

Investigating the Influence of Per-Case Plan on Treatment Capacity Utilization and Staff Efficiency in the Hospitals of Isfahan

Ali Attafar

Department of Management, University of Isfahan

Isfahan, Iran

E-mail: attafar@yahoo.com, Phone: (311) 7935216

Nastaran Simar Asl

Department of Management, University of Isfahan

Isfahan, Iran

E-mail: nastaran_simar@yahoo.com, Phone: (311) 7932040

Arash Shahin (Corresponding author)

Department of Management, University of Isfahan

Isfahan, Iran

E-mail: arashshahin@hotmail.com, Phone: (311) 7932040

Abstract

The aim of this paper is to investigate the "payment of extra money per extra work" or simply "Per-Case" plan and its influence on the utilization of treatment capacities and hospital staff efficiency in hospitals under the supervision of social security organization of Isfahan province, Iran. The research population includes hospitals' staff consisting of physicians, Para medicines and other employees. The research data has been gathered via questionnaire, interview and library documents. The findings indicate that the implementation of Per-Case plan affects the level of hospital staff motivation and also increases the number of hospital beds occupied by patients and the number of surgeries operated. Per-Case has resulted in decrease of the duration of patients' stay in the hospital and increase of patients' satisfaction about the services provided.

Keywords: Per-case plan, Efficiency, Treatment capacity, Reward system, Hospital, Isfahan

1. Introduction

Due to the high mortality rate in developing countries, making improvement in health care services is a prerequisite for promoting the quality of life and improving economic development (WHO, 2009). The economic importance of hospitals and health systems to communities is growing and is clearly reflected in the significance of the role of their staff (Longest and Lin, 2005). There are many problems regarding health care services in low-income developing countries including management and administrative problems (Fleba, 2005). Welfare in every society depends on its level of growth and development. Clearly, efficiency and effectiveness of every society's institutions and organizations play a major role in its development. Almost all human beings have daily interaction with organizations and spend a substantial portion of their lives in them and the performance of organizations heavily is dependent upon the performance of their staff.

Besides factors of staff's skills, organizational factors such as capital equipment, technology, organizational processes, culture, management and human resource policies may have influences on worker Performance (Huckman and Pisano, 2006). This paper aims to examine the view points of physicians, paramedical and non-medical staff of Isfahan province in Iran regarding the influence of Per-Case plan implementation on hospital staff motivation, efficiency and utilization of hospital capacities and patients' satisfaction about the provided medical services. For this purpose, in the following the incentive plans and their importance in healthcare systems are demonstrated. The research methodology is then described and findings are discussed and respectively, conclusions are made.

2. Incentive plans in healthcare services

There is a consensus among practitioners that a great deal of disagreements exists about measuring health care performance which is strongly dependent on the staff performance. Healthcare officials have long recognized that the manner in which medical services providers are paid for their services has a great effect on the way they deliver those services. Generally speaking, healthcare financing systems can operate through the command-and-control of providers or by giving providers incentives to operate efficiently. In fact, competitive markets are characterized by the latter approach (Kawabuchi, 2000).

Today, Hospital leaders tend to measure, report and sustain improvements in patient care quality and safety more than the past (Fitzpatrick and Faan, 2006). Based in the findings of Adler et al. (2003), physicians or hospital staff are not sufficiently motivated by human resource management practices of hospitals and healthcare systems to improve the quality and quantity of services they provide. Results of a field study conducted on staff and managers of a training hospital affiliated to Qazvin University of Medical Sciences revealed that adequate salary, suitable working conditions and job security are the three important job motivators from staff's viewpoints out of which, adequate salary got the highest score (Raeisi and Mohebbifar, 2006). In healthcare compensation plans, prospective payment mechanisms such as the Medicare pricing system are designed to create incentives that motivate hospitals to control the use of care, improve the efficiency of resource use and also contain costs (Khaliq et al., 2003). Similarly, Per-Case plan is one of the compensation methods based on staff's performance in hospitals and healthcare centres. In other words, employees earn more as they do more. In this plan, the money-volume of general and specialized physicians' performance is monthly calculated and after routine reductions related to the legal considerations (e.g. tax) and health centres' share, the rest is paid to them (SSOIP, 1996).

3. Research methodology

This research is typically a field study in which, questionnaire and interview techniques are used to collect the required data. The questionnaire contains 41 questions out of which, 40 questions are closed. The research sample includes 22 physicians, 94 medical staff and 34 non-medical staff who all worked in public hospitals affiliated to the Social Security Organization of Isfahan province in Iran. Five point Likert scale is used as answer options in the questionnaire ranging from very low to very high. In addition to the questionnaire, few interviews are conducted with 25 physicians, 80 paramedical staff and 35 non-medical staff. The collected data is analyzed using SPSS software. The Cronbach's alpha coefficient is calculated as an indicator of data reliability and the value of 0.91 is obtained, which is satisfactory.

