The impact of hospital management reforms on absenteeism in Costa Rica

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The reduction of high levels of absenteeism among health care workers was one of the objectives of the reforms undertaken to improve public hospital performance during the 1990s in Costa Rica. This paper attempts to assess the impact of changes in reimbursement methods and organizational reform on absence rates among health care personnel in Costa Rican public hospitals for the period 1995–2001. Our results show the reforms to have had a negative impact on absenteeism, which increased throughout the considered period. Results further indicate that the policy of not substituting absentee workers, which was introduced through the reforms, did not work as expected in a permissive environment in which peer pressure mechanisms were lacking. In addition, the explicit incentives for workers included in the reforms were retained and used at facility level. There is a pressing need in the future for control and disciplinary mechanisms for health care personnel and for the introduction of absence rates as an explicit goal to be monitored and evaluated.

Key words: absenteeism, hospital management reforms, sick-leave policy, Costa Rica

Introduction

Absenteeism, misreporting information, shirking, moonlighting and the acceptance of informal payments are widespread among the physicians and health care personnel of public health care facilities in developing countries. Surprisingly, however, these issues are not as widely discussed in the policy framework in the health systems of these countries, despite their potentially adverse effects on welfare. Thus, health care reforms have focused chiefly on organizational measures (e.g. decentralization, managed markets and purchaser-provider separation), financial adjustments and the redefining of relations between the public and private sectors and their respective roles, while changes in human resources management (HRM) have not played a key part in such reforms.

Further, although the importance of HRM has been recognized in the literature over the past decade (Healy and McKee 1998; Martínez and Martineau 1998; Buchan 2000; Wang et al. 2002), empirical studies of these undesirable practices remain scarce. Bir and Eggleston (2003) on moonlighting, and Lu and Ma (2002) on misreporting, represent notable exceptions, while it is easier to find literature on informal payments (see, for instance, Ensor and Savelyeva 1998).

This paper deals with absenteeism in the health care sector. To our knowledge, few papers have studied this issue. Pauly et al. (2002) analyze this problem by focusing on the costs and benefits of programmes designed to reduce absence due to illness. However, they neglect the issue of unjustifiable or unexplained absences and the abuse of sick-leave privileges by healthy employees. Both kinds of absences are very common in developing countries, as shown in several studies in which the main focus is on measuring the incidence of absenteeism. For instance, Di Tella and Savedoff (2001) show how specialists and senior doctors in Venezuela miss about one-third of their contracted service hours, while residents and nurses register absence rates of about 13% and 7%, respectively. Similarly, the World Bank (2003) estimates absenteeism among medical personnel in different countries by means of non-scheduled visits to public health care facilities. Figures on absence rates reflect the extent of the problem: 42% for Bangladesh, 27% for Honduras, 43% for India, 26% for Peru and 35% for Uganda. Such high levels of absenteeism have been shown to undercut the quality of services as well as patients’ utilization rates (Chandhury and Hammer 2003).

High levels of absenteeism have been also reported in Costa Rica, where unjustifiable or unexplained absenteeism is common practice among both doctors and nurses (Cercone et al. 2000).

In this paper, we analyze the evolution of absenteeism in Costa Rican hospitals throughout the period 1995–2001, when basic reform was introduced in the organization and financing of the health sector. Reduction of high levels of absenteeism among health care workers was one of the stated objectives of this reform. A decentralization process, together with new management arrangements, brought health care facility managers new areas of responsibility and authority, and autonomy in areas such as budgetary procurement and administrative and human resource management. Moreover, a sick-leave
policy, based on the non-substitution of absentee workers, was implemented with the purpose of reducing not only the costs of overstaffed hospitals, but also absence rates among workers. Peer pressure mechanisms were expected to work, especially because incentive mechanisms were designed to introduce some changes in the organizational culture and work group norms at health care facilities.

The purpose of this article is to test whether the introduction of these new organizational arrangements was followed by lower absence rates than those registered previously. Our results suggest that the sick-leave policy might have introduced perverse incentives in the system, thereby contributing to an increase rather than a decrease in absenteeism. The evidence presented suggests that other policy measures should be introduced, especially in large hospitals.

Other Latin American countries have implemented similar reforms; see, for instance, the cases of Nicaragua (Jack 2003), Colombia (McPake et al. 2003), Argentina and Chile (Sojo 2000). In most of them, however, the reduction of absenteeism was not highlighted in the reform agenda, even though this is a problem that affects them. In consequence, the studies cited above fail to analyze this issue, focusing instead on the impact of reforms at organizational level. Our study is pioneering in this respect. In addition, the lessons we draw here may be useful for other countries faced with high levels of absenteeism.

The paper is organized as follows. We first review the basic factors determining health care workers’ behaviour and directly affecting absenteeism. This is followed by a description of the main features of the health sector reform in Costa Rica. The data and results are then presented. A discussion of the results and a number of policy suggestions complete the paper.

