10

Rwanda: Performance-Based Financing in the Public Sector

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Highlights

Countrywide implementation demonstrates that a national performance-based financing approach with both the public and private nonprofit health facilities is feasible in low-income countries.

Incentives reward both quantity and quality of curative, maternal and child health, and HIV/AIDS services.

Donor-funded pilots provided the evidence for the government of Rwanda to implement performance incentives as well as a menu of options that informed the design of a unified national model.

Rwanda is one of the pioneers of performance-based financing. Building on lessons from three donor-financed pilots, the government has assumed leadership for this approach and is scaling up a standardized model nationwide.

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Performance-based financing is one of several strategies introduced to strengthen what was considered, according to the 2000 *World Health Report* rankings, one of the weakest health care systems in the world.

Between 1994 and 1996, following the war and genocide, user fees were abolished and then, in 1998, reintroduced. Use of health services subsequently hit bottom. The traditional approach of funding inputs (such as equipment, training, and drugs) did not generate good results. Providers were paid according to civil service rates, and accountability mechanisms were either weak or nonexistent. The need to motivate and empower providers to produce better outcomes was critical. The pay-for-performance approach—*approche contractuelle,* as it is called in Rwanda—provided such an opportunity by financing results rather than inputs.

Although the scope and scale of the initial pilots were relatively modest, they nonetheless provided important information about details of design and implementation that informed the national scale-up. Participating health facilities received financial payments for incremental increases in the quantity of basic health services provided, such as immunization, prenatal care, and assisted deliveries. The overriding goal was to improve the use of health services by motivating providers. The goal of improving the quality of care was introduced more systematically only later. These schemes were applied to both public and private nonprofit health facilities administered by religious groups.

Based on lessons from these initial pilots, the government adopted a performance-based approach as a national policy in 2005. Its scale-up plan to reach national coverage was promptly launched, with a targeted completion date of May 2008. Mechanisms and instruments for the scale-up were put in place, along with an impact evaluation to strengthen the base of evidence for the approach.

At the same time, other health policy reforms were also being implemented to increase the use of key services by reducing demand-side barriers. To improve maternal health, women who participate in regular antenatal clinics receive free institutional deliveries. To protect against the financial risk imposed by health expenses and to encourage routine use of health services, community-based health insurance schemes (*mutuelles*) have been scaled up nationwide. This risk-pooling mechanism has contributed to higher use of primary health services for the insured and facilitated access to health services for the poor by subsidizing the premiums of needy households. At the same time, these demand-side interventions make it difficult to untangle the effects of the performance-based schemes that are aimed at motivating providers. However, evidence from the schemes does suggest that

the performance-based approach offers the opportunity to achieve substantial results quickly in the delivery of health services, although the data reported do not control for the impact of demand-side policy interventions. A further potential bias could lie with the Imihigo performance contracts, between the president of the republic and mayors, which started in 2006 and include indicators related to the delivery of key services (for example, family planning, institutional deliveries, and access to community insurance schemes).

The Rwanda experience is unique because it represents a bold attempt to institutionalize an innovative approach, involves incentive payments for both basic health and communicable diseases, and entails a rigorous evaluation of impact.

Background

Rwanda is among the poorest countries in the world—the average Rwandan lives on less than $0.70 per day (U.S. dollars)—with a typical epidemiological profile for Sub-Saharan Africa. Although the genocide and war had a detrimental impact on health indicators, Rwanda is now slowly getting back on track in terms of the Millennium Development Goals, with good progress on lowering infant and under-five mortality. Nevertheless, malnutrition remains serious (45 percent of children under five are chronically malnourished), fertility rates are high (the total fertility rate is 6.1 percent), and maternal mortality is about 750 deaths per 100,000 live births (Haub 2006). The HIV adult prevalence rate is about 3 percent overall and 3.6 percent for women.

Per capita annual total health spending averages about $34, with donors funding more than 40 percent, government funding about one-third, and beneficiaries funding roughly one-quarter (World Health Organization 2003). In recent years, coverage with cost-effective interventions has improved somewhat. Coverage, however, remains generally inadequate, with large gaps between the poor and the nonpoor. The country has seen a rapid expansion in access to community health insurance, with government and donors subsidizing access to the poorest 25 percent of Rwandans in an effort to reduce inequities in access and health outcomes.

The 1994 genocide and war resulted in a massive loss of health professionals, destruction of health infrastructure, and general impoverishment of the population. In its immediate aftermath, Rwanda benefited from a substantial amount of external assistance that was used primarily to rebuild the country's physical infrastructure. By early 2000, donor support started to decline, and focus shifted from

reconstruction to development assistance. The majority of health facilities in the country historically relied on revenues from user fees to finance their activities. The reintroduction of fees, following their abolishment after the genocide, imposed a burden on the population, and the country experienced a dramatic drop in the use of health services.

Exacerbating demand-side barriers to accessing care were weak incentives for service providers to reach the population. Salaries were fixed and very low and had no links to performance. To encourage health workers to serve in remote areas, some employees did receive salary top-ups, but they were not linked to performance. There were differences in pay and working conditions between the public and nonprofit sectors, causing physicians who were in short supply to migrate to the nonprofit sector, where salaries were somewhat higher. Salaries for other personnel were similar to what was offered in the public sector, but religious groups appeared to retain staff more effectively by inspiring loyalty or providing access to particular financial incentives, such as access to interest-free loans. Further perverse effects were created through funding based on inputs that resulted in greater resources for facilities with more staff, irrespective of performance.

The initial pay-for-performance schemes in the former provinces of Cyangugu and Butare were designed in this postconflict environment, which was characterized by low use, poor coverage, and inadequate incentives. Their main goal was to increase use by modifying the behavior of health providers through payment of incentives for a set of predetermined services.

Several factors facilitated the start-up in the pilot provinces of Cyangugu and Butare:

—Upgraded infrastructure with needed inputs: a well-established network of recently upgraded facilities regularly supplied with drugs,

—Physical access to services: 60 percent of the population within a 5-kilometer radius of a health center,

—Functioning public-private partnership: a functioning, historical partnership between government and nonprofit private facilities, which managed 60 and 40 percent, respectively, of all health facilities, and

—An adequate health information system, which is computerized and up-to-date.

