Performance Evaluation in Hospitals: An Investigation on the Effects of the Performance Based Payment System in Research and Practice Hospital of Kocaeli University

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Abstract  
Performance evaluation has vital importance for businesses to maintain their activities effectively. An important part of performance evaluation is the performance measurement of employees. By measuring contribution of personal performance, people can see their individual contribution to the performance of the institution as a whole; they perceive their work and can enhance their performance by sensing what is expected of them in the institution.

In this study, the effects of performance-based payment system in Kocaeli University Research and Practice Hospital will be analyzed by comparing data related to medical examinations, operations and their revenues during Feb-June 2011 period, in terms of performance individual, departmental and institutional level, retroactively with those of Feb-June of 2009 and 2010 periods. Although the number of examination and the surgery for each faculty member increased significantly, their revenues were not raised at the same pace. Revenues of Faculty members who operated and examined privately in previous system declined significantly in the performance-based payment system.

Keywords: Performance evaluation, performance-based payment system, hospital.

1. Introduction  
Performance measurement and evaluation of employees to accomplish the objectives of businesses has always been a common practise. Performance evaluation is vital for businesses to effectively sustain their activities. To be successful, performance evaluation systems need to fit into existing management systems (Martinez, 2003). Measuring and assessing performance on individual, departmental and institutional level is crucial for organizational success. Performance is to conclude a work fruitfully and to fulfill his/her part of the duty effectively (Calik, 2003).

Performance evaluation is focused on economic, productivity, efficiency and effectiveness. Measurable objectives of application and sustainability of these criterias should be determined (Bilgin, 2004). The outputs and/or products related to these predetermined objectives should be measured continuously (Bilgin, 2004). Performance evaluation is a prosess in which performance of each
employee is examined, evaluated, recorded, and reported back to the employee (Aksoy, 2001). Associating of performance of a business with the individual employee performances contains the policy of equal pay for equal work. With this policy, hard working employees are awarded an additional payment. Performance evaluation aspires for the employees to work more efficiently and effectively.

Employees are the most important production factor to endure their existence and success. The main objectives of human resource management are to make employees to work effectively and efficiently. Motivation of the employees is an imperative need for efficiency and productivity of businesses. Motivation is a process affecting employees to act on work and ensuring their own will to work by creating an environment to undertake the needs of the employees and businesses with satisfactions (Can, 2005). Motivation includes behaviors of individuals to act in accordance with their own desire and wishes to achieve a specific objective (Kocel, 2005).

Performance-based payment is a system which builds relationship between performance and revenue, rewards extra performance and increases more operational productivity. In addition, performance-based reward system encourages employee’s desire and effort for work. Institutional performance evaluation system includes managing performances of individuals and groups, together with all systems and processes, in the organization. In addition, it is an approach for objecting a continuous development to achieve sustainable high productivity in institutions (Akal, 2003). Performance evaluation of hospitals are also important as it is for all businesses. However, hospitals have a complex and multivariable structure compared to the other businesses Aydin and Demir (2006).

2. Performance Evaluation In Hospitals
Hospitals are businesses providing health services. Improvement of health services depends on providing quality and productive service. In order to reach the objectives of health institutions it is essential to determine measurable and comparable service providing criterias. Evaluation of hospital performances contains a multi-dimensional structure. Therefore, there is no common criteria to measure performance of all hospitals. A wide variety of criterias are used for evaluation of individual or institutional performance in hospitals. Joint Commission for Accreditation of Health Care Organizations (JCAHO) emphasize that criterias such as patients’s rights, cares, diagnoses and treatments, ensuring the continuity of care, prevention of infection, performance improvement and leadership can be used to evaluate hospitals’ health services (Kavuncubasi, 2000). Studies in the literature uses cost indicators, output rates and a great number of financial criterias to assess the hospital performance Gruca and Nath (1994). Performance indicators in hospitals can be classified into four groups: indicators based on the use and level, indicators based on the dimensions of performance, financial indicators and indicators related to the resources (Sahin, 2009). In hospitals, effective use of beds, doctors and nurse effectiveness, increase in number of outpatient visits, high of patient turnover rates and financial indicators are also key performance criterias Tengilimoglu, Isik, and Akbolat (2009).

Institutional criterias to evaluate the performance of public hospitals in Turkey are determined by the Ministry of Health. University and private hospitals establish performance criterias peculiar to their institutions themselves. Ministry of Health continuously focuses on performance evaluation to increase efficiency and quality and to achieve better outputs for health in public hospitals (Aydin, 2007). Ministry of Health developed Performance-Based Payment System (PBPS) to evaluate the performance of public hospitals and employees and has started implementing them some selected provinces as pilot implementations since 2003. Performance criterias has been implemented, in state hospitals, in individual level since 2004 and institutional level since 2005. Ministry of Health has made PBPS more comprehensive by including financial indicators and managemental indicators since 2006.