What is behind absenteeism?
Absenteeism means the unjustifiable or unexplained absence of workers. However, even when absence is justifiable and attributable to illness (involuntary), it is possible to find cases of healthy workers abusing sick-leave privileges (voluntary). In doing this, they benefit from their informational advantage, as it is not easy for managers or employers to determine whether an absent employee is genuinely ill.

Worker absenteeism has negative consequences. These include the reduction in firm output, resulting from the decrease in hours worked, lower productivity associated with higher overall absence and under-utilization of productive capacity (Allen 1983). It also generates an increase in costs per payroll hour resulting from overtime, temporary help and other adjustments made. Moreover, absenteeism is a problem that compromises the quality and timeliness of medical services, thus negatively affecting patient welfare.

In view of such adverse effects, employers and/or managers should attempt to adopt policies to address absence unrelated to illness. This, however, requires some knowledge of the factors that influence physicians’ and health care personnel’s behaviour, and result in undesirable practices such as absenteeism.

Individual preferences
The economic model of human behaviour assumes that individuals are guided by pure self-interest, and seek to maximize their utility subject to the constraints imposed mainly by income and time. Therefore, rational individuals are expected to resort to activities such as cheating, if they perceive that the marginal benefit of such action exceeds the marginal costs. According to this approach, absence is seen as an attempt by workers to bring actual hours worked more into line with desired hours, by effectively working less than the official hours required by the job.

It is well known, however, that human self-interest is not always material and human actions are recognized to be the response to a mixture of extrinsic and intrinsic motivation (Deci 1975). Health workers are no exception to this, as Franco et al. (2002) argue. In consequence, individuals are concerned not only about their income and time, but also about other factors, such as socialization, recognition, work morale and professional ethics. As a result, depending on their preferences, some workers are more inclined than others to be absent.

Past research has shown that absenteeism patterns vary with personal characteristics such as sex, age, marital status of workers and living habits (Winkler 1980; Johansson and Palme 1996). Females are found to be absent more frequently but for shorter periods than males, while older workers are absent less frequently but for longer periods than younger workers. In addition, marriage has been found to result in more stable employment among males. These studies highlight the importance of knowing workers’ absentee patterns, as a way to predict current absenteeism levels as well as to capture intangible variables such as proclivity to illness and personal preferences for leisure.

Employment and job characteristics
Allen (1982) identifies the size of the employment unit as an important determinant of absenteeism; the larger the employment unit, the higher the absenteeism. The most frequent explanation for this phenomenon is that size decreases communication and group cohesiveness, resulting in lower worker satisfaction. An increase in size also leads to higher bureaucracy, which reduces informal controls associated with higher levels of interpersonal rewards and greater attachment. Thus, a large unit provides an environment in which individuals’ work performance goes more unnoticed.
Other job characteristics that may influence absenteeism include the workload and the physical comfort of the working environment. Shields and Ward (2001) show that nurses respond to an excessive workload by being absent or quitting their jobs.

Issues arising from the ‘public’ or ‘private’ status of the employer are also relevant. Absenteeism and other kinds of opportunistic behaviour are usually more common in public organizations. These institutions are often financed through soft budgets, giving management leeway to be relaxed about financial discipline and general functioning. Moreover, employees within these public facilities work under civil servant status and are reimbursed for their services on a salary basis, irrespective of their output. Civil service regulations tend to limit managerial discretion over recruitment, pay and discipline. In addition, the monitoring system is usually weak and the probability of formal sanctions is low. Under such conditions, individuals may benefit from their informational advantages. The principal-agent problem takes on special relevance when we consider the health care services market. Here, physicians’ specific knowledge allows them to play a central role in the decision-making process at the health care facility. Moreover, as health services are diverse and heterogeneous, and their quality is difficult to measure, the manager cannot fully observe and evaluate physicians’ input and performance. As a result, physicians are allowed plenty of discretion as to their preferred level of effort or effective time at work.

It might be argued, following Arrow (1963), that the significance of the medical profession’s disciplinary and ethical codes provides incentives to restrain physicians from exploiting their information advantage. However, professionalism may fail (see Rose-Ackerman 1996). Absenteeism and other kinds of opportunistic behaviour can emerge if the inculcation of professional norms has not been effective, and, even if it succeeds, strong professional norms may themselves conflict with institutional goals.

Furthermore, the specific context of developing countries contributes to the spread of activities such as absenteeism. Governments in these countries often experience financial shortages, which result in insufficient money or resources for public institutions. In the health sector, shortages of medicines and other supplies, and delays in workers’ payments, are common. Health care workers usually hold more than one job so as to increase their income and, frequently, are absent from their official work to attend second jobs. Additionally, in many of these countries, absenteeism and other practices, such as receiving informal payments, are often ‘accepted and recognized’ as a part of the cultural environment, which makes them more difficult to discourage.