4. Findings

As it is indicated in Table 1, the observed t value represents a significant difference between the opinions of the three groups of physicians, paramedical staff and others. In other words, all of the three groups believe that the extra pay affects the occupation rate of hospital beds. It should be noted that the increase in occupation rate of hospital beds does not indicate a positive effect of Per-Case plan; however, the quality of the services provided to customers should be proved in order to claim the real effects of this plan. According to Table 2, the paramedical and other staff believe that the Per-Case plan is effective on the number of surgeries operated and particularly on small surgeries. In other words, paramedical and other staff consider this plan to have high impact on the number of surgeries done, while physicians consider it to have moderate effects. Based on the results presented in Table 1, it is apparent that the Per-Case plan influences the occupation rate of hospital beds and as a result has a direct relationship with number of surgeries operated. Only physicians think that Per-Case plan does not affect the number of surgeries. Therefore, this plan should be implemented in a way that it really motivates physicians to operate more with various surgeries.

As it is addressed in Table 3, paramedical staff has a positive attitude towards the impact of Per-Case plan on the decrease of duration of patients' stay at hospital as there is a significant difference between the sample mean and the theoretical mean of research population. However, medical staff believe that the plan has a strong effect on patients' duration of stay at hospital where as physicians and other staff consider this impact to be weak. The findings indicate that if patients do their medical tests and their disease- related radiographies in out-patient departments and later are hospitalized or if they have out-patient surgeries where possible instead of being hospitalized, the duration of their stay at hospital decreases. Also, avoiding excessive medical examinations and radiographies lead to a decrease in patients' average duration of hospitalization. Based on the research findings, physicians do not consider Per-case plan implementation influential on number of visits to patients before and after surgeries while paramedical and other staff think vice-versa (Table 4).

In fact, physicians believe that this plan has a low or very low effect on the number of visits done to patients whereas the other groups believe that the impact is high. Based on the regulations, physicians are only paid for a visit to each case before the surgery and are not paid for any visit after that, so they are not motivated to visit their patients after surgeries and this could be the reason for the difference between the views of physicians and the other two groups. In order to adopt a comprehensive approach towards the impact of Per-Case plan on the application of treatment capacities in hospitals, the general view of physicians, paramedical and other staff is analyzed. It should be noted that all of the three groups believe that the implementation of this plan has a positive effect on the application of curative capacities of hospitals as it is addressed in Table 5. The observed F-value in Table 5, indicates that there is a significant difference among the mean-value of the three groups.

The findings imply that there is a difference between physicians and paramedical staff in this regard as paramedical staff has a much positive view toward the effect of Per-Case plan on the application of curative capacities than physicians. In fact, the quantitative increase in the curative services delivered does not necessarily indicate their high quality. In many organizations, mismanagement exists and it worsens when management's attention is exclusively attracted to quantity of produced goods or delivered services rather to their quality. Therefore, it is suggested that in any incentive plan, sufficient attention be devoted to both aspects of goods and services' quantity as well as quality. As it is demonstrated in Table 6, the observed t-value in physicians and paramedical staff is greater than the critical value, therefore these two groups believe that the Per-Case plan influences the level of staff efficiency whereas other staff do not think so. Perhaps this is due to little application of such incentives for hospital staff other than physicians and paramedical staff.

Physicians believe in the influence the Per-case plan has on employees' level of efficiency and the relationship between services delivered to patients and their price but they tend to assign low level of influence, Per-Case plan may have on the quality of services and the extent to which, these services are monitored and controlled. In contrast, paramedical and other staff believe in moderate impact of such plan on the mentioned variables (Table 7). While physicians and paramedical staff consider Per-Case plan to affect staff level of motivation, based on the viewpoints of other staff, there is no relationship between the implementation of this plan and staff level of motivation (Table 8). Because non-medical staff are not provided with the benefits of this plan as much as physicians and paramedical staff, their responses to this research question might be biased towards their personal benefits. In fact, Per-Case plan has little benefit for hospital non-medical staff and its implementation has little influence on their level of motivation. Observed t-value for all of the three groups in Table 9 is greater than the critical value at 95% level of confidence, which indicates that all of the three groups find the Per-Case plan effective on patients' level of satisfaction.

5. Discussion and conclusions

Based on the research findings it is concluded that the Per-Case plan influences the application of treatment capacities. Also, physicians and paramedical staff believed that this plan affected the level of hospital Staff efficiency, while none of the three groups believed in the impact the Per-case plan has on the quality of services provided and the degree to which services are monitored. According to the interviews conducted with hospital Staff, 73% of respondents (88% of physicians, 75% of paramedical staff and 57% of other staff) believed that implementation of this plan positively affects their efficiency. In addition, based on the views of physicians and paramedical staff, Per-Case plan affects staff motivation and patients' satisfaction. The Social Security Organization which monitors several hospitals uses incentive plans such as the Per-Case plan to motivate the hospital staff. This plan is one of the successful incentive plans applied in treatment centres such as hospitals. The results indicate that Per-Case plan positively influences occupation rate of hospital beds, number of surgeries done, number of visits done to patients before and after surgeries and it negatively affects the duration of patients' hospitalization.