The scale-up to the national level was made possible by Rwanda's commitment to good governance, essential to the performance-based approach, as evidenced by policies aimed at increasing accountability and enhancing the effectiveness of service delivery, such as the streamlining of central public sector ministries.

Prudent macroeconomic and fiscal management (reflected in annual gross domestic product growth of 7.4 percent between 1995 and 2005) enabled the government to increase priority spending in the social sectors. Health expenditures as a share of total government spending rose from 2.5 percent in 1998 to 11 percent in 2006.

Rwanda's track record of responsible and transparent use of donor funds also facilitated the adoption of the performance-based approach. For example, results from the World Bank HIV/AIDS project and from the Global Fund to Fight AIDS, Tuberculosis, and Malaria grants for HIV/AIDS have been strong, with all targets met and some exceeded. Budget support by the World Bank, European Commission, African Development Bank, United Kingdom, and Sweden have expanded rapidly, reflecting the confidence of donors in the management of funds.

Three Financing Schemes

The first two schemes were launched in 2002 by Dutch nongovernmental organizations (NGOs), one in Butare (Initiative pour la Performance) by HealthNet TPO and the other in Cyangugu by Memisa/CORDAID. The third project was undertaken in Kigali-Ngali, Kabgayi, and Kigali Ville in 2005 by Belgian Technical Cooperation (BTC), a development cooperation agency. The design of the first two was inspired by early lessons from a contracting initiative in Cambodia. The population covered by each scheme and the number of facilities involved at the time of start-up are presented in table 10-1.

The overriding goal of all three schemes was to increase the use of health services. This would be achieved by remunerating staff based partly on services delivered and by empowering them to identify creative ways to increase the quantity of those services. Expected innovations included subcontracting community groups and private dispensaries, introducing organizational changes, and recruiting

Table 10-1. *Population and Number of Facilities under Different Schemes at Start-up in Rwanda*

Location and time period	*Population (millions)*	*Health centers*	*Hospitals*	*Health teams*
Butare (2002)	0.4	36	3	4
Cyangugu (2002)	0.6	26	4	4
Kigali-Ngali, Kabgayi, Kigali Ville (2005)	1.6	75	4	4
Rwanda (2008, envisaged)	8.6	365	35	35

Source: Authors.

additional staff. The performance-based financing schemes were also expected to stimulate more effective management of facilities because providers had greater autonomy to decide how services would be organized and delivered. The common elements of and differences in the three schemes are included in appendix 10-1 and summarized here.

All schemes established clear management structures to institute payment agreements and pay facilities. In Cyangugu, the fund-holding international NGO was responsible for negotiating contracts, establishing fees, and making payments. In the BTC scheme, the bilateral donor comanaged the program with the Ministry of Health, working through the government structures. The Butare scheme went a step further in working with the provincial structures by creating a steering committee comprising the donor HealthNet TPO, the Ministry of Health, and the provincial health authorities. This committee negotiated a purchase contract with the health centers, which drew up motivation contracts for each employee (Meessen and others 2006).

Strategic planning was an integral aspect of the Butare and Cyangugu schemes. Health providers were required to prepare business plans in Cyangugu and encouraged to do so in Butare, with details on strategies for attaining results. At well-functioning facilities, the process of developing these plans was highly participatory and empowered stakeholders to find innovative ways to improve service delivery. Although the BTC scheme also involved staff in setting targets and identifying innovative approaches, strategic planning was not a key aspect.

The range of services was broadly similar. The goal of all three schemes was to cover progressively services in the basic health package for health centers and district hospitals. In Butare, the initial goal was to fund a set of "high-impact activities that were easy to deliver and easy to measure" (Meessen and others 2006). Services between 2002 and 2004 were thus provided at only the health facility level and in only two districts, both due to funding constraints and the desire to test the approach before embarking on the complexities of contracting hospitals. The Cyangugu scheme was relatively well financed and covered all facilities in the province, providing a more generous set of services, including payments for tuberculosis (TB) management, referrals, and obstetrical emergencies. The Butare and Cyangugu schemes introduced payments for HIV/AIDS services in mid-2005, and the BTC scheme did so for TB and malaria services.

The level of resources available varied across the schemes. The average per capita annual subsidy for each scheme depended on the services provided, resources available, and population served. This annual budget was about $0.24 per inhabitant per year in the Butare scheme, less than $0.20 in the BTC scheme, and about $2.00

in Cyangugu. The payments to facilities were made on a case-based reimbursement basis, with each additional output receiving a payment to reflect the incremental effort of staff. In Cyangugu, there was also an isolation bonus payment to assist facilities in geographically disadvantaged areas. The method of handling these payments also differed across the schemes. In Butare, where health centers had to inform the steering committee in advance of the pay scale for bonus payments, the money was given to the health committee, which then paid the staff. Some opted for retaining 5 percent for reinvesting at the facility level. In Cyangugu, payments were made directly to the facility, with health committees or management deciding how to use funds; on average, roughly 40 percent was given as staff bonus payments and 60 percent was reinvested at the facility. In the BTC scheme, facilities received payments and distributed them among personnel according to previously agreed criteria that captured the relative contributions of staff. On average, each health worker could earn between $25 and $30 monthly in the Butare and Cyangugu schemes before HIV performance bonus payments were introduced and around $18 in the BTC scheme, in addition to a predictable salary payment.

Each scheme used a different approach to monitor results and validate data. Each approach had its strengths and limitations. In Butare, the steering committee monitored results, limiting the need for additional personnel and funds. The scheme relied primarily on data generated by the Health Management Information System (HMIS), with periodic, random cross-checks. This obviated the need for a parallel information system, but did not always guarantee the reliability of data. However, according to key informants, one of the positive spillover effects was improved timeliness and accuracy of reporting. The Butare model also introduced third-party monitoring by commissioning the School of Public Health to survey client satisfaction every six months, but these surveys proved costly and infrequent. The Cyangugu scheme had a sophisticated and independent verification system, with supervisors and an officer for monitoring and evaluation to validate data and survey patient satisfaction. Having dedicated staff for monitoring acknowledges the importance of this function and highlights the need to earmark funds for this activity. The Cyangugu scheme also piloted an innovative civil society mechanism for monitoring results whereby community organizations conducted patient satisfaction surveys on a quarterly basis. Community representatives were chosen by the local community and included clergy, local leaders, wise men (*inyagamugayo*), and representatives of associations of people living with HIV/AIDS. Results of civil society monitoring were shared with facilities, which could receive a special award of a maximum of 15 percent on top of their monthly fees if their performance was deemed exceptional. The BTC scheme differed from the others by

consolidating both supervision and data validation into one function, leading to much debate about a possible conflict of interest. But BTC administrators have argued that supervisors are remunerated on how well they perform their job (regularity of visits, timeliness of supervisory reports, and adequacy of follow-up measures) and not on how well the facilities under their supervision are performing.

