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Balance score card in health care organization

Vani Pathuri
pathuri@marshall.edu

Huanyu Wang
wang131@marshall.edu

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BALANCE SCORE CARD IN HEALTH CARE ORGANIZATION

ABSTRACT

Balance Score Card is a strategic planning and management system and it helps in observing organizational business activities. This approach has improved the organizational performances. It has four perspectives of vision and strategy listed as financial, internal business, learning and growth, and customer perspective. A semi structured interview has been taken with Tanya Morton, who is an Assistant Director of Nursing at Cabell Huntington hospital. Hospital graphs have shown that the utilization of BSC with Nurse Department have become more satisfied during the eight years, and the remaining three departments also showed satisfactory report with BSC.

INTRODUCTION

Fox (2009) reported that in the United States (U.S) health care system, Federal Government has wasted \$600 billion to \$850 billion annually, on the non-essential care, on inefficient administration and on utilizing financial resources on purchasing unnecessary equipment. Government has been expanding its regulations to control the inefficiencies in utilizing financial resources (Newport, 2016).

Health care organizations are composed of several departments that need to work for the unified mission of quality health services that can enable patients to return to a condition of wellness, furthermore it requires employing qualified physicians and support staff at each facility (Rabbani et al, 2011). Hospital hierarchy maintains coordination among staff within departments, and for coordination between departments. In addition, health care managers have understood the

value of coordination, and of the importance of communication with subordinates, superiors, and other managers (Bossen, 2007). Modern health care is an industry, and as such, the applications of other industries may benefit health services and the ability to analyze and compartmentalize roles and tasks have been recognized as pivotal to increasing efficiency, performance, and profit (Rabbani et al, 2011). However, for health services to be truly effective, it must be provided more than individual comparison and it must be evaluated operations within a larger context including clinical and non-clinical assessments (Bossen, 2007).

The Balance Score Card (BSC) is a strategic planning and management system and it helps in observing organizational business activities to the vision and strategy of the organization by monitoring performance against strategic goals (Kaplan, 2009). It was created in the year 1992 by Drs. Robert, Kalpan and David (Balanced Scorecard Institute, 2015). Traditional performance measurement has focused on the external accounting data only but current performance measurement focuses on both external and internal (Adams, & Frost, 2008) and this way of approach provides “balance” to the financial perspective. The Balance Score Card has four perspectives of translating vision and strategy, listed as Financial, Internal business, Learning and growth, and finally customer perspective (Huang, 2009). These perspectives help in aligning organizational strategy with workers on day to day basis (Kaplan, 2009).

As technology has been advancing, hospitals have started to acquire the BSC to provide a plan, to all employees in organization and giving a lay out of their goals and for measuring the progress of the organization (Bhagwat, & Sharma, 2007).

There have been many examples of Healthcare Organizations (HCOs) utilizing the BSC approach, such as Emergency departments, Financial departments, Nursing Departments, and Medical record departments (Grigoroudis, Orfanoudaki, & Zopounidis, 2012). Gurd and Gao

(2007) also showed the highest utilization department in HCOs were Emergency departments, Financial departments, Nursing Departments, Medical record departments. In Europe and North America, it has been shown that between 30% and 60% of medium-size and large organizations have significantly revised their measurement systems in the last 10 years (Bhagwat, & Sharma, 2007). The BSC has one of the most widely used of the new generation of performance measurement systems furthermore, a recent report by the Bain consultancy¹⁴ indicated that, of a total sample of over 1200 large companies, 44% have used outcome measurement systems used by the BSC in different departments (Grigoroudis et al, 2012).

The purpose of this research was to examine whether the result of the utilization of BSC was positive or negative in cost savings to determine if there was waste reduction in four departments of the HCOs according to Gurd and Gao (2007), which were Emergency departments, Financial departments, Nursing Departments, Medical record departments.

METHODOLOGY

The working hypothesis was that by utilizing BSC, the HCOs' cost saving was positive and the waste was reduced significantly.

The methodology for this study was a literature review with sources which were published between the year 2007 and 2017. The research was conducted by using the online scholarly database which included EBSCOHost, PubMed, ProQuest, Academic Search Premier, Alt-Health Watch, LexisNexis, and Google Scholar. Federal agency websites such as the Center for Medicare and Medicaid Services, the Department of Health and Human Services, the U.S. Government Accountability Office were also identified to adopt the data. The key terms to identify scholarship included 'Balanced Scorecard', and 'Health Care', or 'Efficiency' and 'Nursing Department' or 'Emergency Department' or 'Financial Department' or 'Medical

Record Department'. The data collection was limited in English language only and published from 2007 to 2017 to keep the research current due to the frequent changes in healthcare field. Primary and secondary data were included from original articles, research studies, and reviews.

The sources were categorized by whether they were based in the U.S. or numeric financial data. The literature review yielded 19 articles and 2 online sources, which were assessed for information pertaining to this research project. A semi structured interview has taken with Tanya Morton, who is an Assistant Director of Nursing at Cabell Huntington Hospital (CHH). The literature search was conducted by VP, HW and validated by AC who acted as a second reader and verified literature met inclusion criteria.

