Public-Private Partnerships And Public Hospital Performance In São Paulo, Brazil

Innovations in public hospital management in this Brazilian state present a model for other developing countries struggling with the same set of problems.

by Gerard M. La Forgia and April Harding

ABSTRACT: Public hospitals that are directly managed by government perform poorly in many developing countries. Approaches to improving them through internal managerial reforms have failed, and effective alternatives are much needed. Policymakers are considering reforms through public-private partnerships (PPPs)—a promising but so far unevaluated approach. We present results of a successful reform in São Paulo, Brazil. The PPP model gave facility managers latitude to manage human resources—a factor critical to success. Given the prevalence of direct management of public hospitals in developing countries, the São Paulo experience has implications for policymakers seeking to improve hospital performance. [Health Affairs 28, no. 4 (2009): 1114–1126; 10.1377/hlthaff.28.4.1114]

ARE PUBLIC-PRIVATE PARTNERSHIPS (PPPs) a solution to poorly performing public hospitals in developing countries? It depends. It depends on the PPP model used, on the model's congruence with the underlying problem, and, as always, on implementation. A path-breaking PPP reform, launched in the late 1990s in the state of São Paulo, Brazil, provides insight into this important question. What makes the São Paulo case stand out is that it works, and, unlike many PPPs, this success has been confirmed through evaluation. Also, ten years of implementation experience provides insights about how this success was achieved. In this paper we synthesize the evidence from several evaluations of the reform; we examine what the problems were, what the reform consisted of, what the results were, and why it worked. We focus on the human-resource elements of the reform, which were seen as critical to the performance problems in Brazilian hospitals. Finally, we examine the relevance of the reform for other countries facing similar problems.

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Hospital Spending and Organization in Brazil

Like most countries, Brazil spends the bulk of its health budget (about 70 percent of government health spending) on hospitals. The hospital share of health spending in gross domestic product (GDP) has surpassed 8 percent. This is high for a middle-income country and close to the average for the much richer countries of the Organization for Economic Cooperation and Development (OECD). Brazil faces public spending constraints, and curbing the growth of hospital spending has become a priority, particularly for financial authorities.

Brazil’s health system is a complex mix of public and private funding streams and governance and ownership arrangements. Government is the source of approximately 45 percent of spending; private insurance accounts for 25 percent, and out-of-pocket spending, mainly for medicines, represents most of the remainder. Since the creation of the decentralized Unified Health System (referred to as SUS in Portuguese) in the late 1980s, municipalities and, to a lesser extent, states manage the public finance and delivery system. Financing is shared among the three levels of government, but the federal government contributes 50 percent of public financing for health. In principle, SUS covers the entire population. In practice, most users are poor. For example, SUS finances 90 percent of hospital care provided to the lowest income quintile and 82 percent in the next-lowest. Most of the well-off draw on private insurance or pay out of pocket.

■ Private ownership, public payment. In an unusual situation for a developing country, government funds substantial delivery of services by private facilities. For example, 56 percent of public spending on hospitals is directed to private facilities under contract with SUS. Approximately 38 percent of hospitals (30 percent of beds) are public. The remainder is split among nonprofit (25 percent) and for-profit (37 percent) facilities.

Nearly all of the country’s 2,600 public hospitals are directly managed and operate almost as budgetary departments of federal, state, or municipal governments. Known as direct administration (administração direita), this traditional public governance form follows rules specified in legislation, stipulating labor, procurement, financial, and budgetary processes for all public agencies—with decision making highly centralized and almost always happening “above the hospital” in government health bureaucracies. To the degree that they are held accountable, it is mostly for following the rules on how they spend money, hire staff, and manage staff and supplies. Typical of the Brazilian public sector, directly managed hospitals suffer from overstaffing, a distorted skill-mix of personnel, and little accountability for results. Not surprisingly, these hospitals perform poorly on most available measures, particularly related to efficiency.

■ The challenge faced by São Paulo. In the late 1990s the state of São Paulo was completing construction of a number of new hospitals in underserved poor neighborhoods. State authorities faced a dual challenge. First, they wanted to avoid...
the governance problems—particularly the lack of incentives and accountability for performance—widespread in directly managed public hospitals operated by the state. São Paulo considered this a low-performing and unworkable hospital governance form.