The sick-leave policy

There are different types of sick-leave policies. Some institute a concrete number of sick-leave days that, if not used, are lost at the end of the year. Such a policy may or may not require workers to prove illness. Others recognize good employee attendance by paying for each unused sick-leave day. Absenteeism has been shown to increase with the permitted number of sick-leave days and with the sick-leave pay (Chatterji and Tilley 2002). However, it is assumed to decrease if unused sick-leave days are paid at the end of the year, or alternatively, workers are allowed to accumulate sick-leave days and apply them to early retirement. The effect of such a policy depends on the size of the reward (Winkler 1980).

The reform

The Costa Rican health care system underwent significant changes during the 1990s. Before the reforms, health care in Costa Rica was primarily financed and provided by the government, who allocated funds to public facilities following historical spending patterns. Physicians and health care personnel worked at these facilities under civil servant status and were paid a fixed monthly salary. Facilities had a very weak monitoring system and no credible system of sanctions. As a result, activities such as moonlighting, informal payments (the so-called ‘biombos’) and absenteeism were widespread in Costa Rican public hospitals. Among these activities, absenteeism was reported to be prevalent, with higher rates than in other public services. Physicians and health care personnel were easily able to take unscheduled days off, with no apparent adverse consequences, and public hospitals showed an organizational culture that was highly permissive towards absenteeism (Cercone et al. 2000).

In addition, health care services were mainly offered through hospital services, showing a lack of coordination among the different levels of health care. Therefore, specialized public hospitals were overcrowded and people in rural areas had difficulties accessing primary care. While the system generally offered free access and practically universal coverage, it also suffered from a lack of incentives in health care production and delivery, little concern for costs, poor quality of care and indifference to patient satisfaction.

All these problems led to major structural reforms in the organization, financing and delivery of services in Costa Rica’s health system in 1994. The reforms had the overall objectives of extending primary care access as well as promoting management autonomy for hospitals and primary care facilities. Moreover, a clear commitment to universal coverage and the public financing role of the Social Security Institute – or Caja Costarricense del Seguro Social (CCSS) – was kept, while the Ministry of Health assumed governance and regulatory functions. Thus, as a part of the reform, in 1994 the Ministry of Health transferred responsibility for primary care provision to the CCSS, which led to the development of a population-based model of primary care. Health areas and more than 800 basic health teams – known as Equipos Básicos de Atención Integral a la Salud (EBAIS) – were
established so as to decentralize health care services and offer preventive and basic services to the entire population.

At the centre of the reforms was the development of provider reimbursement systems that linked resources with outcomes through the introduction of management or performance contracts between the Social Security Institute and its health care facilities. Every hospital and health area committed itself to certain goals, which were negotiated with the Social Security Institute. As a result of the implementation of such contracts, retrospective budgets, covering total public hospital expenditure, were replaced with a prospective payment system, transferring some risk to hospitals.

Furthermore, public hospitals were transformed into decentralized organizations. The Decentralization Law (Law number 7852), approved in 1998, and subsequent legislative development provided the normative instrument by which public hospitals were decentralized and granted autonomous management. This law also served as the normative basis for the separation of functions in the provision and procurement of services and conferred instrumental legal entity to the ‘decentralized hospitals’, granting them autonomy in budgetary procurement, and administrative and human resource management.

Hospital performance contracts were implemented through a gradual reform process, which began with a few hospitals in 1997, and was completed in the 29 public hospitals by the year 2000. The goals included in these contracts were mainly aimed at achieving quality improvements and better utilization of hospital resources. Indicators such as intra-hospital infection, mortality and re-admission rates were chosen to evaluate quality improvements. Reducing waiting lists and the average length of stay as well as absence rates among health care personnel were the main goals selected to improve utilization of hospital resources. Indicators such as intra-hospital infection, mortality and re-admission rates were chosen to evaluate quality improvements. Reducing waiting lists and the average length of stay as well as absence rates among health care personnel were the main goals selected to improve utilization of hospital resources (Sojo 2000).

Paradoxically, unlike other variables, the reduction of absence rates was never included as a quantitative target. In order to reduce absenteeism, management contracts included the sick-leave policy of not substituting absentee workers, as a means of activating peer pressure mechanisms. This measure was also aimed at reducing overtime costs and, in general, costs from overstaffed hospitals.

Contract requirements were enforced through a punishment and reward system based on target achievement. Hospital managers were awarded extra funds for reaching the goals specified in the performance contracts. These funds could be used to buy more equipment and/or reward those health care groups that showed a high performance level and commitment with hospital goals. Performance rewards included permission and support for attending seminars or workshops and training at preferred locations.

In addition, the Social Security Institute’s central administration had the power to audit and sanction hospitals. Sanctions took the form of the withdrawal of incentives. Further, managers were to be named for 5 years and could be re-elected or removed from their post if they failed to comply with the guidelines of management contracts.