For conceptual framework see Figure 1.

RESULTS

BSC in the Nursing Department:

Different balanced scorecards have measured the performance of employees and it measured the performance of directors of nursing, who have been responsible for 20 unit nurse managers (Merkley, & Mcallister, 2011). Nursing directors have been monitor the 'organizational growth', which can involve contracting other hospitals, expanding services, or developing new ones (Chu, Wang, & Dai, 2009).

The statistical evidence between 2002 and 2006 have shown the use of BSC given overall patient satisfaction index score rose from 91.7% to 93.0%, while patient satisfaction with nursing care increased from 93.2% to 94.2% (Duffin, 2008). Hospital graphs have shown that during the eight years the BSC has been in use nurses have become more satisfied with their working environments and less likely to complain about staff shortages and hospital acquired infection rate has dropped by 0.6% (Duffin, 2008). The successes have helped nurse managers and other

senior staff balance care quality with efficiency in addition, nurses proven that cost and quality are not at opposite ends of the spectrum and it has been possible to give quality care cost effectively (Duffin, 2008).

Table 1 displays the scoring criteria of BSC in the Nursing department of CHH in January Year to Date of financial year 2017. It usual score ranges from 1 to 10. A score of 1 to 3 implies risk, 4 to 6 implies moderate, a score of 7 usually the goal, whereas 8 to 10 would be stretch and target respectively (Table, 1). The hospital measured different key points categorized into departments as people, quality, financial, growth & development and patient experience (Table, 1). In the people, key measure salaries as Gross Patient Review was 10.06% and highest % of 14.73% for the RN Turnover Rate and the overall BSC score reached to 5 (Table 1). In the Quality, CHH has score of 9 for the Process of Care Index, and lowest 3.42 for the utilization/Documentation Ratio and overall quality BSC score measures 7 (Table 1). In the largest section of Finance Total Margin calculated as 4.81%, Salaries and Supplies as % Gross Patient Revenue 15.7% and the overall score was reached to maximum of 8 (Table 1). Growth and Development discussed about the different type of admissions scored maximum in every aspect and gained overall score of 8 (Table 1). In patient Experience section 90% of Neonatal Intensive Care Unit (NICU) and outpatient department patients have good experience and the overall score reached to 6 (Table 1). The overall measure of BSC for the CHH in January month score was 8 (Table 1).

BSC in the Emergency Department:

The advent of Reforming Emergency Care in the hospitals led to the introduction of systems for performance measurement (Sørup, Jacobsen, & Forberg, 2013). Emergency care was used on an associated US government target, that 98% of patients should be seen, treated and

either discharged or admitted within four hours of arrival (Huang, Wen-Yin, Ping-Ling, Lee, & Ming-Chin, 2004). The BSC framework was chosen to aid this process because its four domains allow several performance measurement criteria to be monitored simultaneously for example, after introducing the BSC it was observed the performance of the Emergency Department (ED) in a way of Recording the views of senior nursing and medical staff about performance measurement (Huang et al, 2004). In 2004, the performance of the ED was improved after implementing the BSC including the hours of continuing education attended by the staff, staff job satisfaction. According to the time line survey, the percentage of incomplete laboratory tests within 30 minutes, the average monthly inappropriate return rate, and hospital profit has raised to 40% (Huang et al, 2004). ED visits raised to 26% for the 65-and-over age group in the latest Centers for Disease Control and Prevention report (Regan, 2012).

BSC in the Financial Department

In the Financial Department (FD), most of the health care organizations have agreed that by utilizing the BSC, the performance in financial has been positively improved (Shukri, & Ramli, 2015). A survey which was based on 5-Likert scale ranged from “1” to “5” and conducted by Shukri and Ramli on private hospitals registered under the Association of Private Hospital of Malaysia (APHM) is shown on Table 2. As it can be seen, in the financial perspective, the average for financial was 4.79 out of 5 which meant most of the respondents agreed the benefits with the adoption of BSC in financial performance (Table 2). “Increase operating revenues” ranked high as the mean value of 4.92 revealed the revenues increased due to the increasing of profits and decreasing of debts (Table 2). In the customer perspective, the average for customer perspective was 4.42 out of 5 which meant most of the respondents believed the BSC improved the performance of customer perspective (Table 2). “Reduce patient complaint” ranked high as

the mean value of 4.58 showed when the satisfaction of patient increased, the number of complaint reduced (Table 2). In the internal business perspective, the average for internal business was 4.48 out of 5 which meant most of the respondents assumed the positive effects with BSC on internal business perspective (Table 2). “Improvement of management efficiency” ranked the highest mean value as 4.58 indicated the management was improved and became more efficient in performing the roles of employees (Table 2). In the learning and growth perspective, the average for learning and growth was 4.08 out of 5 which indicated most of the respondents admitted the BSC enhanced the learning and growth dimension (Table 2). “Improve employee satisfaction and attitude towards work” ranked the highest mean value as 4.27 directed the employees’ satisfaction was enhanced by supporting provided by the management such as skill development training (Table 2).