The implementation of supplementary payment system from revolving funds for university hospitals started in 1981. Upper limits of supplementary payment from the revolving funds for
academic and administrative staff in university hospitals has been set by regulations. Supplementary payment system with revolving funds in university hospitals had been continued Feb 01, 2011.

Before Feb 01, 2011, supplementary payment from revolving funds were paid once a year on a predetermined fixed rates based on the title of faculty members. Fixed supplementary payment from revolving funds resulted in insufficient effort on billings and records of operations. The old payment system yields to patients who did not want to undergo an operation or be examined by an assistant doctors or wait in line or select a doctor could be able to reach any faculty member by paying a extra fee.

In the previous supplementary payment system, faculty members who operated and examined private patient could receive extra compensation, as the regulations set up the upper limit, in addition to fixed revolving compensation payment. Extra compensation revenue of a faculty member for private patient examinations is around three times more than what he/she could receive the revenue for regular patient examinations and revenue for private patient surgeries is around ten times more than what he/she could receive the revenue for regular patient surgeries. In addition, the income from private patients with special actions (examinations and surgeries) significantly contributed to revolving funds of university hospitals.

Since Feb 01, 2011, university hospitals has introduced a new supplementary payment system very similar to PBPS of hospitals affiliated with Ministry of Health. Based on the regulation on revolving funds, dated Feb, 18, 2011, revenue sharing for faculty members and staffs in PBPS is calculated with the following formula.

The formula for PBPS application is as follows:

\[ A + \left( (B_1+B_2+C+D) \times KK \right) + E \]

Where A is institutional contribution points, 
B1 is Individual income-generating activity points for class rate, 
B2 is individual income-generating activity points for overtime, 
C is Education-teaching activity points, 
D is Scientific activity points, 
KK is the calibration coefficient and 
E is Other activity points for commission membership, specific unit works, etc.

In PBPS, a supplementary payment is made to faculty members for educational and research activities other than patient diagnoses and treatment activities. In this system each faculty member is provided with a supplementary payment based on his/her monthly examination and operation performance. For this reason, faculty members are extra cautious for recording and billing of every transaction of their patients.

3. An Investigation on the Effects of Performance-Based Payment System in Kocaeli University Research and Practice Hospital

Aim of the study is to analyze the effects of PBPS on individual, departmental and institutional performance in Kocaeli University Research and Practice Hospital.

In this study, a retrospective analysis of data method was used. In this method, we selected one department from surgical sciences and one from internal medicine and, additionally, a medical doctor from each department in Kocaeli University Research and Practice Hospital as samples. The number of medical examinations and surgeries and supplementary revenue records of the select departments and faculty of the Hospital for the periods of Feb-June for 2009, 2010 and 2011 were retroactively investigated on a monthly basis and a comparative analysis was conducted on a yearly bases. In this study, record of all faculty members in the hospitals including 146 doctors who operated and/or examined patients privately and 60 faculty members who did not operated and/or examined privately were investigated.
4. Findings
We selected a doctor who privately operated and examined from surgical sciences and another one with the same condition from internal medicine department in Kocaeli University Research and Practice Hospital. Table 1 shows selected departments with the number of examinations, the number of operation and comparison of average revenues of 2009-2010 with that of 2011 Feb-June period.
Table 1: Shows selected departments with the number of examinations, the number of operation and comparison of average revenues of 2009-2010 with that of 2011 Feb-June period.