The introduction of the population-based model notably increased access in rural areas and provided a closer coordination between primary care providers and hospitals. Moreover, hospital average length of stay and waiting lists were reduced, while hospital infections and intra-hospital mortality rates decreased during the reform period (see World Bank 2002).

We question whether performance contracts were helpful in reducing absence rates among health care personnel in public hospitals. We believe that the punishment and reward system, together with the sick-leave policy described earlier, may have had a positive impact on absence rates. First, the sick-leave policy might have activated peer pressure mechanisms among health workers. In addition, the team incentive system might have contributed to reinforce the expected effects of the sick-leave policy by changing both work group norms and the organizational culture at Costa Rican hospitals. As Brooke (1986) has shown, the level of permissiveness within an organization usually depends on the leadership style, the incentive/reward system and work group norms. Furthermore, new control mechanisms and overall changes in hospital management may have reinforced health care workers’ commitment to organizational goals, which in turn may have reduced absence rates as direct linkages between commitment and absenteeism have already been proved (Steers 1977).

In the next section we examine the impact of hospital reforms on worker absence.

Data, methodology and results

We obtained data on health care personnel absence, specifically cumulative sick-leave days. Average absence figures were then computed for each hospital and year by dividing total days of absence by total number of health staff. We have records for the 29 public hospitals over the period 1995–2001, so the sample size is 203.

The data set has one major attraction and two deficiencies. Its most attractive feature is that the data were collected from the Social Security Institute (CCSS), whose data set includes a large number of variables and indicators pertaining to the Costa Rican health sector. This is not common in many developing countries where a number of activities and services remain unrecorded, with data on absenteeism being particularly difficult to obtain. The limitations of the data set are that we measure total unscheduled absence, which, unfortunately, makes no distinction between voluntary and involuntary absence. Moreover, we lack detailed information about long-term or short-term absences, length of service of absent employees, differences in absence rates between males and females, and between doctors, nurses and other health
care staff. This data would have allowed us to test some of the theoretical hypotheses summarized in the above section.

Table 1 shows the average value and dispersion of absence rates for the period 1995–2001. A cursory look at the third row in the table reveals that absenteeism increased during the period considered. In order to detect potential differences relating to size, we separate hospitals into two groups: large hospitals (200 or more beds), and small hospitals (less than 200 beds).

The first row in Table 1 shows that the mean absence rate in small hospitals remains more or less stable around the 1995 level. By contrast, large hospitals show a clear increasing trend, especially from 1997 onwards.

Table 2 presents the average value and dispersion of absence rates, calculated by region. The first notable feature is an upward trend in absence rates in all regions except Chorotega and the Central Norte region. However, the Central Norte region registers the highest mean absence rates, which are well above the overall average. A plausible explanation for this is that this region is located in the metropolitan area, where demand for health care services is higher and health care personnel may be working under greater pressure. Moreover, the Central Norte region has been identified as one of the areas where primary care still remains to be consolidated (World Bank 2002).

In order to check the impact of the adoption of management contracts on absenteeism, we construct two samples of observations: hospitals with and without management agreements. We use the non-parametric Mann–Whitney test, which allows us to compare the two samples and test whether they have non-identical distributions. As shown in Table 3, we reject the null hypothesis that the populations are the same at a 5% significance level, which means that there is a significant difference in the absence rates between the two groups of hospitals, with and without management contracts. Moreover, the sum

### Table 1. Annual mean and standard deviation of absence rate for small and large hospitals, 1995–2001

<table>
<thead>
<tr>
<th>Year</th>
<th>Small hospitals (&lt;200 beds)</th>
<th>Large hospitals (≥200 beds)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
</tr>
<tr>
<td>1995</td>
<td>15.2 (5.7)</td>
<td>14.0 (4.1)</td>
<td>14.8 (4.9)</td>
</tr>
<tr>
<td>1996</td>
<td>13.9 (4.5)</td>
<td>15.6 (2.4)</td>
<td>14.4 (3.9)</td>
</tr>
<tr>
<td>1997</td>
<td>16.6 (4.8)</td>
<td>16.8 (3.0)</td>
<td>16.7 (4.2)</td>
</tr>
<tr>
<td>1998</td>
<td>15.7 (4.9)</td>
<td>16.9 (4.1)</td>
<td>16.1 (4.7)</td>
</tr>
<tr>
<td>1999</td>
<td>15.9 (5.1)</td>
<td>17.6 (4.6)</td>
<td>16.5 (4.9)</td>
</tr>
<tr>
<td>2000</td>
<td>16.7 (4.8)</td>
<td>18.9 (3.3)</td>
<td>17.6 (4.4)</td>
</tr>
<tr>
<td>2001</td>
<td>15.9 (4.8)</td>
<td>19.1 (3.2)</td>
<td>16.9 (4.0)</td>
</tr>
</tbody>
</table>