Second, although they envisioned a reform model endowing hospital management with greater autonomy, they were concerned about developing effective accountability arrangements via contracting. In particular, they wished to avoid the shortcomings of existing contracting arrangements for private hospitals. As practiced, contracting was passive and poorly managed, and there was no accountability. The contract was a weak form of contract management referred to as an “agreement” (convenio), which is a legal arrangement to distribute budgets to private hospitals traditionally, and often politically, linked to the public system. The only requirement was to provide information on service volume for payment purposes. Performance targets, however defined, were not specified.

A New Set Of Accountabilities And Incentives

A PPP model to improve governance. The São Paulo government opted to turn over the new hospitals to private nonprofit operators to address the problems described above. The PPP model it chose included an open competition to identify the best operators to take over the facilities. The winning operator would enter into a five-year renewable operating contract with performance specifications, which in turn were linked to payments.

The contractual agreement specified provisions regarding the use and maintenance of the newly built facility by the operator. Bidders were required to organize their operations as nonprofit social organizations, or organizações sociais de saúde (OSSs)—a new form of “public interest” organization created by law in 1998. Significantly, the OSSs were incorporated under civil law, which made them legally independent and therefore not bound by public contracting, civil service, or procurement laws. Because only nonprofit organizations could bid, operators are universities and philanthropic organizations that already operate other hospitals.

Between 1998 and 2005 São Paulo ran competitive bidding for sixteen new facilities. The facilities are general hospitals, averaging 200 beds and offering basic specialties: surgery, gynecology and obstetrics, internal medicine, pediatrics, and psychiatry. All maintain intensive care and neonatal units. Each facility offers emergency care, and most provide outpatient care. All are located in low-income neighborhoods in heavily urbanized municipalities on the periphery of the city of São Paulo.

Because the operators are private, they naturally have full managerial autonomy in decision making on inputs, managerial processes, and the day-to-day operations of public facilities. They are held accountable to the state government (and their boards) via performance contracts. The state has surrendered hierarchical control and direct management of tasks such as human resource management and
input procurement. It assumes more arm’s-length responsibilities related to contract negotiation, management, and performance monitoring.

- **Management contract and payment mechanism.** Fine-tuned over ten years, the performance-based operating contract signed between the state and the OSS is a distinguishing feature of the model. The contract specifies service provision arrangements and performance targets, including (1) volume targets by type of service, including inpatient, outpatient, emergency, diagnostic, and surgical procedures; (2) quality processes and benchmarks such as the reduction of hospital-acquired infections; and (3) reporting requirements on production, costs, payroll, and spending and results of spot surveys on patient satisfaction. The operator is responsible for contracting all personnel and procuring all inputs (except capital).

A second salient feature is the performance-based global budget negotiated between the state and the nonprofit operators. Payments are linked to volume and quality targets, and reporting requirements are specified in the contract. Allocations are divided into two parts. The first part, representing 90 percent of the budget, is linked to production targets and is allocated monthly. Failure to meet volume targets can result in a reduced subsequent allocation. The second, accounting for the remainder, is allocated quarterly and linked to compliance with reporting requirements and quality indicators. These features represented a huge shift accountability arrangements, because Brazilian public hospitals have historically operated with line-item budgets and implicit performance requirements.

- **Limited market exposure.** The PPP hospitals are not subject to performance pressures from competing to sell services in a market; they cannot charge fees, treat private patients, or sell services to third parties. Their mission is to serve low-income “public” patients who reside near the facility. However, they can retain “leftover” revenues (budgetary savings), but only for investment in service improvements. Managers receive a fixed salary and cannot receive bonus or incentive payments, but they can pay performance bonuses to staff (although none do). Each hospital’s global budget represents a hard budget constraint. However, the operators can (and do) obtain loans in the capital market to cover operating deficits, although not to pay for capital improvements. They are not allowed to spend more than 70 percent of budget on payroll and are subject to annual audits by the state’s comptroller general.

- **Capital investments.** Depreciation is not included in calculation of the global budget—a major weakness of the model. As in directly managed hospitals, capital investments depend on the availability of funding and negotiations with state health authorities. As facilities age, PPP hospitals will be subject to the vagaries of state capital financing and are likely to face delays in upgrading plant and equipment.