The three pilot projects differed in the way quality of care was treated. In the Butare scheme, quality of care was not included, as it was considered complex to define and measure. In the Cyangugu scheme, district hospitals carried out a quality regulation function and awarded additional bonuses based on results. The BTC scheme developed a set of composite indicators as proxies for quality of care. At health centers, quality was defined in terms of adherence to protocols. At the hospital level, quality was assessed in terms of process indicators (such as timeliness of reports, lack of stock outs, and frequency of supervisory visits).

Results

Results from the three initial performance-based schemes show improvements in coverage, quality, and impact on patients. Nevertheless, the data need to be interpreted carefully for the following reasons:

—Analysis is limited to before and after observations and to comparison with noncontracting provinces.

—It is not possible to tease out the impact of other factors, such as the expansion in *mutuelle* coverage, that may also contribute to increasing use.

—Data are sometimes drawn from a relatively small sample of facilities and providers and cannot be viewed as representative or statistically significant.

—Information for all indicators was not available long enough to ascertain trends.

Cyangugu and Butare Schemes

The main source of comparative data is a World Bank–funded review that compared Butare and Cyangugu schemes with two provinces (Gikongoro, Kibungo) that benefited from substantial assistance but did not use the performance-based financing (PBF) approach. Data come from a combination of service statistics reported through the HMIS, surveys of a small sample of providers, and examination of quality in a sample of facilities. Quality was examined by randomly selecting eight health centers in the PBF regions of Cyangugu and Butare and comparing quality in eight randomly selected health centers from non-PBF regions of Gikongoro and Kibungo. These sixteen centers were surveyed by a team of one

Table 10-2. *Comparison of Services before and after the Intervention in Rwanda*

Province and time period	*Curative care*	*Deliveries*	*Family planning*	*Measles*
PBF provinces				
Before (2001)	0.22	12.2	1.1	70.7
After (2004)	0.55	23.1	3.9	81.5
Non-PBF provinces				
Before (2001)	0.20	6.7	0.3	77.9
After (2004)	0.30	9.7	0.5	78.9

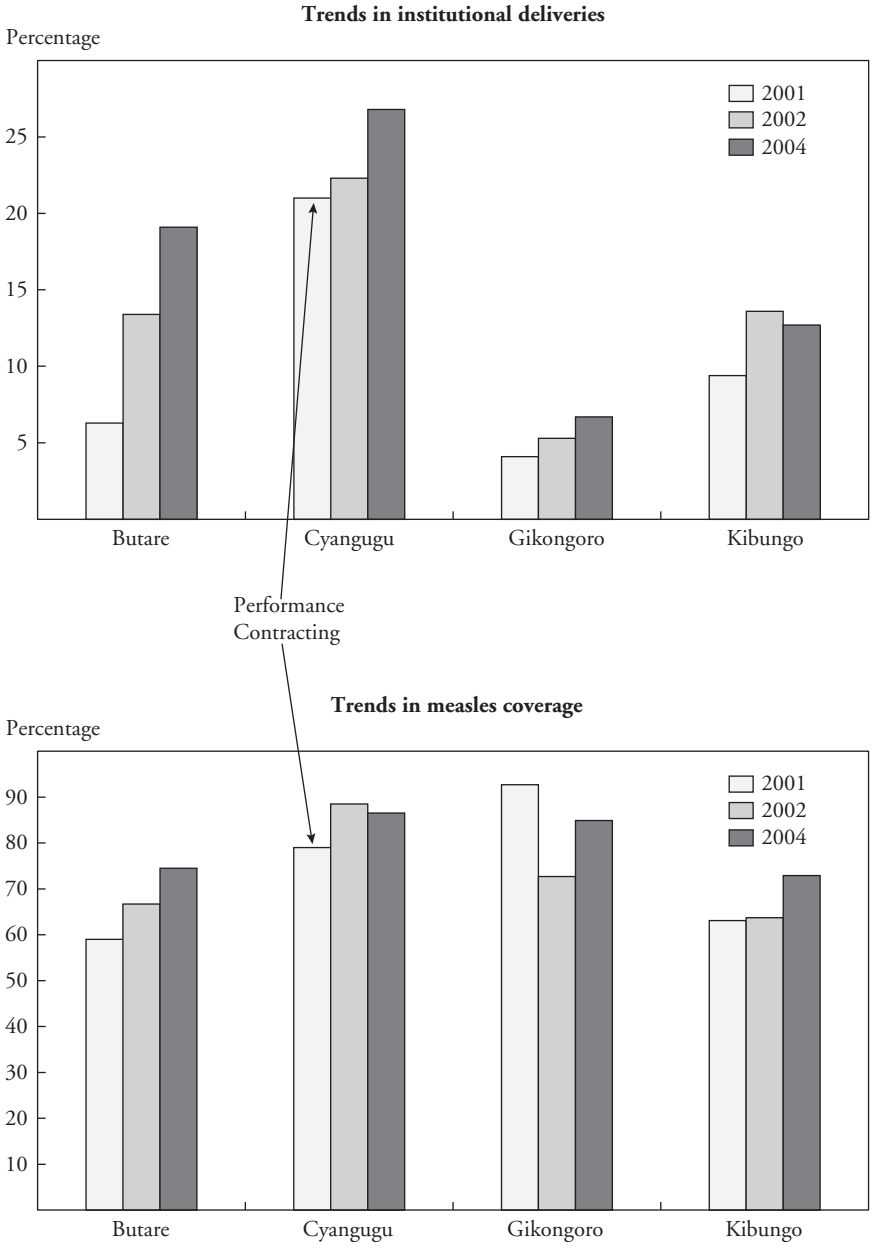
Source: Authors.

supervisor from Cyangugu and an independent former supervisor from Butare. This team verified data and assessed quality by examining a small sample of patient files in each health center to determine appropriateness of care. Each health center could score one point for each of thirteen indicators of quality, and each province could score a maximum of fifty-two points (four health centers times thirteen points). Although it is difficult to attribute the improvements only to the performance-based approach, it is worth noting that others have found similar results when comparing PBF and non-PBF provinces in Rwanda, with findings from the Butare and Cyangugu schemes published in international peer-reviewed literature.

