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Performance Based Reimbursement to Improve Impact:

Evidence from Haiti

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November 2000

HS-2004

This publication was produced as part of the LAC Health Sector Reform Initiative by the Family Planning Management Development Project (FPMD), a project of Management Sciences for Health (MSH) in Boston Massachusetts.

Funding for this publication was provided by the U.S. Agency for International Development under cooperative agreement number: CCP-A-00-95-00000-02.

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INTRODUCTION

Holding health institutions accountable for results by tying reimbursement to achievement of explicitly defined indicators is one strategy that can be used to improve health system performance. In Haiti, USAID introduced a performance based reimbursement mechanism to pay NGOs. Rather than the previous system that reimbursed NGOs for documented costs, performance increase targets were established and a portion of the historically funded budget received by NGOs was withheld. NGOs had the opportunity to earn back the withheld amount plus an additional bonus if performance targets were reached. Presented here are results of a pilot study that involved three NGOs over a one-year period. Marked improvements in immunization coverage combined with organizational change are among the important successes of the experience. Strong performance increases motivated by the financial incentives in the payment scheme caused USAID to decide to adopt performance based reimbursement as the primary payment strategy for NGOs in Haiti. This successful model has the potential to be adopted by public payers, donors, and private payers that want to improve the impact of their funds.

WHY CONSIDER PERFORMANCE BASED REIMBURSEMENT IN DEVELOPING COUNTRIES?

Payers of health care services in developing countries have not typically required provider institutions to guarantee performance. This lack of accountability has contributed to poor health system performance across measures such as improved access, levels of production, quality, and efficiency. Public payers typically fund public institutions driven by the principle of maintaining installed capacity (paying salaries and recurrent costs), rather than by ensuring that quality services are actually received by consumers. There is also little evidence that public contracting for services from the private sector includes conditions that hold nonprofit and for profit providers accountable for performance. Donors have tended to adopt similar practices to those of public payers, either providing lump sum grants or reimbursing public providers and NGOs for documented expenditures. Consumers, also important payers, especially for ambulatory care services and drugs, lack the knowledge or purchasing power to hold providers accountable for delivering quality care. The result is that provider organizations tend to devote energy to securing funds rather than on improving efficiency or the quality of care.

The application of performance based reimbursement schemes to developing country health care institutions is motivated by principal- agent theory from the field of economics (Grossman and Hart (83), Kreps (90), Rogerson (85)). The payer is the *principal* who in health care systems can be the government, donors, or a private payer such as an insurance company. The principal purchases services from an *agent* that is a health care providing institution. Because the principal cannot perfectly monitor the activities of the agent it has less than perfect information about what it is actually purchasing. There may be questions about issues such as whether the agent is providing adequate quality services, whether the target population is actually being served, or whether funds are being used efficiently. Because intensive monitoring is prohibitively costly, another option is to design a contract that provides incentives to the agent to perform the way the principal would like because it is in the agent's best interest to do so. Performance based reimbursement establishes explicit indicators of performance that are valued by the principal and provides financial incentives to agents for achieving defined performance targets. In contrast to predominant payment schemes in developing countries, performance based reimbursement can be used to alter incentives so that institutions focus on results such as improving immunization coverage or increasing knowledge of ORS.

Performance based reimbursement can influence organizational culture. As the payment mechanism emphasizes demonstrating results, health providing institutions are motivated to examine the way they structure and organize care, the way they motivate and supervise staff, and the way resources are utilized. Health institutions are inspired by the change in payment policy to find innovative ways to achieve the results they are rewarded for. The incentive to achieve results has the potential to transform managers and staff into strategic problem solvers focussed on improving quality of care and efficiency. This transformation motivated by the change in the reimbursement system directly contributes to ensuring the sustainability of provider organizations

The new responsibilities assumed by payers and the new capabilities required also engender a transformation of payer organizations. Payers must have the capacity to establish and measure performance indicators and implement new contracting processes. Perhaps most challenging is a change in role from passive payer or auditor to active partner. In addition to establishing new payment mechanism rules, payers may choose to help recipient institutions to attain performance improvements. This may involve providing technical assistance or facilitating the establishment of provider networks so that institutions can learn from each other.