**Experience With Implementation**

Not all of these features were part of the original design or implemented at once. For example, the contract itself was adapted to address problems as they
emerged. Early on, the contract was not performance-based and did not include precise volume targets, largely because of lack of information. This led to conflicts during budget negotiations and production reviews. Officials privately admit that the state might have overpaid some facilities and underpaid others, but there was no way of knowing. In 2001 the state mandated the installation of information systems, including a standardized cost-accounting system, in all PPP hospitals.

That same year the state established a contract management and monitoring unit inside the health secretariat, separate from the Hospital Department that operated other public hospitals. It was difficult for secretariat officials to shift from direct management to arm’s-length oversight. This unit had to develop capacities to analyze cost and production data and set up a transparent review process. Inevitably, conflicts arose, because few officials or hospital managers had experience with measuring or managing costs. Once the cost-accounting systems were installed, shared cost information became the basis for budgetary negotiations. Variations in unit costs across hospitals generated heated discussions, as expensive facilities sought to justify their higher costs. In most cases, the state held firm, using average unit costs across all facilities to formulate their budgets.

The São Paulo health secretariat had to learn to enforce contractual terms. Again, this was not an easy task, given the lack of familiarity with performance-based financing. At first, few operators believed that the state would follow through with penalties. They were mistaken. Between 2002 and 2004 the state withheld the 10 percent variable budget from several facilities for failure to comply with length-of-stay targets, accounting practices, quality-of-care targets, and reporting requirements. In 2007 a contract was cancelled in part because of continued noncompliance with contractual terms.

Assessing The Impact Of The PPP Reform

We have conducted several analyses of impact, using different data, methods, and outcome measures. We present those results and our interpretations here. We also examine findings of other researchers to see if they confirm our analysis.

- **Study data and methods.** We used two approaches to comparing the performance of the PPP hospitals to similar, unreformed, facilities. In the first analysis we compared the performance postreform of twelve PPP hospitals with a matched set of twelve other hospitals, examining both quality and efficiency indicators based on data we could verify. There were no significant differences between the two groups in the average number of beds, types of services, total spending, spending per bed, or number of professionals per bed. The hospitals were also similar in terms of patients’ illness complexity, age, and sex. Finally, the research was constrained by the lack of verifiable information in the hospitals under direct management. (This is an important finding in and of itself.) Data were usually incomplete or simply didn’t exist, limiting the breadth of quality indicators we could use for comparative purposes.

In the second analysis we compared the relative efficiency of PPP and directly
managed hospitals using Data Envelopment Analysis (DEA). We drew a random sample of 428 facilities from the 2002 National Health Facility Survey of 7,397 hospitals, separating PPP from directly managed facilities, and we compared the relative efficiency of the two groups.

Results: Impact on efficiency and quality. Efficiency. PPP hospitals are markedly more efficient, performing better than the unreformed hospitals in a number of areas, including bed turnover rate (annual number of discharges per bed), bed substitution rate (average number of days a bed remains unoccupied between patients), bed occupancy, and length-of-stay (Exhibit 1). As measured by discharges per bed, the PPP hospitals were significantly more productive for general (\( p < 0.01 \)), surgical (\( p < 0.05 \)), and clinical (\( p < 0.05 \)) discharges. Discharges in obstetrics/gynecology

### Exhibit 1
Comparison of Selected Quality and Efficiency Indicators, Hospitals Under OSS and Direct Administration Arrangements, São Paulo State, Brazil, 2003

<table>
<thead>
<tr>
<th>Indicator</th>
<th>PPP hospitals (N = 12)</th>
<th>Directly managed hospitals (N = 12)*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Quality</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mortality rate</td>
<td>3.3</td>
<td>5.3</td>
</tr>
<tr>
<td>General*</td>
<td>2.6</td>
<td>3.6</td>
</tr>
<tr>
<td>Surgical*</td>
<td>11.6</td>
<td>12.0</td>
</tr>
<tr>
<td>Clinical</td>
<td>2.8</td>
<td>2.6</td>
</tr>
<tr>
<td><strong>Efficiency</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Descriptive statistics</td>
<td>5.2</td>
<td>3.3</td>
</tr>
<tr>
<td>Bed turnover rate***</td>
<td>1.2</td>
<td>3.9</td>
</tr>
<tr>
<td>Bed substitution rate***</td>
<td>81</td>
<td>63</td>
</tr>
<tr>
<td>Bed occupancy rate**</td>
<td>4.2</td>
<td>5.4</td>
</tr>
<tr>
<td>Average length-of-stay**</td>
<td>4.8</td>
<td>5.9</td>
</tr>
<tr>
<td>Discharges per bed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General***</td>
<td>60</td>
<td>46</td>
</tr>
<tr>
<td>Surgical**</td>
<td>71</td>
<td>44</td>
</tr>
<tr>
<td>Clinical**</td>
<td>86</td>
<td>53</td>
</tr>
<tr>
<td>OB/GYN* (n = 20)</td>
<td>96</td>
<td>58</td>
</tr>
<tr>
<td>Hours (full-time equivalent)b</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physician**</td>
<td>143</td>
<td>203</td>
</tr>
<tr>
<td>Nurse</td>
<td>54</td>
<td>41</td>
</tr>
<tr>
<td>Auxiliary</td>
<td>234</td>
<td>257</td>
</tr>
<tr>
<td>Annual spending (thousands of reais)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per bed</td>
<td>177</td>
<td>187</td>
</tr>
<tr>
<td>Per discharge**</td>
<td>2.9</td>
<td>4.3</td>
</tr>
</tbody>
</table>