These results could be assigned to the application of Per-Case plan only when they are accompanied by fast and high-quality services because these two factors play a significant role in providing treatment services. However, it seems that physicians are more satisfied with this plan than other hospital staff. In addition, all respondents confirmed the impact of this plan on the speed of delivering treatment services. However, according to the findings it is concluded and recommended that the Social Security Organization must take the private sector tariffs into account so that the gap between physicians' payments in public and private hospitals could be bridged. Also, in order to motivate non-medical hospital staff, the proportion of extra payments assigned to them should be increases or their pay-limits must be removed. Finally, in order to increase the quality of delivered services and patients' satisfaction, services must be more accurately monitored.

References

- Adler, P.S., Riley, P., Kwon, S., Signer, J., Lee, B. and Satrasala, R. (2003). "Performance improvement capability: keys to accelerating performance improvement in hospitals. *California Management Review*, 45(2), 12-33.
- SSOIP (1996). Documents related to the treatment management of Social Security Organization of Isfahan Province.
- Fleba, S. (2005). "Hospital development plans". *The European Journal of Health Economics*, 6(4), 322- 326.
- Fitzpatrick, M.A. and Faan, M.S.N. (2006). Using data to drive performance improvement in hospitals. [Online] Available: www.healthmgttech.com (May 15, 2006).

- Huckman, R. and Pisano, G.P. (2006). "The firm specificity of the individual performance: evidence from the cardiac surgery". *Management Science*, 54(2), 473-488.
- Kawabuchi, K. (2000). "Payment systems and considerations of case mix: are diagnosis-related groups applicable in Japan". *Pharmacoeconomics*, 18(S1), 95-110.
- Khaliq, A.A., Broyles, R.W. and Roberson, M. (2003). "The use of hospital care: do insurance status, prospective payment and the unit of payments make a difference?". *Journal of Health & Human Services Administration*. 25(4), 447-472.
- Longest, B.B. and Lin, C.J. (2005). "Can nonprofit hospitals do both well and good?". *Health Care Management Review*, 30(1), 62- 68.
- Raeisi, P. and Mohebbifar, R. (2006). "Job motivators from the employees' and managers' viewpoints in teaching hospitals affiliated to Qazvin University of Medical Sciences". *The Journal of Qazvin Medical Sciences*, 10(38), 101- 108.
- WHO (2009). World Health Organization report. [Online] Available: www.who.int (May 3, 2009).

Table 1. Comparison between three groups based on their views towards the influence of Per-Case plan on the occupation rate of hospital beds

	Mean	SE	SD	t
Physicians	3.432	0.169	0.795	2.55
Paramedical staff	3.718	0.071	0.693	10.11
Other staff	3.309	0.12	0.699	2.57

Table 2. Respondents' views towards the effects of Per-Case plan on the number of surgeries

	Mean	SE	SD	t
Physicians	3.102	0.170	0.797	0.6
Paramedical staff	3.633	0.064	0.622	9.89
Other staff	3.386	0.117	0.680	3.14

Table 3. Respondents' views towards the effects of Per-Case plan on the average duration of patients' stay at hospital

	Mean	SE	SD	t
Physicians	3.193	0.150	0.705	1.28
Paramedical staff	3.755	0.054	0.522	5.57
Other staff	3.165	0.101	0.590	1.63

Table 4. Respondents' views towards the effects of Per-Case plan on the number of visits before and after surgeries

	Mean	SE	SD	t
Physicians	2.894	0.194	0.911	5.46
Paramedical staff	3.755	0.085	0.828	8.88
Other staff	3.608	0.17	0.99	3.57

Table 5. Comparison of physicians, paramedical and other staff towards the impact of Per-Case plan on the application of treatment capacities

	df	Sum of squares	Mean of squares	F
Physicians	2	2.85	1.42	0.0028
Paramedical staff	147	34.41	0.234	-----
Other staff	149	37.27	-----	-----

Table 6. Respondents' views towards the influence of Per-Case plan on staff efficiency

	Mean	SE	SD	t
Physicians	3.591	0.157	0.734	3.76
Paramedical staff	3.421	0.088	0.855	4.78
Other staff	2.982	0.160	0.932	0.112

Table 7. Frequency of responses to research questions

Group	Response	Staff efficiency	Services Quality	Monitoring services	Relationship of services and their price
Physicians	Yes	88%	40%	48%	80%
	No	12%	60%	52%	20%
Paramedical	Yes	75%	38%	44%	35%
	No	25%	62%	56%	65%
Others	Yes	57%	43%	49%	43%
	No	43%	57%	51%	57%
Total	Yes	73%	39%	46%	45%
	No	27%	61%	54%	55%

Table 8. Respondents' views towards the influence of Per-Case plan on staff motivation

	Mean	SE	SD	t
Physicians	3.308	0.168	0.785	1.84
Paramedical staff	3.435	0.105	1.020	4.14
Other staff	3.810	0.184	1.074	-1.03

Table 9. Respondents' views towards the influence of Per-Case plan on patients' satisfaction

	Mean	SE	SD	t
Physicians	3.591	0.157	0.734	3.76
Paramedical staff	3.421	0.088	0.855	4.78
Other staff	3.982	0.160	0.932	-2.84