### Table 2. Annual mean and standard deviation of absence rate for hospitals by region, 1995–2001

<table>
<thead>
<tr>
<th>Year</th>
<th>National hospitals</th>
<th>Central Norte Region</th>
<th>Central Sur Region</th>
<th>Huetar Norte Region</th>
<th>Chorotega Region</th>
<th>Pacifico Central Region</th>
<th>Huetar Atlantico Region</th>
<th>Brunca Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
</tr>
<tr>
<td>1995</td>
<td>14.2 (1.5)</td>
<td>26.0 (4.0)</td>
<td>16.0 (3.6)</td>
<td>14.5 (2.8)</td>
<td>14.7 (7.2)</td>
<td>16.1 (2.1)</td>
<td>14.9 (1.3)</td>
<td>14.0 (3.1)</td>
</tr>
<tr>
<td>1996</td>
<td>14.3 (1.9)</td>
<td>21.2 (5.4)</td>
<td>14.5 (4.4)</td>
<td>10.7 (5.4)</td>
<td>16.7 (4.9)</td>
<td>16.9 (1.7)</td>
<td>15.3 (0.8)</td>
<td>13.1 (3.5)</td>
</tr>
<tr>
<td>1997</td>
<td>15.0 (1.8)</td>
<td>23.7 (5.1)</td>
<td>15.7 (2.9)</td>
<td>12.5 (4.5)</td>
<td>15.7 (4.2)</td>
<td>17.8 (1.4)</td>
<td>16.6 (0.4)</td>
<td>16.1 (3.7)</td>
</tr>
<tr>
<td>1998</td>
<td>15.3 (2.0)</td>
<td>24.2 (4.7)</td>
<td>14.2 (0.8)</td>
<td>12.1 (4.7)</td>
<td>13.0 (4.2)</td>
<td>16.7 (0.2)</td>
<td>16.8 (1.6)</td>
<td>17.7 (5.3)</td>
</tr>
<tr>
<td>1999</td>
<td>14.3 (1.7)</td>
<td>22.9 (8.1)</td>
<td>15.9 (0.6)</td>
<td>13.9 (3.1)</td>
<td>13.7 (6.2)</td>
<td>18.4 (4.6)</td>
<td>18.7 (6.3)</td>
<td>15.4 (4.0)</td>
</tr>
<tr>
<td>2000</td>
<td>16.2 (2.7)</td>
<td>20.6 (3.4)</td>
<td>17.9 (4.1)</td>
<td>16.9 (3.3)</td>
<td>15.5 (8.8)</td>
<td>22.3 (2.2)</td>
<td>16.1 (9.9)</td>
<td>16.9 (3.5)</td>
</tr>
<tr>
<td>2001</td>
<td>16.1 (3.9)</td>
<td>22.0 (4.9)</td>
<td>18.9 (4.7)</td>
<td>16.7 (1.7)</td>
<td>14.5 (7.9)</td>
<td>20.2 (4.6)</td>
<td>17.7 (6.7)</td>
<td>15.8 (4.5)</td>
</tr>
</tbody>
</table>

### Table 3. Effect of performance contracts on hospital absence rates

<table>
<thead>
<tr>
<th>Grouping variable/management contracts</th>
<th>n</th>
<th>Mean rank</th>
<th>Sum of ranks</th>
<th>Mean and standard deviation of absence rates</th>
<th>Mann-Whitney test Z (Prob &gt; Z)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospitals Without management contracts</td>
<td>110</td>
<td>90.75</td>
<td>9983</td>
<td>15.2 (4.3)</td>
<td>-2.976 (0.003)*</td>
</tr>
<tr>
<td>With management contracts</td>
<td>93</td>
<td>115.30</td>
<td>10723</td>
<td>17.3 (4.7)</td>
<td>-1.920 (0.056)**</td>
</tr>
<tr>
<td>Small hospitals (&lt;200 beds) Without management contracts</td>
<td>80</td>
<td>61.88</td>
<td>5012</td>
<td>15.0 (4.7)</td>
<td>-1.920 (0.056)**</td>
</tr>
<tr>
<td>With management contracts</td>
<td>52</td>
<td>74.98</td>
<td>3899</td>
<td>16.8 (5.1)</td>
<td>2.017 (0.044)**</td>
</tr>
<tr>
<td>Large hospitals (≥200 beds) Without management contracts</td>
<td>29</td>
<td>29.69</td>
<td>861</td>
<td>15.7 (3.2)</td>
<td>2.017 (0.044)**</td>
</tr>
<tr>
<td>With management contracts</td>
<td>41</td>
<td>39.61</td>
<td>1624</td>
<td>17.9 (4.3)</td>
<td>2.017 (0.044)**</td>
</tr>
</tbody>
</table>

*Statistical significance at 1% level.
**Statistical significance at 5% level.
***Statistical significance at 10%.
of ranks shows hospitals with management agreements to have higher absence rates. This result suggests that the introduction of management contracts might have had a negative effect on absence rates, contributing, in fact, to their increase.