**Source:** G. La Forgia and B. Couttolenc, Hospital Performance in Brazil: The Search for Excellence (Washington: World Bank, 2008).

**Notes:** OSS is organizações sociais de saúde (nonprofit health social organizations). PPP is public-private partnership. OB/GYN is obstetrics/gynecology.

*For descriptive statistics and hours, n = 10.

*Total hours divided by 40.

\*p < 0.10  **p < 0.05  ***p < 0.01
(OB/GYN) departments per bed were higher, but only marginally significant \( (p < 0.10) \). The group comparison study revealed that, consistent with international best practices, PPP hospitals use about one-third fewer physicians (full-time equivalent; \( p < 0.05 \)) and one-third more nurses (full-time equivalent; \( p < 0.10 \)) than directly managed facilities. This more appropriate staff-mix likely contributes to these efficiency findings.

The DEA results confirm those from the comparative evaluation. PPP hospitals were found to be significantly more efficient than directly managed hospitals. In fact, the latter require approximately 60 percent more resources than the PPP hospitals to produce a comparable output.

**Quality.** Although general and surgical mortality rates were lower in the PPP hospitals, the differences were only marginally significant \( (p < 0.10; \text{Exhibit 1}) \). They displayed slightly higher pediatric mortality, but the difference was not significant. At the time of the survey (2004), three of the twelve PPP hospitals were accredited, and several were enrolled in accreditation programs (data not shown). By 2008, half had received accreditation through the independent National Accreditation Organization. None of the directly managed facilities have been accredited, nor are they seeking accreditation.

**Expenditures.** PPP hospitals spend less per bed-day and per discharge than directly managed facilities (Exhibit 1). However, only the per discharge indicators were significant \( (p < 0.05) \). Because the facilities were matched for total spending, the higher productivity reported in the PPP hospitals clearly contributed to lower unit costs. State-sponsored analyses comparing PPP hospitals with directly managed hospitals found similar results for efficiency and spending indicators.

**Bottom line.** From a value-for-money perspective, the results demonstrate that PPP hospitals represent major improvements over traditional public hospitals in Brazil. The PPP hospitals are performing much better on efficiency and productivity, with no evidence of quality shortfalls.

**Why Did This Reform Work?**

To correctly interpret these findings, we need to understand why this reform worked, to understand which features of the model are essential for addressing which problems. We need to better understand how this model—one of many—addressed the sources of performance weaknesses in Brazilian hospitals.

To understand these forces, we drew on two additional studies. The first was based on in-depth interviews and focus groups with physicians and nurses, to compare personnel practices in seven PPP and directly managed facilities. The other involved a Public Expenditures Tracking Survey, which analyzed managerial processes in hospitals and in state and municipal administrative agencies. We also drew on the findings of other research.

The evidence indicates that the most plausible explanation for the performance improvements were three key managerial changes, directly linked to the PPP reform model. The model altered governance and financing arrangements in ways
that generated the key changes in human resources, financial, and procurement management. In other words, the entire package of governance reforms created an enabling incentive and accountability environment for managerial practices that improved performance. In our view, the changes in human-resource practices and management are the most critical.24

**PPPs and human-resource management.** PPPs are a controversial approach to reform in many places, including Brazil. Although there is general consensus on the improvements generated, some opponents suggest that changing human-resource policies in traditional public hospitals could generate similar improvements. But this would require broader civil-service reform, which is unlikely to occur in the foreseeable future. Nevertheless, the comparative productivity data reported earlier raise the question: why are PPPs so much more productive than the directly managed hospitals?25 Our analysis indicates that the explanation lies in the human-resource practices engendered by PPP governance.