SELECTIVE EXPERIENCE WITH PERFORMANCE BASED REIMBURSEMENT IN THE U.S. AND LATIN AMERICA

As governments consider contracting for health services from the private sector as a viable alternative to public provision, there is growing interest in the relative merits of various contracting mechanisms. The authors have identified several papers that analyze contracting mechanisms between the public and private sectors in the LAC region, though none have identified payment mechanisms that tie payment to performance. Abramson (1999) examined case studies in five countries (Colombia, Cost Rica, Guatemala, Peru, and Dominican Republic) and found that none of the cases included performance indicators as part of the terms of contracts (discussion with author). Slack and Savedoff (2000) grouped 28 public-private contracts from 14 countries in the region into categories that did not include performance-based reimbursement.

The European Community is financing a study of research on human resources in the health sector titled "Managing Staff Performance in Reforming Health Systems", that is being implemented by the Liverpool Consortium. Studies of existing initiatives in developed and developing countries (including Nicaragua from LAC) will inform design of pilot studies to be implemented in four African countries. Performance based reimbursement may form part of the design of pilot studies. Design and results are not yet available.

In Mexico, IMSS (Mexican Social Security Institute) is in the process of designing a pilot scheme that incorporates monetary incentives based on achievement of performance indicators for family physicians and personnel who work in IMSS ambulatory care clinics (Perez-Cuevas 1999). Performance indicators include health prevention activities such as: cervical cancer screening coverage, immunization coverage, family planning, prenatal care, and appropriate antibiotic prescribing for ARI. Measures of institutional quality will also be tied to performance payment such as: absenteeism, maintenance of equipment and facilities and average waiting time. The details of the design, implementation, and results are not yet available.

In Nicaragua, performance based payment is being implemented in the public sector that rewards teams for achievement of performance targets (La Forgia and Cercone 2000). This scheme was designed to promote a culture of quality and efficiency and to increase user satisfaction by rewarding results with remuneration. Categories of evaluation have been implemented that include: production of services and utilization, technical quality, user satisfaction, and coverage at the primary health care level. Members of each team receive a salary plus the team receives a monetary bonus if performance targets are reached. The team decides how to divide the bonus among members. This team bonus system has the advantage of encouraging collaboration and collective innovation and has the potential to reduce shirking and stealing. Results are not yet available.

Other countries in the region are considering using performance-based reimbursement in the public sector. In El Salvador, the Ministry of Health is discussing the introduction of management contracts between the central ministry and regional level health networks that would hold the regional level accountable for performance. The Ministry of Health in Colombia is discussing using models of performance based reimbursement to reduce the supply subsidy received by public hospitals and transform payment so it coincides with performance results and demand. The Ministry of Health in Guatemala intends to introduce performance based contracting into its contracting process between the public sector and NGOs that deliver health services in under-served areas.

Strategies used by employer purchasing alliances in the United States formed part of the inspiration for the design of the performance based reimbursement scheme introduced in Haiti and can contribute to informing policy in both developed and developing countries. Dissatisfaction with uncertain quality and rising health insurance premiums has prompted groups of employers in some regions of the U.S. to form purchasing coalitions to increase purchasing power and to hold health plans accountable for performance. As the primary purchasers of health insurance coverage for the working population and their families, employers are a powerful force in the U.S. health market. Employers' desire to control the costs of insurance premiums stimulated the development of a number of health system innovations in the U.S. such as managed care and associated strategies such as disease management and pharmacy benefits management. In the second half of the 1990's some employer groups have shifted their focus from controlling expenditures to emphasizing *value* for money (Meyer et al. 1997). The mechanisms they are using to stimulate better value are part of a new wave of innovations coming from the U.S. health market. Purchasers of health services in developing countries can apply lessons learned from these US experiences to design and implement performance based purchasing.

The Pacific Business Group on Health (PBGH), a negotiating alliance of seventeen large employers in California, put more than $8 million at risk for achieving improvements in performance measured by satisfaction with health plans and physicians and achievement of health targets such as prenatal care and childhood immunizations (Schauffler et al 1999). In 1996, 13 of California's largest HMOs that had contracts with PBGH employers agreed to place two percent of their annual premiums at risk. If negotiated improvements in performance indicators were achieved, the HMO earned the withheld funds. If targets were not achieved, employers kept withheld funds. The six indicators that addressed quality of care included cesarean sections, childhood immunizations, cervical cancer screening, diabetic retinal exams, mammography screening, and prenatal care. Additional indicators addressed member satisfaction and customer service. Performance varied widely among the 13 HMOs. Most exceeded targets on member satisfaction, cesarean sections, and diabetic retinal exams. Performance on childhood immunizations, mammograms, and cervical cancer screenings was more uneven. HMO management responded to the portion of the withheld premium that had to be returned by increasing focus on data collection and monitoring and by introducing initiatives to ensure that future targets are reached.