Using the same test to assess whether performance contracts had any influence on absence among health care personnel working at small hospitals, we cannot reject the null hypothesis of no difference between the two groups at a 5% significance level (see Table 3, second row). Management contracts do not seem to have had any impact on absence rates in small hospitals.

Finally, we test the influence of management contracts on absence rates in large hospitals (Table 3, third row). The null hypothesis of no difference between the two groups is rejected at a significance level of 5%. Analyzing the ranks, we see that the absence rate is higher in large hospitals with management agreements.

Although there is a difference between absence rates of both large hospitals and hospitals in general with and without contracts, this difference is not statistically significant for small hospitals (at the 5% level).

Our results indicate, therefore, that, in general terms, the effect of performance contracts on absence rates is negative. However, we find that this general effect is mainly due to the impact on large hospitals; the impact on absence rates in small hospitals is more limited. These conclusions appear to be confirmed by mean absence rates according to hospital size, shown in Table 3.

We have used the entire sample of hospitals as we consider this enriches our analysis. However, we have to interpret these results carefully. Using a sample of hospitals subscribing to management contracts gradually over the period 1995–2001 raises problems of sample homogeneity and time effects. Moreover, although selection of hospitals to begin contract implementation was mainly random (based on location criteria, starting with those hospitals located in the metropolitan area, followed by regional hospitals), there might be some potential biases coming from this selection. Further, the difference in the impact of the reforms on small and large hospitals shown in Table 3 is very small when we consider the significance level of 5% (0.065 and 0.044 for small and large hospitals, respectively). Therefore, it is worth evaluating the differences in absence rates before and after the implementation of management contracts to confirm the above results.

Thus, we build two samples: the first includes hospital observations for years 1995 and 1996, when management agreements had not been implemented, and the second includes hospital observations for years 2001 and 2002, when every hospital had subscribed to these contracts. In Table 4 we present the results from the Mann–Whitney tests carried out to test absence changes before and after implementation of management contracts.

We observe that there is a significant difference between absence rates before and after contracts implementation for both large hospitals and hospitals in general, while this difference is not significant for small hospitals. The difference in the impact of performance contracts on small and large hospitals is more evident (0.067 and 0.001 for small and large hospitals, respectively). These results reinforce the direction of those presented in Table 3 when using the entire sample. Moreover, mean absences (Table 4) reveal clearly that absence increases are higher for large hospitals.

### Discussion and policy implications

This paper has endeavoured to assess the impact of hospital reforms on worker absence over the period (1995–2001). One might expect absence rates to decrease over time as a result of reforms. However, we find the introduction of management contracts to have had a negative impact on absence rates, resulting in an increase over the period considered.

Two potential responses might be expected from management agreements that include a policy of not substituting absent workers. On the one hand, as workloads increase due to the absence of a co-worker, peer pressure may be exerted on the absent co-worker to attend work on a regular basis. On the other hand, the increased workload of workers on duty might induce them to be absent.

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**Table 4. Hospital absence rates before and after the health care reforms**

<table>
<thead>
<tr>
<th>Grouping variable/management contracts</th>
<th>n</th>
<th>Mean rank</th>
<th>Sum of ranks</th>
<th>Mean and standard deviation of absence rates</th>
<th>Mann–Whitney test Z (Prob &gt; Z)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospitals</td>
<td>58</td>
<td>48.06</td>
<td>2787.5</td>
<td>14.6 (4.5)</td>
<td>-3.353 (0.001)*</td>
</tr>
<tr>
<td>Before management contracts</td>
<td>58</td>
<td>68.94</td>
<td>3998.5</td>
<td>17.3 (4.7)</td>
<td>-1.907 (0.067)**</td>
</tr>
<tr>
<td>After management contracts</td>
<td>38</td>
<td>33.68</td>
<td>1280</td>
<td>14.5 (5.1)</td>
<td>-0.395 (0.696)</td>
</tr>
<tr>
<td>Small hospitals (&lt;200 beds)</td>
<td>38</td>
<td>43.32</td>
<td>1646</td>
<td>16.3 (4.6)</td>
<td>2.017 (0.001)*</td>
</tr>
<tr>
<td>Before management contracts</td>
<td>38</td>
<td>14.60</td>
<td>292</td>
<td>14.8 (2.9)</td>
<td>-1.407 (0.160)</td>
</tr>
<tr>
<td>After management contracts</td>
<td>20</td>
<td>26.40</td>
<td>528</td>
<td>19.0 (4.4)</td>
<td>-0.316 (0.754)</td>
</tr>
<tr>
<td>Large hospitals (≥200 beds)</td>
<td>20</td>
<td>43.20</td>
<td>1646</td>
<td>16.3 (4.6)</td>
<td>2.017 (0.001)*</td>
</tr>
</tbody>
</table>

*Statistical significance at 1% level.
**Statistical significance at 5% level.
***Statistical significance at 10% level.
If peer pressure counteracts the perverse effects of such a policy, then hospital absence rates might decrease.