In the PPP hospitals, managers are exercising their autonomy in staff composition through their authority to recruit, select, and dismiss personnel. All personnel are hired under private labor law, which allows employers considerable flexibility in setting employment rules. Managers advertise for physicians through informal networks in São Paulo to identify potential recruits. They select qualified physicians who are the best “fit” for the position and facility. Nursing positions are announced in public advertisements, but again, selection follows a formal interview process. We found no evidence that PPP physicians and nurses receive bonus payments or higher salaries or that they benefit from more training opportunities or stricter supervision than similar professionals in directly managed hospitals.

Hiring and firing are easier under private than civil-service law. Hiring involves a three-month probationary period, during which managers can dismiss workers who do not meet their expectations. After three months, dismissal follows legally determined processes, which are much simpler than dismissal under civil-service law. With these reasonably flexible arrangements, work shirking and absenteeism need not be tolerated in the PPP hospitals. And, indeed, they are not.27

Thus have PPP hospitals established well-performing organizations in which cooperation with organization goals and performance targets is expected. According to one observer, senior managers may “assemble a group of employees with a common commitment to an organizational mission and culture.”28 This collective accountability may induce employees to give their best effort, knowing that their colleagues will do the same. The long tenure of managers and medical directors of most PPPs and low professional staff turnover rates speak to organizational commitment.

“Collective accountability may induce employees to give their best effort, knowing that their colleagues will do the same.”

Clearly, these hiring practices can be abused through nepotism and clientelism. The newness of the PPP initiative makes this difficult to observe. Nevertheless, given the embedded incentives and state-mandated caps placed on personnel spending (combined with the annual state audits of personnel roles and spending), managers have little inclination to hire and retain unsuitable employees.

**Direct management—lack of authority and organizational commitment.** In contrast to the PPP hospitals, managers of directly managed hospitals have little or no authority over staff. Facility managers do not participate in the recruitment process but must accept candidates scoring highest on a multiple-choice, standardized test and a review of curricula vitae by state human-resource administrators. Candidates are not interviewed.

The processes for assigning and transferring staff are much less transparent. Hospital employees are also hired through “confidence postings,” and temporary contracts are awarded without competition. In addition, the mass competitions do not prevent hiring excess personnel. Government often opens up competitions during elections, irrespective of the need for labor.

Finally, sanctions and dismissals are rare in directly managed facilities, where managers must navigate a lengthy and complicated dismissal procedure that may take years. Few managers are willing to bear the high personal and time costs of sanctioning or dismissing employees. Most simply avoid the process.

Would the PPP model work in existing directly managed facilities? Opponents suggest that the newness of the facilities contributes to the higher performance of the PPP hospitals. Clearly, converting existing facilities to the PPP model would be a formidable challenge, in part because of the complexities of overcoming employment ties. Nevertheless, inspired by the success of the PPP model, the state of São Paulo and that state’s city of São Jose dos Campos recently initiated reforms to convert two government-managed hospitals to the PPP model. Preliminary data suggest major efficiency and quality gains in both facilities without notable increases in spending. Interviews with facility managers suggest that authority to alter human-resource practices contributed to improved performance. In both, many civil servants left the facilities for other directly managed facilities instead of abiding by stricter work rules. As practiced in São Paolo, the conversion model depends on budgeted vacancies elsewhere in the system to absorb public employees who choose not to remain at the converted facilities. It also depends on government’s capacity to generate additional resources to cover the costs of the new hires. Experience to date suggests that there is much potential for performance gains if government can overcome the daunting political and fiscal constraints.

**Discussion**

**Key reform ingredients.** This reform merits attention from policymakers seeking to improve performance of public hospitals. The PPP-based model enabled a clear separation of financing from provision of care in a way that allowed the govern-
The PPP model fashioned an environment of performance-oriented incentives and accountability.

The reform allowed private, nonprofit organizations to assume management of all operational aspects of public hospitals. Although the property and physical assets remained public, and PPP facilities serve “public” patients residing in poor neighborhoods where the facilities are located, provision is private and funded under contractual agreement with the State of São Paulo. The mission of the public hospitals remains intact.