The USAID Consultative Group on Performance Improvement has developed a framework for Performance Improvement that outlines clear steps from definition of desired performance, to defining the root causes of poor performance, to selecting and implementing interventions to improve performance (USAID PICG 2000). The participation of key stakeholders in problem identification, choosing solutions, and monitoring and evaluating impact is considered critical. Using financial incentives to motivate performance combined with the collaboration of participating NGOs fits squarely inside this model.

CASE STUDY: HAITI HEALTH SYSTEMS 2004 PROJECT

BACKGROUND

The Haiti Health Systems 2004 Project (HS-2004) was awarded by USAID to MSH in October 1995 to help strengthen the health delivery system in Haiti with the goal of working toward providing the population with access to high quality services that will be able to be sustained by local technical and financial resources in the future. The basic package financed by USAID includes maternal and child health, reproductive health and family planning. HS-2004 began in 1995 during a difficult time in Haiti's history. Immediate needs required that the project develop rapid mechanisms to fund NGOs to enable them to continue to provide critical basic health services to Haiti's population. Initially, funding was "input-based" or based on a system that reimbursed NGOs for documented expenditures up to a ceiling that was, in essence, a negotiated budget. The vision of the project was to phase in a model of funding that was "output based", or funding services (outputs) that are produced by NGOs, by the end of a five year period. Rather than reimbursing NGOs for their costs, or "inputs", this process would finance NGOs based on the outputs they actually produce for the population. The challenge was to develop a system that moves toward attainment of project and health system goals without imposing excessively burdensome monitoring and reporting requirements.

The HS-2004 project provided USAID funding to 23 NGOs during the five-year period beginning in 1995. For the five year period beginning in 2000, the number of NGOs funded by the project will increase to at least 33**.** Under input based financing, each year NGOs submit a proposed budget and a plan that indicates how they intend to ensure that delivery of a basic package of services is provided. Each month, NGOs are required to submit cost reports in order to receive reimbursement based on reported expenditures. Cost-based reimbursement requires monthly reports and detailed documentation of expenditures by NGOs. The payer, HS-2004, must maintain systems and staff that verifies reported expenditures and reimburses based on monthly submissions.

Cost based reimbursement has the following problems:

- Because NGOs are reimbursed for all reported costs, they face weak incentives to become more efficient.
- Weak incentives to become more efficient can be translated into weak incentives to improve management and operations.
- Since payment is not tied to results, cost based reimbursement contains weak incentives to expand coverage of services.
- The lack of results orientation also implies weak incentives to improve clinical quality and quality as perceived by consumers.

A population based survey performed in 1997 found wide ranges in the performance of indicators established by the HS-2004 project. For example:

- Some NGOs achieved contraceptive prevalence rates of 25%, while others achieved less than 7%.
- Some NGOs succeeded in providing a minimum of 2 prenatal visits to 43% of pregnant women in their regions, while others only reached 21% of this important target group.
- One NGO succeeded in ensuring that a trained attendant attended 87% of births, while a worse performing NGO only succeeded in attending 53%.
- Vaccination coverage varied widely with the worse performer only reaching 7% of the target population and a good performer reached 70%.

- One NGO made sure that 80% of women knew how to prepare ORT, while another only educated 44%.

This wide range in a sample of indicators is in no way correlated with costs incurred per visit[1]. Some NGOs with high estimated average costs per visit were relatively poor performers, while other low cost NGOs achieved more impressive performance targets. While it is clear that conditions differ among regions of Haiti, it is not likely that wide differences can be explained by conditions that are completely outside of the control of health care providers. It is also clear that an NGO with high average costs per visit and poor performance indicators is not efficient.

While funding actual delivered services would represent an improvement over funding installed capacity, in 1999 HS-2004 decided to push the envelope even further than was envisioned under the output-based funding model by testing an innovative approach that based payment on results. In order to develop the capacity of NGOs to succeed under a performance-based funding environment, assistance to strengthen institutional capacity was provided in areas such as financial management, strategic planning, human resources management, patient flow, and drug and commodities management. Indicators of performance were measured and targets established to facilitate transformation towards a results oriented system.