Peer pressure mechanisms would probably have been activated if the sick-leave policy had been accompanied by effective implementation of the team reward-incentive system. Unfortunately, due to union resistance, such incentives were never passed down to reward workers and, instead, remained at the health care facility level, being used to buy new hospital equipment. Further, when expectations by staff are not met, rewards can act as an important dis incentive, which might have contributed to worsen absence behaviour.

In addition, performance contracts did reinforce control and punishment mechanisms at organizational level, but not at individual level. Moreover, such mechanisms were not effective in controlling absences, as the contracts did not determine an optimal target level of absenteeism.

Therefore, in a context of a highly permissive organizational culture and in the absence of effective incentive and control systems for workers, the most plausible response to the sick-leave policy was to be absent in order to avoid dealing with a higher workload. A combination of these factors may explain the failure of the contracts to reduce worker absence rates and thus justify our results.

However, other factors may explain the evolution of Costa Rican public hospital absence rates. During the analyzed period, demand for hospital services increased as a result of multiple factors such as the universal coverage commitment (which does not prevent access and demand for services by newcomers as occurs in other health care systems), immigration increases, patients from neighbouring countries accessing Costa Rican public health care services, higher levels of violence and lack of consolidation of primary care. Demand increases created long waiting lists. However, no new personnel were recruited in order to respond to such pressure and reduce waiting times because costs had to be kept down. As a result, the workload of Costa Rican health care workers increased notably, which might have affected absence patterns.

Moreover, the ratio of nurses to doctors in most Costa Rican public hospitals is low (it varies between 0.25 to 1.35 nurses per doctor) in comparison with the desirable ratio of at least two nurses to one physician, according to the World Bank (1993). This low ratio is explained by the existence of both oversupply of doctors and scarcity of nurses. Therefore, nurses usually carry a higher workload than physicians and, in consequence, absences are very common among them. Under such circumstances, doctors may either carry out nurses’ tasks in addition to theirs or slacken their performance level, or alternatively be absent themselves. The latter is more common in Costa Rican public hospitals where physicians are civil servants with a guaranteed position and receive a fixed monthly salary independent of their performance.

Imbalances in the number of nurses and physicians exist not only in Costa Rica but also in other Central American countries. Here, physicians usually earn two to three times more than nurses and often many more times the salary of technicians (Fiedler 2004). This results in excessive personnel costs, but also acts as a dis incentive for students to train as nurses. In addition, the low remuneration and heavy workload of nurses (due to their low numbers) results in high levels of resignations. This situation is aggravated by poor career structures and lack of professional development opportunities and prestige, which characterizes nursing not only in Costa Rica but also in many developing countries (Buchan 2004). Thus, many Costa Rican nurses have emigrated during recent years to work as nurses in Canada and the United States. Further, in Costa Rica, the autonomous national university maintains complete control over medical and nursing school entry requirements and enrolments. This makes it difficult for the government to implement policies to alter them and attempt to reduce professional imbalances.

In this context, the sick-leave policy included in the hospital management reform might have had unexpected negative effects on worker absences. Thus, reforms might have contributed to increase absenteeism among nurses and adversely affect doctor motivation, increasing absences among them too. This analysis leads us to identify the need for policies tackling health care personnel imbalances in order to attain more successful outcomes from reforms.

The negative impact of the hospital management reforms on absenteeism is also revealed when we analyze the effect of management contracts on absence rates in large hospitals. However, our results show that management contracts did not have such a negative impact on absence rates in small hospitals. Hospital size differences may explain variations in the response of hospitals to the reforms. Size increases create a work environment in which individual work performance is less noticeable and, therefore, peer pressure mechanisms maybe less successful (Allen 1982). Further, because work performance tends to go more unnoticed in large hospitals, the probability of detection and punishment is lower than in small hospitals (see Jaen and Paravisini 2001). Alcazar and Andrade (2001) also show that as the number of hospital personnel increases, the exercise of supervision becomes more difficult and costly, and the perceived probability of detection of absentee workers is lower. In addition, in a large hospital, communication and identification with the goals of the organization is lower. Thus, contrary to what happened in small hospitals, staff in large Costa Rican hospitals did not get involved in the reforms. Furthermore, scarcity of nurses was more notable in small hospitals, while oversupply of doctors was higher in large hospitals. Therefore, managers of small hospitals were under greater pressure to reduce absenteeism in order to comply with the goals established in the contracts, such as reducing waiting lists. Large hospitals could achieve the targets more easily without being so concerned about high levels.
of absenteeism, as they had a pool of nurses in the hospital staff to take over shifts and make substitutions.

