanding the existing teacher career and compensation structures in order to help policymakers in developing countries design incentive systems that will attract, retain, develop and motivate qualified teachers. For instance, the World Bank is currently assisting the Government of Vietnam in improving the quality of the primary teacher training and teacher evaluation systems. Jointly with colleagues in operations, we will conduct an analysis of the existing system of teacher evaluation, career, and compensation and will help improve where necessary, the design of teacher incentive schemes. Similarly, we will work with operational colleagues in Egypt to design reforms to address teacher incentive structures. In these and other related cases, we plan to collect ex ante baseline data in the period prior to the reforms, and to participate in the design of the reforms. We expect that some reforms will be experimental, including the random assignment of incentive innovations to groups of schools or school districts with follow-up observations on the effect of the reforms on teacher quality and/or student outcomes. To do this we plan to collect and analyze a new round of data.

In brief, the two components involve in-depth, quasi-experimental and experimental evaluations of teacher incentive reforms in Latin America (Bolivia, Brazil, Chile, Mexico and Nicaragua), Vietnam, and Egypt. Subsequently, more country cases may be included. The goal is to compare the findings across countries and learn lessons with wide applicability.

The third component is a prospective randomized comparative evaluation of several different methods of providing incentives for teachers in western Kenya. In this rural area, primary school teachers are found to be absent during 20 percent of surprise visits, while preschool teachers are absent 30 percent of the time. The project will examine a preschool teacher attendance bonus with either headmaster or parent monitoring; payments to preschool teachers based on pupil attendance with central monitoring; and payments to upper primary school teachers based on centrally measured student test scores. Many schools in the area create incentives for teacher attendance through lunch programs for staff. The impact of these automatic attendance incentives for teachers will also be examined.

4.3 Impact evaluation of educational interventions in Kenya

The MDGs call for universal basic education and the elimination of gender disparities at all education levels by 2015. The cost of schooling faced by households is thought to be a barrier to meeting these goals, and incentives for poor families to devote resources to schooling may be weak. This study, implemented in Kenya, focuses on how to extend education to underserved populations and improve its quality by using the following strategies:

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24 The team includes Harold Alderman (DRG), Edward Miguel (UC Berkeley), and Michael Kremer (Harvard).
• Providing additional services which are of immediate value to children and parents, such as school feeding, alongside the educational service, to encourage participation,
• Decreasing the cost of attending school, and
• Providing incentives for students to perform well.

A more rigorous understanding of the effect of these interventions can inform educational policies in developing countries and guide the design of aid interventions (to maximize their effectiveness).

We have a unique opportunity to evaluate the effect of several education programs, because an established NGO working in western Kenya has randomized the implementation order of several educational interventions. Such opportunities are rare since it is not politically feasible for central governments to implement large-scale programs in a randomized manner. Moreover, the NGO has covered all of the input costs, and this research only requires funding for evaluation.

**Increasing school enrollment and attendance: School-feeding programs**

Early childhood development programs have been widely touted as an efficient way to improve the educational outcomes of children, especially for disadvantaged populations. Participation in early childhood education programs can increase school readiness, lower enrollment age and increase enrollment rates into primary school, decrease grade repetition and dropout rates, and improve academic achievement.

A major problem in the delivery of early childhood programs, however, is providing incentives for parents to send their young children to school and to make sure they attend regularly. Attendance by young children is usually sporadic, especially if user fees are charged to parents. One way of increasing attendance is to provide a school-feeding program.

Research on school feeding programs focused primarily on health and nutritional outcomes has concluded that feeding programs are not particularly cost-effective since they create a crowding-out effect—parents respond by feeding their children less at home. These studies, however, have generally not taken into account the school attendance benefits of school feeding programs. Our research will focus on the effect of the program on school attendance and scholastic achievement. We will also note any health effects by conducting anthropometric testing. In order to measure the cumulative effect on academic performance, we will administer achievement tests to the students. An improvement in academic performance may be partially the result of children attending school more, due to increased incentives, and partially the result of an increase in cognitive ability, from better early childhood nutrition. Another possible effect

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25 The Dutch NGO Internationaal Christelijk Steunfonds (ICS) has been working in this region since 1994, providing funding to local communities for health, education, and agricultural programs. The data will be collected by the local ICS office, which has been conducting randomized evaluations of primary school interventions since 1995.
of increasing preschool participation is that if young children no longer require home childcare, it may free their older siblings, especially their sisters, to attend primary school.