Although the public mission (and ownership) was preserved, the structures, governance, and financing systems of traditional government-operated hospitals were radically altered. The PPP model applied a set of alternative arrangements that, taken together, fashioned an environment of performance-oriented incentives and accountability. Managers responded through applying more effective managerial processes to human-resource, procurement, and financial management. This in turn contributed to higher production, productivity, and quality and to lower unit costs than in traditional public hospitals.

Our research suggests that the entire package of governance reforms is necessary and needs to be durable. We identify five essential, closely linked components of this package. (1) Autonomous authority: This has three aspects. First, autonomy gave managers the decision-making authority to run their facilities. Managers are free to manage their budgets and inputs (human resources, drugs, and supplies) as they see fit to meet performance targets. The second aspect entailed protecting facilities from political interference. Finally, the OSS (or its board) is entrusted with fiduciary responsibility and provides oversight of operations while safeguarding against political meddling.

(2) Flexible human-resource management: Most public hospital staff in Brazil are civil-service employees. Rigid rules govern all human-resource processes. The PPP model freed the hospitals from these rigidities. Managers made use of the flexibility of private contract law to recruit qualified personnel who “fit” the organizational culture. They also displayed a willingness to dismiss nonperforming personnel.

(3) Strategic purchasing: The management contract and performance-based financing were key ingredients of the robust accountability framework. The state government used both as a means to implement “intelligent purchasing.” Contractual terms defined hospitals’ roles and responsibilities, preserved their public mission, conveyed physical plant and equipment to the OSS, stipulated payment, and specified service types and corresponding performance targets and reporting requirements. Linking financing to contractual terms created strong incentives for compliance with performance targets.
Contract monitoring and enforcement: Weak contract management has been the “Achilles’ heel” of PPPs in developing countries. The state established three main monitoring mechanisms: a contract-management unit that reviews and analyzes hospital data and negotiates budgets with PPP hospitals; annual audits conducted by the state’s comptroller general; and an independent commission that reviews contract compliance annually. But contracts are meaningless unless enforced. The state has shown a willingness to enforce contractual provisions by not increasing the budget of any hospital in deficit; withholding funds from facilities that fail to achieve performance targets or fulfill reporting requirements; and cancelling a contract for a persistent nonperformer.

Information and transparency: Information flows underlie financing, purchasing, contract monitoring, and enforcement. Over time, the state established a robust process for managing information flows. In addition to mandating information systems, the state pioneered the use of standardized cost-accounting systems in PPP facilities. Using costs as a basis of budget negotiations is revolutionary for the public sector in Brazil. Finally, the state places much information in the public domain.

Insights for other developing countries. Governments in Moscow, Mumbai, Manaus, and many other places face similar problems, and sources of problems, in their public hospitals. As in Brazil, the problems are often grounded in rigid and politicized governance arrangements. Many have attempted to improve hospital performance without addressing this underlying problem, with almost universally disappointing results. For these countries, the Brazilian PPP model is well worth considering.

This model requires the establishment of a long-term contract covering hospital services, which involves public officials in new and complex performance monitoring and verification. Many countries, especially low-income countries, would find this element of the reform challenging. Furthermore, the São Paulo reform allowed only nonprofit organizations to run PPP hospitals. These organizations have social missions, more closely aligned to the government’s goals in the sector; thus, this choice was seen as reducing opportunism as well as being politically palatable. OSSs, unfortunately, have little access to capital, so this PPP model could not be used to expand capital in the sector. Even if capital is not a goal, many countries might not have a vibrant nonprofit hospital sector, which would limit the application of this model. Furthermore, the Brazilian PPP model has been evaluated only when applied to new hospitals, leaving open the question of how it would work with existing public hospitals—which constitute the bulk of the hospital sector in developing countries. However, we may learn more soon, since the state of São Paulo and a municipality in that state recently moved to apply the model to two existing hospitals.
Funding for this study was received from the World Bank and the U.K. Department for International Development (DFID). The findings, interpretations, and conclusions expressed do not necessarily reflect the views of the World Bank or DFID.