Coverage

Provinces with performance-based financing reported the largest increases in the quantities of both curative and preventive care services. Starting from a low of about 0.2 curative care visit per person per year in all provinces, performance-based financing provinces reached 0.5 visit per person per year, and non–performance-based provinces provided only 0.3 curative care visit per person per year. Between 2001 and 2004, the PBF group saw an increase of institutional deliveries of close to 11 percentage points, while the non-PBF group increased by only 3.0 percentage points (see table 10-2). Butare more than tripled coverage compared to Gikongoro (see figure 10-1). According to key informants, the boost in institutional deliveries was primarily due to innovative strategies to attract women to deliver at health centers, such as the establishment of additional centers to bring services closer to beneficiaries, paying traditional birth attendants to bring women to health centers, and providing clothing for newborns as an incentive to attract women to deliver. On family planning acceptors, even though the absolute numbers remain low, the PBF group showed an increase of 2.8 percentage points compared to only

Figure 10-1. *Institutional Deliveries and Measles Coverage in Rwanda, 2001–04*



Source: Authors.

0.2 percentage point in the non-PBF group. On immunization, measles coverage increased by almost 11 percentage points in the PBF group, compared to only 1 percentage point in the non-PBF group. By 2004, the performance-based provinces slightly surpassed measles coverage in the non-performance-based provinces.

Quality

Performance-based provinces outperformed non-performance-based ones with a composite quality score of 73 versus 47 percent. Scores were considerably higher for effective management of deliveries and referral systems, but identical for other services, such as immunization. Provider satisfaction with income levels was relatively high in the contracting provinces, where staff received bonus payments of 27 percent (Butare) to 43 percent (Cyangugu) over and above their regular salaries. Views with respect to supervision were relatively positive in the contracting provinces, where roughly 80 percent of staff reported external supervision as frequent with effective follow-up; by contrast, only 44 percent of respondents in non-contracting provinces responded favorably. Virtually all staff involved in the contractual approach felt that it contributed to improved motivation, and about half mentioned qualitative improvements as a benefit.

In regard to impact on patients, although overall financing went up across the board, it increased at a faster rate in the contracting provinces, with a commensurate drop in out-of-pocket expenditures. Consumers paid less out of pocket in Butare and Cyangugu than in the noncontracting provinces. Consumers also accounted for about 85 percent of total spending in 2002 in all provinces, 68 percent in noncontracting provinces, but only about 51 percent in the contracting provinces.

BTC Scheme

At the time this chapter was written, information on the BTC scheme was available only for the period between 2004 and 2005; in spite of the short duration, it suggests several interesting results and early lessons (see table 10-3). The performance-based approach can generate results in a relatively limited timeframe. Progress has been made on most priority services (except prenatal care), with the BTC scheme reaching roughly 2 million inhabitants. Although it is not possible to attribute these improvements to the performance-based scheme alone, key stakeholders believe that the scheme has contributed greatly by establishing a results-oriented culture, strengthening supervision, and promoting innovative strategies for improving coverage.

Table 10-3. *Impact on Core Services in BTC Scheme in Rwanda, 2004 and 2005*
Proportion of target population served

Core service	*2004*	*2005*
Curative consultation	47.6	57.3
Prenatal consultation	53.2	52.2
Family planning	10.6	15.7
Growth monitoring	46.5	93.6
Immunization	80.0	83.6
Assisted deliveries	21.2	29.7
Treatment of severe malnutrition of children under five	1.5	4.0

Source: Authors.

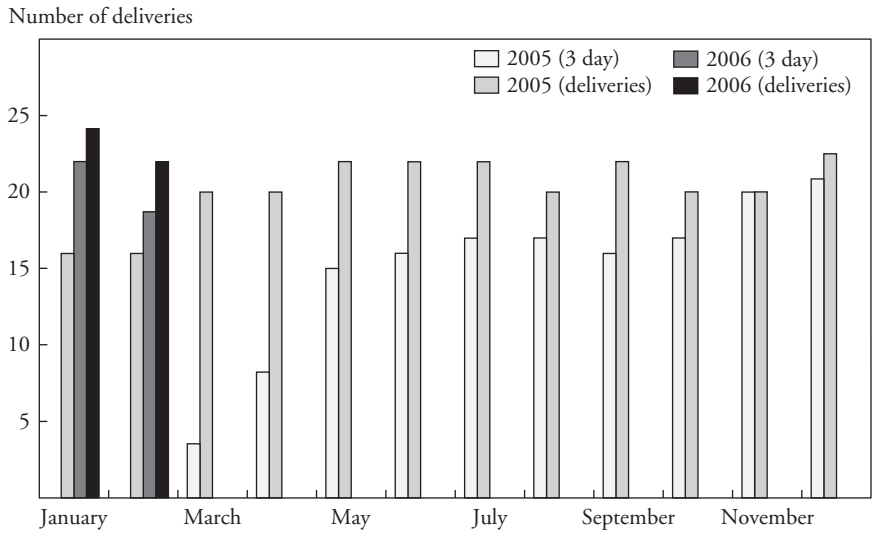
Institutional deliveries increased, in part because of important innovations supported by the performance-based scheme. Other policies, such as the expansion in *mutuelles,* may also have influenced the positive trend in institutional deliveries, but the introduction of bonus payments for women who spend three days after delivery at a health center was an innovation of the contracted providers. Figure 10-2 shows an increase of more than 65 percent within nine months among such women. A sustained rise in institutional deliveries, combined with the three-day stay, may have an important impact on reducing complications from childbirth because it allows providers to identify immediate complications or problems with the newborns.