The primary objective of a performance based financing model is efficient delivery of quality services. The primary strategy is to provide incentives for NGOs to deliver high quality services in a way that uses resources most efficiently. To increase coverage of the population for essential services and to ensure that quality is adequate, indicators of coverage and quality are needed. Financial incentives are designed to encourage innovation and efficient utilization of resources. Rather than burdensome monthly submissions of expenditures, NGOs are paid a monthly sum. At the end of a defined period, performance indicators are measured and the magnitude of the bonus is determined. This form of payment enables NGOs to utilize resources efficiently while focussing on implementing systems of management and staff motivation that are effective at achieving results. The payer must establish contracting, monitoring, and evaluation systems. NGOs that receive funds through HS-2004 are sub-contractors, not grantees, which implies that they have agreed to the terms and conditions in the contract.

Improving institutional sustainability is one of the primary goals of HS-2004. To facilitate learning and sharing among Haitian NGOs, HS-2004 facilitated creation of a network of local NGOs. Regular meetings encourage sharing of strategies that both succeed and fail in the challenging Haitian environment. The network effect enables NGOS to support each other (south-south collaboration).

Performance based reimbursement has the following advantages:

- Because NGOs assume financial risk for achieving improvements in performance, they face strong incentives to improve management, motivate staff, and to innovate.
- Because payment is based on achievement of results, NGOs face incentives to use resources efficiently and effectively.

HS-2004 assumes the role of active purchaser of services for the population. As an intermediary and active purchaser, HS-2004 serves the interests of the Haitian population by helping to ensure that accessible and adequate quality services are provided. This role is not unlike the role of an employer who purchases health insurance for employees in the US and wants to ensure that high value services are purchased for health care dollars. This role is also similar to a US State Medicaid agency that purchases care for the poor or the US Health Care Financing Administration that manages the Medicare program for

[1] rough estimates of average costs per visit range from $1.35 to $51.93.

the elderly. In recent years, all of these "purchasers" are in the process of being transformed from passive payers merely reimbursing providers to active purchasers that drive changes in the health care market. Increasing the efficiency of health care providing NGOs will help to increase the availability of additional services as resources are freed from inefficient uses and are channeled to produce additional services. This active purchaser role has the potential to be transferred to the Government of Haiti or other payers in the future.

In 1999, three NGOs participated in a pilot study that changed the terms of their payment from cost-based reimbursement to performance based payment. The results were encouraging enough to cause USAID to recommend phasing in performance based payment to all NGOs in the Haitian network. The design, implementation, and results of the pilot will be presented.

DESIGN OF PERFORMANCE BASED REIMBURSEMENT IN HAITI

Because it was perceived to be important that the NGOs viewed the payment change as advantageous, HS-2004 adopted a collaborative rather than adversarial approach to design, negotiations, and implementation. NGOs that were viewed as having the leadership and organizational capacity to respond to the new system were invited to participate in meetings where they were encouraged to provide feedback and to express their views about participation in the pilot. Because these meetings occurred after NGOs had already signed contracts with USAID for the 1999 fiscal year (10/98- 9/99), NGOs would only be willing to re-negotiate contracts if they believed that a new contract might have the potential to make them better off than the current contract. One outcome of the collaborative meetings was agreement on a model that imposed some financial risk but offered the possibility of earning funds that exceeded the already signed USAID contract amounts.

The three NGOs chosen to participate in the pilot were: Centres Pour Le Developpment et la Sante, CDS; Comite Bienfaisance de Pignon, CBP; and Save the Children. Together, these NGOs serve approximately 534,000 people.

Participating NGOs agreed to accept a new contract that would pay 95% of the budget established under the existing input based financing contract. In addition, NGOs had the possibility of earning a bonus that could equal as much as 10% of the historically established budget. This implies that the NGOs were assuming the financial risk associated with the possibility that they might not attain performance targets and lose the 5% of the budget they would have received under the original contract. NGOs were willing to assume this risk because they also faced the possibility of earning an additional amount equivalent to 5% of the historical budget.

Payment under performance based financing:

Let H= historical budget under input based financing
Let P= actual funds received under performance based financing

Then: $[.95H \leq P \leq 1.05H]$

Seven performance indicators were determined and achievement of the target increase in each indicator was associated with a defined percentage of the total bonus. Five indicators were aimed at improving health impact, one was aimed at increasing consumer satisfaction by reducing waiting time, and one aimed to improve intersectoral coordination and community collaboration. Each NGO separately negotiated performance targets for each indicator. Table 1 presents the indicators and the relative weights associated with full achievement of each target.