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<tbody>
<tr>
<td>The Sample of Surgeon’s Examinations</td>
<td>388 768 1156</td>
<td>270 778 1048</td>
<td>329 773 1102</td>
<td>946</td>
<td>-14,15</td>
</tr>
<tr>
<td>The Sample of Surgeon’s Operations</td>
<td>98 150 248</td>
<td>115 145 260</td>
<td>107 148 254</td>
<td>265</td>
<td>4.33</td>
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<tr>
<td>The Sample of Surgeon’s Total Revenues</td>
<td>51919 19439 71358</td>
<td>57355 18776 76131</td>
<td>54637 19108 73745</td>
<td>30043</td>
<td>-59.26</td>
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<tr>
<td>The Sample of Surgical Science’s Examinations</td>
<td>971 5169 6140</td>
<td>570 5651 6221</td>
<td>771 5410 6181</td>
<td>7569</td>
<td>22.45</td>
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<td>The Sample of Surgical Science’s Operations</td>
<td>443 662 1105</td>
<td>409 750 1158</td>
<td>426 706 1132</td>
<td>1241</td>
<td>9.62</td>
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<td>The Sample of Surgical Science’s Total Revenues</td>
<td>200419 155176 355595</td>
<td>181896 149551 331447</td>
<td>191158 152364 343521</td>
<td>175166</td>
<td>-49</td>
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<tr>
<td>The Sample of Internal Medicine Examinations</td>
<td>308 1093 1401</td>
<td>273 1177 1450</td>
<td>291 1135 1314</td>
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<td>The Sample of Internal Medicine Total Revenues</td>
<td>15708 24247 39955</td>
<td>13923 27999 41922</td>
<td>14816 26123 40939</td>
<td>42391</td>
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<td>The Sample of Internal Medicine Examinations</td>
<td>609 4996 5605</td>
<td>499 5299 5798</td>
<td>554 5148 5702</td>
<td>7755</td>
<td>36</td>
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<tr>
<td>The Sample of Internal Medicine Examinations</td>
<td>31059 67152 98211</td>
<td>25449 79881 105360</td>
<td>28254 73517 101786</td>
<td>110546</td>
<td>8.6</td>
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<td>Examinations of Hospital Total</td>
<td>16733 227090 243823</td>
<td>13793 241324 255117</td>
<td>15263 234207 249470</td>
<td>243387</td>
<td>-2.43</td>
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<tr>
<td>Operations of Hospital Total</td>
<td>2279 6519 8798</td>
<td>2355 7641 9996</td>
<td>2317 7080 9397</td>
<td>11592</td>
<td>23.35</td>
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<tr>
<td>Hospital Total Revenues</td>
<td>1203837 7397039 8600426</td>
<td>1127304 10192598 11319902</td>
<td>1165571 8794819 9960164</td>
<td>11224538</td>
<td>12.69</td>
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Changing Rates:
Privately: 2011 - 2009
In PBPS, the number of patients examined by sample surgeons decreased by 14.15%. The number of operations of selected surgeons increased by 4.33%, but, surgeon's total revenues decreased by 59.26%. Based on the average values, for Feb-June period, of a surgical science faculty member who did not operate privately the number of examination increased by 22.38%, the number of operation by 79.05% and revenues by 57.22%.

When PBPS is compared with the previous supplementary payment system, it is observed that the number of patients examined by the sample internal medicine doctor increased by 47.48% and the doctor’s revenues increased by 3.54%. When an internal medicine doctor’s work load increased by %50 the doctor’s revenues increased slightly. This is because the supplementary payment per patient in PBPS is very low. The number of the medical examination by regularly examining internal medicine doctor increased of 70.74% and revenues increased 62.27%. Our findings is in accordance with the findings of Tengilimoglu and colleagues who found out 71.51% increase on the number of the patients per doctor in their comparative study on the results of before and after supplementary payment system (Tengilimoglu et al., 2008).

Based on the findings of this study, it was identified that the number of examination in surgical sciences department increased 22.45% in average, the number of surgery increased 9.62% in average, but, revolving fund revenues decreased 49%. It is also found out that the number of examination increased 36%, revenues due to PBPS increased 8.6% in average in internal medicine department. Sahinoz and et al identified that 68% of hospital employees did not receive enough supplementary payment in PBPS when compared with the previous supplementary payment system (Sahinoz et al. 2010). The findings of this study is in accordance with the findings of the Sahinoz et al, due to the fact that supplementary payment increase is much less than the increase in workload.

It is not legally possible for faculty members to do medical examination or surgery privately in PBPS. Individual revenue of the faculty members has decreased since performance score for supplementary payment for medical examination and surgery was low. PBPS reduced revenue differences between doctors who did not operate privately and doctors who did in the previous supplementary payment system. It is intended to change attitudes and behaviors of the employees by the changes conducted on performance-based payment system. However, the change of the system does not affect all employees at the same level and the desired direction (Unal, 1998). Overworked health care doctors may resist to change if they are affected negatively from transformation (MSH, 2004). Resistance to change is normal human behaviour, but it can be managed effectively and overcome. Ignoring it or believing that you can simply impose the product on staff will prove far more damaging and costly than taking the time to address potential resistance early and constructively(Collins et al., 2006). Creating the enabling conditions for systemic change requires the removal of barriers to change (Lowe, 2004). If managers fail to removal of barriers to change, unexpected effects in new system can arise.