Improvement in curative consultations may be attributed only partly to the performance-based scheme. Program administrators believe that curative consultations are more sensitive to membership in *mutuelles* because members tend to use health facilities more often than nonmembers.

HIV/AIDS

Taking advantage of the existence of the performance-based schemes in Butare and Cyangugu, a core group of HIV/AIDS indicators was introduced in 2005 in the context of the World Bank–funded HIV/AIDS Multi-Sectoral Project. The performance-based approach was seen as a way to motivate staff to scale up HIV/AIDS services quickly. However, immediately after the introduction of the HIV/AIDS indicators, facilities noted that the bonus payments did not address the critical shortage of human resources, which prevented them from scaling up. Hence, in addition to the bonus payments, each district hospital received an annual grant of about $60,000. Hospitals had full authority to determine

Figure 10-2. *Institutional Deliveries in Rwanda, 2005 and 2006*



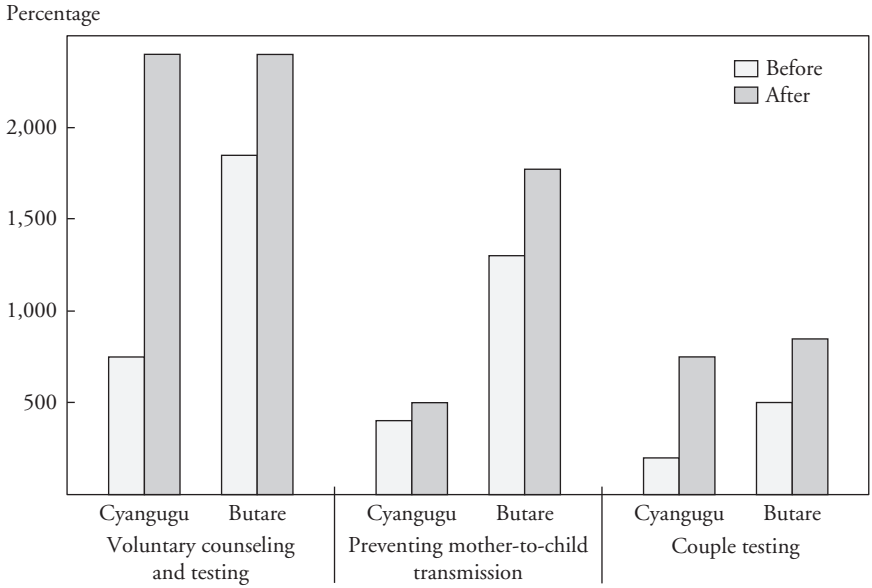
Source: Authors.

the number, profile, and payment levels of the additional personnel recruited. The Bank project used a learn-by-doing approach, which subsequently informed the financing of HIV/AIDS bonus payments by the President's Emergency Plan for AIDS Relief (PEPFAR) and the Global Fund to Fight AIDS, Tuberculosis, and Malaria.

A rapid scale-up of key HIV/AIDS services occurred after the introduction of the scheme, particularly in Cyangugu (see figure 10-3). Although the usual caveats apply in any before-and-after comparison, such as the lack of control groups and potential pilot-test bias, it is likely that the performance-based approach contributed to the increase in HIV testing and to the increase in couple testing, particularly as facilities used innovative strategies to reach more people. Within the first year, Cyangugu had surpassed the targets set under the World Bank operation and experienced an overall fourfold increase in monthly testing.

By contrast, there was no clear trend in the number of people on antiretroviral treatment at sites with and without the approach, even though sites with the approach appear to be doing slightly better (see figure 10-4). Before-and-after comparisons are influenced by several other factors, such as initial waiting lists, capacity to conduct CD4 counts, and decentralization of care to health centers,

Figure 10-3. *HIV Monthly Tests before and after Introduction of the PBF Scheme in Two Provinces of Rwanda*[a]



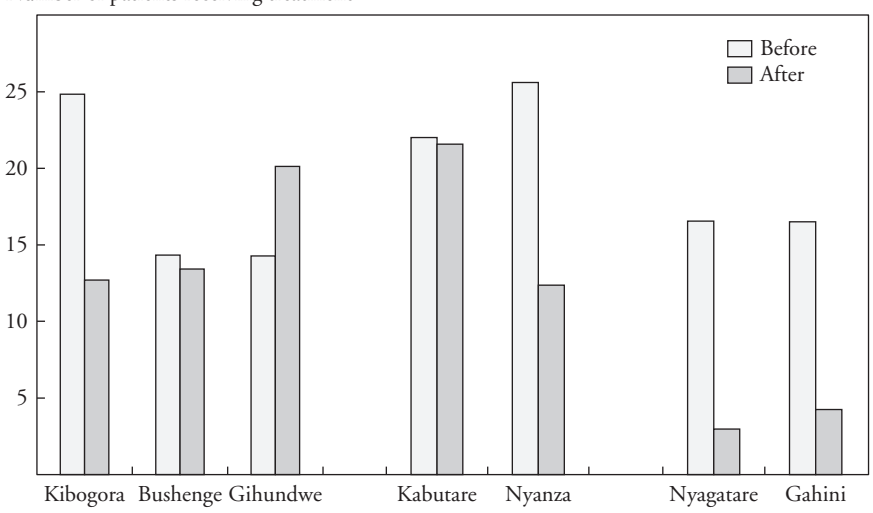
Source: CORDAID for Cyangugu; *comité de pilotage* for Butare.

a. For Cyangugu before-after estimates refer to 2004 versus 2005–06; for Butare before-after estimates refer to 2005 versus 2006.

with patients assigned for follow-up to health centers. Focus group discussions with key informants suggested that the annual grants provided to hospitals were one of the key factors influencing the scale-up of services.

The introduction of HIV indicators in the performance-based schemes boosted staff salaries and may have contributed to the overall strengthening of the health system. The fee structure for HIV indicators under the two schemes was identical. But proportionately revenues from HIV represented a much larger share of total revenues under the Butare scheme because financing for basic health was relatively modest. As a result, a nurse working at a facility in Butare with the performance-based scheme earned, on average, about $80 monthly in comparison to roughly $30 for a nurse working at a nonparticipating health center. This distortion is gradually being phased out because virtually all facilities will shortly be participating in the PBF approach. Concerns were also raised by some stakeholders about the potential perverse effects of these funds resulting in the neglect of non-

Figure 10-4. *Monthly Uptake of Patients Receiving Antiretroviral Treatment before and after Introduction of the PBF Scheme in Rwanda*[a]



Source: Author.
a. Nyagatare and Gahini are comparison areas without performance-based financing.