Table 1:
Performance Indicators and Relative Weights

Indicator	**Relative weight**
Percentage of women using ORT to treat cases of children with diarrhea	.1H
Full vaccination coverage for children 12-23 months	.2H
At least 3 prenatal visits	.1H
Reduction in the level of discontinuation rate for injectable and oral contraceptives	.2H
Number of institutional service delivery points with at least 4 modern methods of family planning and number of outreach points with at least 3 or more modern methods	.2H
Reduction in average duration of waiting time before providing attention to a child (in hours and minutes from arrival to beginning of attention).	.1H
Participation in Local Health Organizing Committee (UCS) and coordination with the Ministry of Health	.1H

Since part of the motivation for the performance based reimbursement scheme is to improve the institutional sustainability of health providing NGOs, technical assistance was provided to improve organizational capacity. Participating NGOs received technical assistance to review and reconsider their pricing policies and to develop a plan to generate revenue through non-health service sources. Intensive assistance was provided to help NGOs identify unit costs, revenues, and staff utilization by implementing CORE (Management Sciences for Health, 1999), a cost and revenue analysis tool. The goal of CORE was to promote a culture of information based decision making by providing managers with the information necessary to make management decisions to improve efficiency.

To ensure that performance indicators accurately represented performance in each NGO's service area, HS-2004 contracted an independent survey research firm, l'Institut Haitien de l'Enfance (IHE) to measure baseline and end of pilot performance indicators. The NGOs agreed that there would be incentive problems associated with having the NGOs self report their performance measures. Since payment is tied to achievement of performance, the incentive would be to inflate performance to secure the bonus. The independent survey research firm was viewed as incentive neutral.

IHE followed the standard cluster sampling methodology recommended by WHO (WHO 91) to sample households in each of the NGOs service areas to establish baseline measures and results for the number of immunized children. Both immunization cards and reports from caretakers were included. The percentage of women using ORS to treat diarrhea was determined by exit interviews in service delivery institutions with women who brought children to the clinic for reasons other than diarrhea. Coverage of pregnant women with three or more prenatal visits was determined through a review of a sample of medical records. Discontinuation rate for oral contraceptives and injectables was determined by review of family planning registers to identify women who had discontinued use, had not chose another modern method, and had not indicated definitive desire to have a child. Average duration of waiting time was determined by measuring waiting times in a sample of institutions at different intervals of time.

Since there has not been a census in Haiti, total population in each service area was estimated by multiplying the 1982 population by the estimated national population growth rate. This figure is very imperfect because of population mobility and urbanization. These estimated population figures for each NGO form the denominator.

RESULTS

NGOs expressed support for continuation of performance based reimbursement. The shift from justifying expenditures to focussing on results inspired each organization to question whether their models of service delivery had the best impact on population health and to experiment with changes. They strongly endorsed the expanded managerial and budgeting flexibility and the increased motivation of staff due to the prospect of their organization receiving a bonus. Participants also noted increased attention on the part of staff to their organization's objectives, and a spirit of innovation regarding how to achieve those goals. For instance, some reported greater efforts at involving the community in trying to reach health goals. The need for good data and information to make management decisions was emphasized by all. Over the course of the pilot, modifications were made and lessons learned were shared among the NGO pilot group.

In order to achieve the performance targets, NGOs realized that they needed a strategy to motivate staff to focus on the results that the organization was being held accountable to achieve. Two of the three participating NGOs designed and implemented bonus schemes for staff. One NGO implemented a bonus scheme for local organizations that they collaborate with in the field. Another NGO implemented a bonus scheme for community health agents, cutting their salary in half and reserving the rest for bonuses tied to performance. After poor results from transferring this degree of risk to relatively low paid staff, they increased the fixed proportion of payment and reduced the proportion of payment from bonuses. This NGO reported that the existence of some bonus payment tied to performance was motivating and improved results. All NGOs discussed allocating a proportion of the institutional bonus, if earned, to clinics in their networks on the basis of their relative performance against indicators.