NOTES
2. Instituto Brasileiro de Geografia e Estatística, Pesquisa Nacional por Amostra de Domicílios (PNAD): Acesso e utilização de Serviços de Saúde, 1998 (Rio de Janeiro: IBGE, 2000). The survey also reported that 21 percent of hospital care financed by SUS went to high-income groups.
4. About 44 percent of all publicly financed hospitals are publicly owned and operated by state and municipal governments. The rest are private facilities under contract with government.
5. By governance form we refer to features of the hospital environment, including the organization’s structures and functions, that influence hospitals’ behavior: degree of decision-making authority, exposure to market pressures, responsibility for unspent earnings, and accountability for performance.
6. La Forgia and Couttolenc, Hospital Performance in Brazil. In an international comparison of efficiency, Brazilian hospitals scored below average. Overstaffing was a contributing factor. Directly managed hospitals displayed by far the lowest performance.
7. Government uses a treatment- and procedure-based rate system to pay private hospitals. Hospitals report admissions per procedure group and additional services provided beyond a standard package.
8. During the early years of reform implementation, selection of operators was through a semicompetitive process involving certification by the state.
9. State Law 846, Chapter 1, Article 1. Selection criteria included at least five years’ experience in operating a hospital and possession of a governance board.
10. A table summarizing the characteristics of hospitals is available as an online supplement at http://content.healthaffairs.org/cgi/content/full/28/4/1114/DC1.
11. For example, if volume reaches only 75 percent of a negotiated target, the operator loses 10 percent of the next monthly allocation. If volume falls below 75 percent, the operator can lose 30 percent.
12. This contract feature, combined with the hospitals’ location, was critical to ensuring that reform benefits remained focused on the poor.
13. Managers cannot access additional funds from the state to cover spending beyond the budget specified in the management contract.
14. Few hospitals in Brazil, public or private, measure costs.
15. The failure to adjust for case severity or case-mix is a weakness of the global budget. The state has contracted a consultancy firm to design a payment system for the PPP hospitals, based on diagnosis-related groups (DRGs).
16. Because the PPP facilities were new, no prereform data exist. We selected twelve facilities that could be matched with comparable facilities under direct management.
17. The DEA model consisted of two output variables: inpatient discharges and emergency procedures. Input variables included number of beds; number of consultation rooms; log of an equipment-based complexity index; and number of physicians, nurses, and other personnel (full-time equivalents). To test the validity of the model, several alternative models were run, including one excluding hospitals with fewer than fifty beds. All models gave similar results. Methods are explained in more detail in La Forgia and Couttolenc, Hospital Performance in Brazil.
18. Mortality rates were obtained through the SUS hospital information system and verified in a review of hospital registers during site visits.
19. We ran a simple regression to determine the impact of additional spending on production for each category of hospital. We found that a 1 percent increase in spending would result in a 0.47 percent increase in...
inpatient discharges for PPP facilities, compared to a 0.22 percent increase for directly managed facilities.

20. Unpublished study results from State of São Paulo, Secretaria de Estado da Saúde, “Análise Comparativa entre Hospitais de Administração Direita e Hospitais Gerenciados por Organizações Sociais de Saúde” (São Paulo: Coordenadora de Contratação de Serviços de Saúde, Dept. de Gestão e Controle de Contratos, 2003). The samples were unmatched, unlike those reported in the online appendix (see Note 10).


24. Analysis of the other managerial practices can be found in La Forgia and Couttolenc, Hospital Performance in Brazil.

25. Conselho Regional de Medicina do Estado de São Paulo, “Mercado de Trabalho Médico Estado de São Paulo” (São Paulo: CREMESP, 2002). Health professionals typically hold multiple jobs. Most physicians are hired for twenty-hour work weeks, and most nurses work thirty hours. Also see World Bank, “Brazil: Enhancing Performance.”

26. Private labor law does offer workers adequate labor protection, including provisions establishing their pension rights and rules on dismissal.

27. World Bank, “Brazil: Enhancing Performance.”

28. Ibid., 29.

29. Clientelism refers to public officials’ influencing job allocation (or other favors) in exchange for votes or other manifestations of loyalty.

30. On patronage employment in Brazil’s public sector, see E. Nunes, E. Gramática Poltítica do Brasil: Clientelismo e Insulamento Burocrático (Rio de Janeiro: Jorge Zahar, 1999). Confidence postings (cargo de confiança) are positions filled through direct appointment by politicians. Most managers and senior technical staff are appointed in this manner.

31. See La Forgia and Couttolenc, Hospital Performance in Brazil.