HIV/AIDS patients. Program managers noted that there was no decline in other services in the same period and that facilities appeared to act rationally by using the infusion of additional HIV/AIDS resources to reinvest in facilities.

Scale-Up

Encouraging results from three pilots prompted the Ministry of Health to scale up a national model of performance-based financing. Key functions remain within the public system, with broad-based participation of providers, civil society, and local government. The scale-up began with three key actions: putting in place the institutional framework, standardizing the performance-based approach and tools, and developing a rollout plan and an impact evaluation.

Institutional Framework

Performance-based financing was adopted as a national policy as part of the 2005–09 Health Strategic Plan and subsequently incorporated into the National

Finance Law. The government developed specific statutes affecting health professionals that covered bonus payments to staff at both public and nonprofit health centers and district hospitals. In the short term, the government assumed responsibility for financing payments of about $0.25 per capita at all health centers, but urged development partners to continue temporarily funding district hospitals.

A thematic group on the performance-based approach was established to bring stakeholders together to exchange information and experiences. Key development partners—Belgium, the United States (PEPFAR), and the World Bank through the Poverty Reduction Support Credit/Grants[1]—have been instrumental in supporting the scale-up. The World Bank has spearheaded the design and rollout of the impact evaluation. CORDAID, HealthNet TPO, and BTC—the partners who supported the initial performance-based schemes—have been mobilized to assist in the scale-up, with technical support from the United States through Management Sciences for Health.

Approach and Tools

Based on the experience of the initial schemes, a standardized set of core services, a unique fee structure, and contracts were developed. The national plan involves delivery of core services at health centers and a complementary group of HIV/AIDS and hospital services. At the community level, a package of services and information will be provided.

Under the PBF scheme, health centers are reimbursed for the quantity of services provided according to a standardized fee structure for a list of fourteen services, adjusted by a composite quality score. Health centers can raise revenues by increasing the quantity of these services delivered and by improving quality. Bonus payments to health centers are calculated as follows:

$$\text{Health center PBF earnings} = (\text{fees} * \text{quantity}) * (\% \text{ quality score}).$$

Other sources of health center revenue are derived from government funding of health workers, user fees, *mutuelle* membership fees, and donor contributions. Quality is assessed quarterly by a team from the district hospital using a supervisory check list that measures thirteen services and 185 variables. A score of 100 percent

1. The World Bank–funded Poverty Reduction Support Credit/Grants have supported the performance-based financing and budgeting for service delivery with the goal of reaching the Millennium Development Goals. They have been funded jointly with the African Development Bank Group, the International Monetary Fund, the U.K. Department for International Development, Germany, the Netherlands, and Sweden.

would provide health centers with their full payment. Scores of less than 100 percent discount the payment proportionately.

Hospital budgets are determined prospectively, based on an annual value of about $600 per bed. Each quarter, quality is assessed through a peer review system (a team from a peer hospital assesses the quality of another similar hospital). Hospitals are provided points for achievements along a checklist of fifty-one composite indicators organized into three main categories: administration, quality assurance, and clinical activities. All hospitals have a specific point value (as determined by their individual prospective global budgets), and 100 percent performance is equivalent to the maximum number of points that can be gained. Roughly 50 percent of the budget is allocated for outputs, 30 percent for quality, and 20 percent for administration. Most hospitals, one year into the hospital PBF model, score around 80 percent each quarter. In addition, hospitals that offer HIV/AIDS services have the opportunity to earn additional revenues by providing HIV/AIDS services included on a specified list. These added revenues are calculated by multiplying the quantity of each service on a list by the assigned fee, discounted by the quality score assigned to the hospital in that quarter.

District steering committees negotiate three types of performance contracts: those between the Ministry of Health and the thirty administrative districts, performance contracts between district steering committees and the health center management committees, and motivation contracts between the health center committees and individual health workers.

For data verification and validation, the scale-up plan drew on the most promising aspects of the earlier schemes. Data entry and retrieval are performed through the Internet. District PBF steering committees validate invoices quarterly. Data are validated by specially trained data agents from the district health department (under the Ministry of Local Administration) or from a specially designated team from the district hospital. The district hospital team checks quality on a quarterly basis. The PBF steering committees validate bills and send them to the Ministry of Health to approve quarterly district payments, through the Ministry of Finance, into health center bank accounts. Both government and other purchasers use the same health facility bank accounts to transfer quarterly payments. Rwanda's relatively well-performing public finance system facilitates this simple flow of funds, which augurs well for the national scale-up. A multistage random sampling of both quantity data, which will use client satisfaction surveys in the community, and quality data, which will revalidate randomly sampled quality checklists, are planned for 2008.

Table 10-4. *Impact Evaluation Timeline in Rwanda*

	Implementation		*Impact evaluation surveys*
Time period	*Phase 1*	*Phase 2*	
2006			
January			Baseline, general health
March			
June–September	Start intervention		Baseline, HIV/AIDS
2007			
2008			
February–April			Follow-up
April		Start intervention	

Source: Authors.

Impact Evaluation

Despite promising results from the performance-based schemes, it was widely agreed that a rigorous impact evaluation was needed to inform public policy. An evaluation scheme was thus initiated to assess the impact on health status and on service delivery in terms of quantity, quality, and provider motivation. A rollout plan was developed, with districts matched on key characteristics and grouped into treatment and control groups. Thirteen districts covered by the initial schemes continue the performance-based approach, adopting the national PBF model, ten districts started in 2006 (phase one), and the remaining seven serve as control groups, introducing the scheme in April and May 2008 (phase two). The impact evaluation strategy was to measure the health situation before the start of the package, in both phase one and phase two areas (the baseline), and to measure the health situation again before the start of the package in the phase two areas (the follow-up survey). In order not to hinder the scale-up of key programs and to avoid creating large inequities between participating and nonparticipating districts, phase two districts received a lump-sum payment, equivalent to the average quarterly earnings of phase zero and one health facilities, but they did not participate in the performance-based scheme. The evaluation strategy uses the rollout plan for the national scale-up (see table 10-4).