Table 2 presents baseline measures, targets, and actual results for each participating NGO. The most striking results came from the increase in immunization coverage. Each participating NGO exceeded the performance targets for immunization coverage substantially. Of the estimated 19,277 children under age one in the NGO service areas, 14,452 were immunized as a result of the performance based reimbursement pilot. This represents an increase of 6,143 children in Haiti that have been immunized in the pilot year as a result of the performance based payment scheme. In two of the three NGO service areas, the proportion of mothers who reported using ORT increased. In two out of three NGO service areas the proportion of mothers who reported using ORT did so correctly also increased significantly. Performance in prenatal visits and reducing the discontinuation rate of oral contraceptives and injectables was relatively weak. The availability of modern contraceptive methods increased substantially.

Changes introduced by performance based reimbursement motivated NGOs to request assistance in a number of key areas that would strengthen and improve the sustainability of their institutions. Requested areas of technical assistance included strategic planning, strategic pricing, cost and revenue analysis, determining client perceptions of the quality of service, models of staff organization and utilization, and human resources management.

Table 2:
Results from Performance Based Reimbursement Pilot in Haiti

		NGO 1			NGO 2			NGO 3	
Indicator	**Baseline 9/99**	**Target**	**Results 4/00**	**Baseline 9/99**	**Target**	**Results 4/00**	**Baseline 9/99**	**Target**	**Results 4/00**
Immunization coverage	40	44	79	49	54	69	35	38	73
3+ prenatal	32	38	36	49	59	44	18	21	16
FP discontinuation	32	24	43	43	32	30	26	20	12
Utilization of ORT	43	50	47	56	64	50	56	64	86
Correct utilization of ORT	71	80	81	53	59	26	61	67	74
Institutions with 4+ modern FP	6	9	9	2	5	5	0	5	5

The indicator that measured waiting time was not judged to be a valid indicator of quality and was dropped from the scheme. Because people would travel long distances to obtain lab tests, they would choose to wait as long as an entire day for results rather than to return home and have to travel a long distance back. The relatively long average waiting time at one NGO was caused by waiting for lab tests and was viewed by the population as an indicator of quality, not as an indicator of poor service. A new indicator of client satisfaction is being developed for the next phase.

The bonus associated with the indicator that measured community participation and collaboration with the Ministry of Health was given to all NGOs. While all NGOs agreed that community participation and collaboration was important, a measurable and verifiable indicator was difficult to determine.

Increases in immunization coverage and availability of modern family planning methods were easier to achieve than reducing the discontinuation rate or ensuring adequate prenatal care. NGOs recognized that new models of education and care were needed to achieve these important targets. The focus on results has forced NGO management to recognize that they are not achieving the goals that are stated in their organizations' mission statement. This realization has inspired NGOs to seek more effective approaches to delivering the care and reaching their target populations.

All of the NGOs that participated in the pilot received more revenue than they would have received under the previous input based financing scheme. Table 3 presents the results that shows that performance was strong but none of the NGOs achieved all performance increases.

Table 3:
Attained Bonuses

	Bonus attained*
NGO 1	90%
NGO 2	70%
NGO 3	80%

* If actual performance was within one confidence interval, the NGO was awarded the bonus for that indicator.

THE FUTURE

HS2004 will gradually incorporate additional NGOs into the performance based payment system each year. The model and methods of reimbursement and institutional support will be refined as more experience is gained and more evidence on what works is compiled. During the 2001 project fiscal year (10/00-9/01) four additional NGOs have been included. Currently, a model is being considered for the 2002 fiscal year that will reduce the portion of payment driven by historical budgets and will phase in capitation payments combined with rewards for results.

The results indicate that performance-based reimbursement is a powerful way to hold NGOs accountable for achieving results. The challenge is to define indicators that are meaningful in terms of health impact, consumer satisfaction, and institutional sustainability and to measure and monitor the indicators in a manner that is not prohibitively costly. Through open collaboration and cooperation between HS2004 staff and participating NGOs, new indicators will be defined and improved processes for measurement and validation developed.

Countries considering implementation of performance based reimbursement should not under-estimate the changes that will be required of both the health care providing institutions and the paying institutions. Changes in systems will accompany changes in organizational culture in both provider organizations and payers. While these changes have the potential to be positive in the long run, adjustment costs should not be under-estimated.

As the application of performance based reimbursement to health is relatively new, much remains to be learned about design and implementation. Future research is needed on design and implementation of performance based reimbursement schemes. Research is also needed to better understand the range of effective actions that can be taken by health providing institutions to achieve performance improvements.

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