The main purpose of PBPS is to put forward individual performances. But, the principles for allocation based on performance is determined by the Board of Department in Kocaeli University Research and Practice Hospital and based on the demands of the academic staff involved in patient diagnosis and treatment, the individual and / or departmental performance is used. The number of the faculty members who wish to get an individual performance based on PBPS does not exceed 10% of total faculty members. Equitable sharing of revenue accrued in the department is utilized for other faculty members based on the decision of the Board of Department. In this case, even though it is called as PBPS, revolving fund payment in the previous payment system are used in the actual implementation.

In Kocaeli University Research and Practice Hospital, the 6 (4.2%) out of 146 doctor who worked on privately examination and operation in the previous payment system had practiced outside the hospital. This number is increased to 21 (16.8%) since PBPS has been implemented on Feb 1, 2011. Based on the previous supplementary payment system, it was observed that the total revenue of the doctors in the surgical sciences department decreased 49% although they examined and operated more patients in PBPS, and, the revenue of the sample doctor decreased by 59,26%. 11 (22%) out of 50
doctors of surgical science department had chosen practicing outside the hospital due to their workload increase and revenue decline.

Meanwhile workload of the doctors of the internal medicine department and that of sample doctor significantly increased in PBPS, their revenues did not increase at the same rate. As a result, 10 (10.52%) out of 95 physician members of internal medicine had chosen practicing outside the hospital due to their workload increase and revenue decline. Since these faculty members could no longer examined patients in hospital the workload of remaining faculty increased.

In the old payment system, it was observed that 11.70% of revolving funds revenues of Kocaeli University Research and Practice Hospital was from private examinations and surgeries. In addition, the number of examination decreased 2.43%, the number of operation increased 23.35% and total revenue increased 12.69% in average in the hospital. This increase is due to a private transaction (11.70%) revenue from the Ministry of Finance in 2010, as well its nonoccurring financial support in 2011.

5. Conclusions

A performance evaluation and appraisal system should be designed to meet the needs of employees, managers, and the hospital (Ross,1984). Suplementary payments based on performance evaluation for employees of hospitals considerably affect individual, departmental and institutional productivity. Changes in a performance evaluation system and its criterias can alter employees' attitudes and behaviors. Attitudes and behaviors can also be affected by which whether the change is in favor of the employees.

Revenue increase and decrease due to the change in the system can be effective on faculty members adaptation and acceptance of it. Since the implementation of PBPS is at a very low rate in the hospital desired it shows that it cannot fulfill changes and transformations. This is due to the fact that faculty members resist the change in both individual and department levels. It depends on the faculty members’s attitudes and behaviors to be changed to implement a system in university hospitals similar to PBPS implemented in hospitals affiliated with the Ministry of Health.

Effects of the change of performance evaluation system in Kocaeli University Research and Practise Hospital on individual, departmental and institutional performances is comparatively analyzed in both system and the following results are found out: All faculty member received equal supplementary payment in previous supplementary payment system in university hospitals. In this system, supplemental payments were made to doctors who operate privately based on their individual performances and contributions.

Revenues of faculty member accrued by their individual privately examinations and operations significantly exceeds revenues accrued by standart examinations in PBPS. For this reason, revenue levels of faculty members vary based on whether they work privately or not in the previous supplementary payment system. 55.64% of the 5 month total revenue of 73.745-TL which accrued by the surgeon sample from surgical sciences department and 36.19% of the 5 month total revenue of 40.939-TL which accrued by the sample internal medicine doctor is from private examinations. Significant parts of individual performance-based payment of faculty member composed of private examinations. There are revenue disparities between faculty members of surgical sciences and internal medicine. The basis of these differences is due to private surgeries other than medical examinations and a surgery costing much more than that of an examination.

PBPS has been implemented since Feb 2011. PBPS includes a suplementay payment for each faculty based on faculty’s individual performance without a fixed payment from revolving funds. Since private operation activities became very unlikely in PBPS the level of revenue per operation decreased. Implementation of PBPS unconstructively affected faculty members, especially surgeons, who practiced privately. On the other hand, it profitably affected faculty members who did not operate privately. The implementation of PBPS has increased the amount of work for faculty member due to specialist practice outside the hospital.10% of faculty members based on their demands are
implemented individual PBPS in Kocaeli University Research and Practice Hospital. A suplamental payment for faculty members who do not receive an individual suplamental payment is made based on the decisions of departmental boards by equally sharing of revenue derived in the departmant. Even though it is called as PBPS, revolving fund payment in the previous payment system are used in the actual implementation.

This study cannot be generalized since it is conducted based on the results obtained in Kocaeli University Research and Practice Hospital during a transition period in Feb-June 2011. It can be generalized only when an extensive study on PBPS can be carried out throughout University Hospital selected as samples in Turkey at determined intervals.

References