Conclusions

The Rwanda experience has shown that performance-based schemes can generate rapid results on a large scale in terms of expanding use and coverage, particularly for services that are easy to deliver and measure. This finding is similar

to that found in other developing-country settings. The performance-based approach in Rwanda engendered a results-oriented culture that promoted managerial autonomy and empowered providers to find creative solutions, such as subcontracting birth attendants and establishing new health posts. It also created an environment in which the government has gained enough confidence to decentralize the recruitment and dismissal of health professionals to health centers and hospitals. Most important, it has demonstrated that providers know their local conditions and have the skills and knowledge to deliver desired results. Furthermore, the performance-based schemes have contributed to strengthening normative functions through enhanced monitoring, planning, and supervision. Contracts that stipulate deliverables strengthen accountability at all levels.

Performance-based schemes are neither a panacea for all problems of health systems nor a substitute for investments in health facilities. They are just one promising and innovative strategy to tackle issues related to service use and provider performance. The Rwanda experience has shown that they can work in a resource-constrained environment, but only when minimal conditions are in place, such as a functioning drug supply system, minimal staffing levels, and the autonomy to recruit and dismiss personnel.

The jury is still out on whether financial incentives are the key motivating factor behind the boost in health sector performance in Rwanda. Key informants and program managers differ on the relative importance of the payments and the empowering effect of the approach. Some stakeholders believe that financial payments made a significant difference in a context where salaries remain inadequate. Others argue that the intrinsic nature of the performance-based approach is what mattered most. In the words of one key informant, the performance-based approach helped to generate team spirit. Clearly, financial payments that boosted salaries by more than 40 percent had a large motivational impact, as reflected in the greater reported satisfaction with working conditions in Cyangugu. But even in cases where payments were relatively modest, as in Butare, important increases in service delivery were registered. Another important factor is the enhanced supervision by district health teams, an integral part of the approach. Key informants reported a discernible improvement in the supervisory function in all areas where the schemes were introduced. This is consistent with findings from other settings, where enhanced supervision itself proved a powerful factor for change in public health systems.

The pilot phase generated important lessons for the national scale-up. First, determining the optimal fund-holding arrangement for the contracting scheme

needs to balance capacity concerns with government ownership. Although in two of the initial schemes the funds were held by an NGO or bilateral agency with strong technical capacity, for the national scale-up the government opted to retain this function in the public system, but with strong civil society representation. Rwandan authorities felt that this was important to ensure that the fund holder was accountable to the government, rather than to the donors, and that institutional capacity for contract management was put in place in the public system.

Second, the quality dimension is critical and needs to be built into the design of these schemes. Although the initial focus in the immediate postconflict period was on increasing the use of services, quality dimensions were subsequently incorporated into the national model, with a mechanism to adjust payments for quality of care. This approach introduces incentives to maintain and improve quality. Nevertheless, as in other countries, there remain enormous challenges to defining and measuring quality, and the process should be flexible, using a learn-by-doing approach.

Third, putting in place an efficient and cost-effective system to validate the accuracy of data and monitor patient satisfaction is essential to the success of this approach. As in other settings, the Rwanda experience has confirmed that the process of verifying the accuracy of data should not be overly onerous or costly. Indicators should be easy to verify, the number of indicators should be kept reasonable, and the quality of care should be verified only periodically. The use of community associations in the Cyangugu scheme proved a promising and innovative way to empower civil society groups in this process.

Finally, indicators need to be reviewed and revised in a learn-by-doing environment to ensure that they are clearly articulated and provide the right incentives. Close consultation with end users of both quality and quantity indicators at the health center and hospital levels is a good practice that ensures ownership by health facilities and district authorities.

The impact on patients appears generally positive, as the use of services rose and the quality of care appeared to improve. In Cyangugu, there was a concerted effort to entice health managers to lower out-of-pocket payments to reduce financial barriers and improve use. This was not the case in the other provinces, but it is a strategy some providers may select in the future. The impact on the poor remains unclear. On a general note, the services provided focus on the needs of the poor, and many of those served at contracting sites are poor. For the individuals who benefited from the expansion in health services, benefits were clear. For

services that already had high coverage levels, the incremental benefits accrued to those hardest to reach. But, overall, the approach did not have the explicit objective of targeting the poor because this is being done primarily by paying premiums for poor households to access the *mutuelles.*

The performance-based approach runs the risk of exacerbating inequities among health providers, and thus mitigation measures need to be built into the schemes. Providers do not always compete on an equal footing. As in other countries, staffing levels vary among facilities, and some serve groups in remote areas. The use of an isolation bonus, as in Cyangugu, assisted facilities in such areas to compete to attract health workers.

One of the key concerns is whether and how the results achieved so rapidly can be sustained with the national scale-up. The good news is that the two initial schemes have had more than five years of sustained experience in providing a broad range of services and operating at a large number of facilities. That the government has now assumed financial responsibility for the bonus payments, initially at health centers, augurs well for financial sustainability by lowering the dependence on external funding. At the same time, successful performance-based schemes may attract other donors, such as the United States, which is now supporting the scheme, and the Global Fund to Fight AIDS, Tuberculosis, and Malaria, which will become an important contributor of HIV/AIDS performance-based financing payments starting in 2008. By the same token, however, institution building will need to keep pace with the government's ambitious rollout plan. Key stakeholders report tremendous enthusiasm among district authorities, but the task of putting in place capacities for contract management, data validation, and supervision at some 400 health centers nationwide should not be underestimated. Mobilizing experts continues to be pivotal in the rollout of the national program. Technical assistance needs to be sustained until the new system is up and fully running.

One of the single most important lessons emerging from early experience with the performance-based approach in Rwanda is the need for rigorous evaluation. Consensus among key stakeholders on the benefits of the approach and evidence suggests that it is promising, even though it has not always been possible to tease out the effects of other factors contributing to improvements in coverage or to ascertain the counterfactual. The proposed national scale-up offers the opportunity to test the approach under different conditions. The impact evaluation now under way is expected to provide important evidence for future policies.

Appendix 10-1. Key Features of Schemes

What is the population covered?