Our results clearly indicate that the sick-leave policy and management contracts design and implementation should be reconsidered in order to have more positive impact on worker absenteeism and hospital performance. As in Costa Rica, poorly designed contracts, lack of monitoring and commitment to comply with the promised incentives have been identified in other countries where management contracts have been implemented (Shirley and Xu 2001). However, these contracts have been effective in other countries such as Cambodia, where highly experienced non-civil-servant managers were contracted and cost-sharing revenue mechanisms and performance-based incentives were introduced and effectively implemented, promoting efficient management and better staff performance (Soeters and Griffiths 2003).

Absenteeism problems among health care personnel have also been faced through mechanisms other than management contracts and sick-leave policies. The introduction of activity-linked incentives for personnel in Chad increased their motivation to go to work (Zachariah et al. 2001), while interventions involving patients, providers and communities have been implemented in other countries to fight corruption and absenteeism (Nigenda and Machado 2000).

The evidence presented here suggests that other policy measures should be undertaken in order to improve health care worker attendance:

(1) A renewed sick-leave policy should be instituted: for instance, limiting the number of sick-leave days per worker, per year. There are also different types of incentive programmes that reward good employee attendance in order to encourage improvement; for example, paying workers for unused sick-leave days, allowing employees to cash-in unused sick days at the end of each year or giving employees a bonus for every month of uninterrupted attendance.

(2) Improving absenteeism should be included as an explicit goal: Thanks to the implementation of management agreements, a set of critical tasks or operational goals was defined. However, although improving absenteeism was included in the reform agenda, it was not clearly determined as a goal to be evaluated and monitored.

(3) Implementation of an effective monitoring and reward system: A negative response to a sick-leave policy is not unusual in an environment where the monitoring system and subsequent sanctions are very weak, allowing health care workers a wide margin of discretion in their time schedule and activities. Although the contracts did reinforce control and punishment mechanisms at organizational level, further steps should be taken to reinforce the control and sanctioning system for health care personnel in hospitals. This is also a way to reward workers for good behaviour. Similarly, the extra funds hospitals may receive whenever they comply with the selected targets should be directed to rewarding the best workers.

(4) Improved informational systems: Even though Costa Rica has been shown to have the most advanced contracts in terms of informational systems and monitoring and evaluation mechanisms within the Latin America and Caribbean region (Abramso 2001), there is room for further improvement in the information systems and, consequently, in the evaluation of contracts. More detailed attendance records are required in order to monitor attendance trends. This would make it easier to detect possible absenteeism patterns. This information could be used by hospital management to design an effective attendance management programme, through the identification of specific areas that may be affecting worker absence.

(5) Changes in legislation and CCSS health care personnel regulations: It is difficult to alter the civil servant status, though it would be desirable to change worker promotion policies and recruit new personnel, when needed, on a contractual basis in order to provide more flexibility in their management. Career development at Costa Rican public facilities depends only on the number of years working at the institution. Merit-based promotion mechanisms are required to improve behaviour among CCSS workers. It is well known that implicit incentives, in the form of career concerns, inside or outside the organization are very important (Dewatripont et al. 1999), as they play a particularly key role in public institutions where formal incentives are often constrained. Employees with low absence rates have been found to be more satisfied with opportunities for promotion and upgrading.

(6) Supporting improvements in Costa Rican nurses pay, working career, scheduling and prestige: in order to modulate the factors that may push them to be absent, look for jobs elsewhere or discourage students from becoming nurses.

(7) Improved coordination among primary and specialized care: Better coordination could help to reduce demand pressure at the hospital level. Educational campaigns to direct people to primary care centres as the first stage of care, as well as better training and tools for primary care doctors are needed.

Some of these measures might meet with resistance from unions, as occurred during the reforms analyzed here as well as in many other Latin American countries. Reaching an agreement with unions is one of the challenges involved in modernizing human management resources within the CCSS.

In analyzing the Costa Rican experience, this paper has highlighted the importance of designing adequate policies and incentive systems for health care personnel and has offered plausible solutions to the problem of absenteeism. Costa Rica, where reforms led to a considerable improvement of information systems, is an example to be followed by other countries. Information that previously went...
uncollected started to be registered, leading to the construction of complete databases on worker absences and other hospital quality and quantity indicators. In addition, despite the failure to reduce absence rates, the Costa Rican experience is highly valuable because, in contrast to other countries, they designed and implemented a sick-leave policy to discourage absenteeism. Further efforts should be made in this direction.

Endnotes

1 These figures represent the percentage of medical personnel at primary care clinics who were absent. They include authorized leave and unjustifiable or unexplained absences.

References


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