Preliminary analysis of baseline data collected in 2000 suggests that school participation increased by approximately 30 percent. The future research will seek to confirm this and look at how the program translates into increased scholastic achievement. We will also analyze the impact of the program on older siblings’ primary school attendance rates.

**Reducing the cost of education: The child sponsorship program**

Many low-income countries levy substantial user fees for education believing that such user fees enabled them to provide social services and encourage local monitoring. Now that some countries have abolished user fees and experienced a simultaneous increase in school enrollments, it is now argued that user fees are responsible for keeping many out of school and should be removed. Since many other factors that could affect enrollment were changing at the same time, the specific impact of user fees can be determined by performing a rigorous, micro-level study, with randomized assignment to treatment and comparison groups.

We will conduct such an evaluation in Kenya, where the costs of attending school are significant for poor rural families. In Kenya, all of the school’s on-site costs (building construction, maintenance, furniture, textbooks, and supplies) must be covered by parent contributions in the form of school fees. The central government finances only teachers’ salaries and educational administrators. Typically primary school fees in rural areas are about 6 USD per family per year. Moreover, all students must have a uniform, which costs parents about 6 USD.26

**Reducing girls’ dropout rates**

In many developing countries, girls receive much less primary education than boys. Randomized interventions will demonstrate the elasticity of girls’ schooling and inform us about how public policy can best increase girls’ schooling. This program gives scholarships to all girls in grades 6, 7 and 8 in 75 treatment schools. Another group of 75 schools will be used for comparison, and schools would be randomly assigned to one of the two groups. These scholarships would cover the costs of schooling, including school fees, uniforms, and other materials. We will collect data on pregnancy rates, dropout rates, school attendance, test scores, and grade progression, to assess the effects of eliminating school costs for girls in the upper primary grades, who have very high dropout rates.

**Merit-based scholarships for girls**

One of the key inputs in education is student effort and motivation. Merit-based scholarships for students have historically provided an incentive for students to perform well

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26 The government of Kenya has recently announced the abolition of school fees. However, they have not indicated where funding for non-teacher inputs will come from. In past election years, school fees were abolished, but then quickly reappeared.
academically and for teachers to find innovative ways to improve their students’ learning. The availability of such scholarships may prompt parents to urge their children and teachers to strive for academic excellence.

Current education policy often involves such issues. The Bank partially funded the PACES program in Colombia, which provided private school vouchers to students from poor neighborhoods conditional on passing all grades. Voucher recipients were about 10 percentage points more likely to finish 8th grade. While this program was very successful, it is not clear how much of the success was due to school choice or how much was due to the increased incentives to perform well enough to qualify for grade promotion. Similarly, the PROGRESA program in Mexico, which has generated a lot of attention, provides subsidies to families if their children attend school between third grade of primary and third grade of secondary school. Since the size of the grant increases as students reach higher grades, students have incentives to perform well. By analyzing a program where merit-based scholarships are implemented in isolation, we can accurately assess their effect.

We will examine the impact of merit-based scholarships on test scores, student attendance, grade progression, dropout rates, and teacher behavior. The program is targeted to poor, rural schools, ensuring that funds go to the most needy areas. The schools benefiting from the program will be 64 primary schools in Busia and Teso, districts in Western Kenya. Outcomes in treatment schools will be compared with those in a control group of 64 schools. Selection of treatment schools is randomized.

5. Outputs, staffing, timing

Outputs emerging from the research program over the next two and one-half years (FY03-FY05) will include the following:

- **Capacity building.** Delivery of training workshops in survey design, experiment design, enumeration techniques and data analysis. All surveys will be carried out by in-country researchers and consultants, and in-country research institutions will be involved in data analysis and research activities.

- **Website dissemination.** Concept papers, survey instruments, enumeration manuals, and reports and research outputs will be posted on the Public Services Research website http://econ.worldbank.org/programs/public_services/topic/tools/.

- **Data sets.** High-quality data sets from school and clinic surveys will be made publicly available in ways that protect the confidentiality of the schools and clinics.

- **Policy summaries.** A non-technical summary of each survey and experiment and their key findings will be prepared for policymakers in collaboration with in-country researchers and the Bank’s operational staff.

- **Research papers.** Research papers will deal with new ways of measuring the efficacy of public spending at the frontline and evaluating performance of service delivery in developing countries, with a focus on complex motivations of staff, multiple
stakeholders and outputs of varying measurability, multiple delivery systems, and user differentiation.

- **Workshops and conferences.** Workshops will be given in each survey country and Region, and the results will be presented at international conferences (academic and other).

**Bibliography**

The word “processed” describes informally reproduced works that may not be commonly available through library systems.


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