—Butare: Gakoma (about 304,400) and Kabutare (roughly 80,000) districts, with a total population of about 384,400.

—Cyangugu: Roughly 640,000 inhabitants province-wide.

—Kigali-Ngali: About 1.6 million in 2005.

When was the scheme initiated?

—Butare: The pilot phase was initiated in early 2002. The program started in March 2002 in Gakoma and in June 2002 in Kabutare, or roughly four years ago.

—Cyangugu: The pilot project was initiated in June 2002 in two health districts and was scaled up to provincial level in January 2003 or about 3.5 years ago.

—Kigali-Ngali: The pilot project in Rutongo health district was carried out during 2003–04. Scale-up was initiated in January and February 2005 or roughly 1.5 years ago.

Why was scheme introduced?

—Butare: The key motivation for the start-up of this scheme was the poor performance of the health system as measured by the decline in use of key health services. With the reintroduction of user fees after the war, patients spent on average for each episode about RF 437 in comparison to RF 175 a few years earlier.

—Cyangugu: An evaluation carried out in 2002 found that results based on an input approach were not satisfactory. A household study (January 2003) identified problems of access and use. Provincial authorities decided to adopt an output-based approach province-wide. By January 2003 all twenty-four health centers and four district hospitals had signed contracts.

—Kigali-Ngali: The scheme was introduced province-wide based on the initial positive results of the pilot project in the Rutongo health district.

Which facilities are covered?

—Butare: Initially only health centers were included in the performance scheme supported by Initiative pour la Performance, but the scheme was gradually expanded to include district hospitals.

—Cyangugu: All twenty-four health centers and four district hospitals in public and NGO sectors and nineteen private dispensaries are covered.

—Kigali-Ngali: All health centers and district hospitals in areas where the scheme operates are covered.

Who is the payer?

—Butare: The steering committee (*comité de pilotage*) makes payments.

—Cyangugu: An international NGO (CORDAID) mobilizes funds from different sources (for example, central government, province, and donors, including International Development Association, United Nations Population Fund, the Netherlands). The fund holder verifies that the data are correct.

—Kigali-Ngali: Belgian Technical Cooperation.

Do providers prepare strategic plans?

—Butare: Yes, the health center management committee (*comité de gestion*) has the responsibility to develop strategic plans. One of the main features of the Butare scheme was to encourage innovation in service delivery. The *comité de gestion* includes representatives of health centers and the population.

—Cyangugu: Yes, strategic plans are prepared on a quarterly and annual basis and are a condition for accessing funds

—Kigali-Ngali: Quantitative and qualitative targets are set in consultation between Belgian Technical Cooperation and providers. No strategic plans are produced.

What services are provided at the health facility level?

—Butare: Health centers provide curative consultations, prenatal visits, assisted and referred deliveries, immunization, family planning, TB services, voluntary counseling and testing (VCT), and preventing mother-to-child transmission (PMTCT) services. District hospitals provide consultations, hospitalization, surgeries, referred deliveries, obstetrical emergencies, vasectomies and ligatures, TB screening and diagnosis, intrauterine device and norplant insertions, documented deaths, and VCT, PMTCT services, and antiretroviral therapy.

—Cyangugu: Health centers provide curative consultations, prenatal visits, assisted deliveries, immunization, family planning, VCT, and PMTCT services. District hospitals provide consultations, hospitalization, surgeries, complex deliveries, vasectomies and ligatures, VCT, PMTCT services, and antiretroviral therapy.

—Kigali-Ngali: Minimum Package of Activities (health center), Curative Package of Activities (district hospital), and management activities.

What services are provided at the community level?

—Butare: Impregnated bed nets, diphtheria, pertussis, tetanus dropouts, and outreach.

—Cyangugu: Impregnated bed nets.

—Kigali-Ngali: Home visits and promotional activities by community health workers.

How are targets set?

—Butare: Targets are set by the health committee members.

—Cyangugu: Targets are set based on national objectives and translated into what is feasible locally (that is, health center catchment area).

—Kigali-Ngali: Quantitative targets are set taking into account international standards of optimal coverage and local conditions. Qualitative targets are instructions to be found in the diagnostic and treatment records specific for each type of activity.

What is the average per capita annual subsidy or premium payment?

—Butare: Roughly $0.30 equivalent.

—Cyangugu: About $2.00 equivalent.

—Kigali-Ngali: About $1.60 equivalent.

How much is staff receiving in terms of incremental payments?

—Butare: About $25 equivalent.

—Cyangugu: Between $25 and $30 equivalent.

—Kigali-Ngali: Up to $20 equivalent.

Who receives payments, and how are these funds used?

—Butare: Health centers receive payments based on the number of services provided monthly; the *contrat global d'achat* is between the health center and the *comité de pilotage;* funds are used for individual payments and vary according to the number of services provided. A second contract is established between the health center management committee and each individual staff member.

—Cyangugu: The subsidies are paid directly to the facility. The health facility committees decide on the use of funds; on average roughly 40 percent is given as a bonus to staff, and 60 percent is reinvested at the facility level.

—Kigali-Ngali: The facility receives the payments and distributes them among the personnel, taking into account their qualification and grade level.

Is supervision remunerated?

—Butare: No, district supervisors are not remunerated.

—Cyangugu: The district health team conducts supervision.

—Kigali-Ngali: Yes, district supervisors receive RF 40,000 ($73) monthly, assuming timely and correctly filled out monthly reports.

How are data validated?

—Butare: *Comité de pilotage* ensures that the contracts are well carried out and takes corrective measures if problems emerge.

—Cyangugu: The fund holder validates the quantitative data; the district team also monitors and assesses the quality of care using standardized national tools for basic health and for HIV/AIDS; the district teams can approve up to a 15 percent bonus payment for quality.

—Kigali-Ngali: Data on quantitative indicators in registers are verified directly, and the records used for each subsidized activity are counted using simple indicators of quality.

Are there periodic surveys to measure patient satisfaction or validate results?

—Butare: Yes, the School of Public Health carries out periodic surveys to validate the accuracy of data.

—Cyangugu: Local community groups or associations conduct patient satisfaction surveys on a quarterly basis, increasing the voice of consumers.

—Kigali-Ngali: No additional surveys are carried out.

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