BSC in the Medical Record Department

According to Ajami, Ebadsichani, Tofighi, and Tavakoli (2013), the Medical Record Department (MRD) in Fatemeh Al-Zahra Hospital had been trying to give high quality and speed of services, manage correct information, and satisfy the customers by utilizing the BSC in their department. As it can be seen in Table3, in Fatemeh Al-Zahra Hospital, every perspective was showed positive result. In customer perspective, the patient satisfaction was 97% and admission satisfaction was 96% (Table 3). In addition, the response time to customers was 20 minutes on average, which had lowered to the aim of 17 minutes (Table 3). There were no complaints according to the table and the referrals was just four, which they were trying to make the referrals to zero (Table 3). In internal processes perspective, the average errors in the statistics report was low as 1/5 compared to 1, the average waiting time for admission was low as 95 minutes and time to retrieve an archived file was low as 5 minutes (Table 3). The percent of

safety standards was high as 90% while the percent error in the coding was low as 0.05% (Table 3). In growth and learning perspective, the average hours of internet use were 10 hours per month and the percent of total approvals to implement the decisions of the committee was 45% (Table 3). The correct application of terminal digital was 60, which was lower than aim of 65% (Table 3). For financial perspective, the amount of deductions due to defects in the MRD was 0.4 currency, which was low, compared to their aim of 0.2 (Table 3). The average time required for billing was six minutes, which was also low compared to the aim of five. Interval between discharge and billing was 107 minutes, which was low as the aim of 100 minutes (Table 3). The turnover rate of supplies was 11.4% as low to the aim, which was 12 (Table 3).

DISCUSSION

The purpose of this research was to examine whether the result of the utilization of BSC was positive or negative in cost savings to determine if there was waste reduction in four departments of the HCOs, which were Emergency departments, Financial departments, Nursing Departments, Medical record departments.

Tanya, Director of the Nursing was interviewed for measuring the BSC performance. Tanya was satisfied with the use of BSC and Table 1 showed the scoring criteria of BSC in CHH to evaluate the performance of each department and overall performance. This has led CHH to better understanding of the lacunae and the area of interest for the next year. Goals can be set and worked upon accordingly.

In January 2017 BSC, “people” overall score was moderate (5). The RN turnover rate and all other turnover rates met the goal (7), timeliness of evaluations and salaries as % gross Patient Review have been at risk, benefits- actual to the budget % was in stretch (9). The key concerns in the department of people would be timeliness and salaries. The department of quality reached its

goal but improving utilization/documentation ratio was the priority for improvement. The Financial department, the most crucial department have reached stretch for the year. Many measures like total margin (with and without acquisition costs), operating margin, days with cash on hand, Maximum Annual Debt Service Coverage ratio (with and without acquisition costs), supplies as % Gross Patient Review and % Medicare revenue achieved stretch. Salaries and supplies as % gross patient revenue reached its goal. Total expenditure as % gross point revenue and % of commercial revenue was moderate whereas OT as % of total worked hours is at risk – the key measure to handle this year. Lastly, patient experience department was moderate (6) with ED and OAS CAHPS index at risk, outpatient test and treatment, outpatient rehab and pediatric inpatient was moderate; adult inpatients index and senior index reached its goal and NICU was at stretch.

Overall, the BSC of CHH was 8 which implied the hospital reached its stretch for the FY 2017. This would be good news of the hospital management as they were near to achieving the target. The key measures where the hospital should better its services now can be easily assessed and the methods to improve must be planned and executed by the management to make the hospital to a better stage in each aspect. The growth and development, inpatient admissions, average daily census, family medical center visits and other out- patient visits were at stretch; Medicare admissions, ER visits, total deliveries, operating procedures and cancer center visits were moderate. The overall performance of growth and development reached its goal.

In the nursing department staff received payment and it was raised every year, but payments were decided by the directors of nursing and it was given one nurse 10 % and another nurse nothing furthermore, it has shown that all the managers see themselves as part of the bigger picture (Chu et al, 2009).

In the ED, with the use of BSC, the rate of patient complaints decreased. Because a courtesy training program was implemented for all ED staff, patients may have had good impressions of the staffs' manners and felt more satisfied with the services of the ED.

In the FD, the utilization of BSC was well accepted due to the rank of the study. The performance of BSC in FD of HCOs showed a positive result which was matched with the hypothesis.

The MRD does not directly have a role on growth in income or reduce costs in the hospital, but it can indirectly affect the hospital financial indicators by improving the qualitative and quantitative data.

Limitations

This literature review was limited because of constraints in the search strategy utilized, particularly the number of databases searched, because publication bias could have altered the availability and caliber of research available during the search. Other study limitations included researcher bias, small sample sizes and studies that were specific to geographic regions and may not depict the population across the United States.

Practical implications

In the CHH, the score of BSC reached the target. ED and OAS CAHPS should be improved. Therefore, the hospital should strive to improve these departments to meet its target.

CONCLUSION

The BSC system of management is the future of health care management. The BSC analyzes the implementation and performance in an interrelated and dynamic fashion, as opposed to the linear measurements of the past. The success of the BSC has depend on the commitment and acceptance of BSC by each organization and every department in it.

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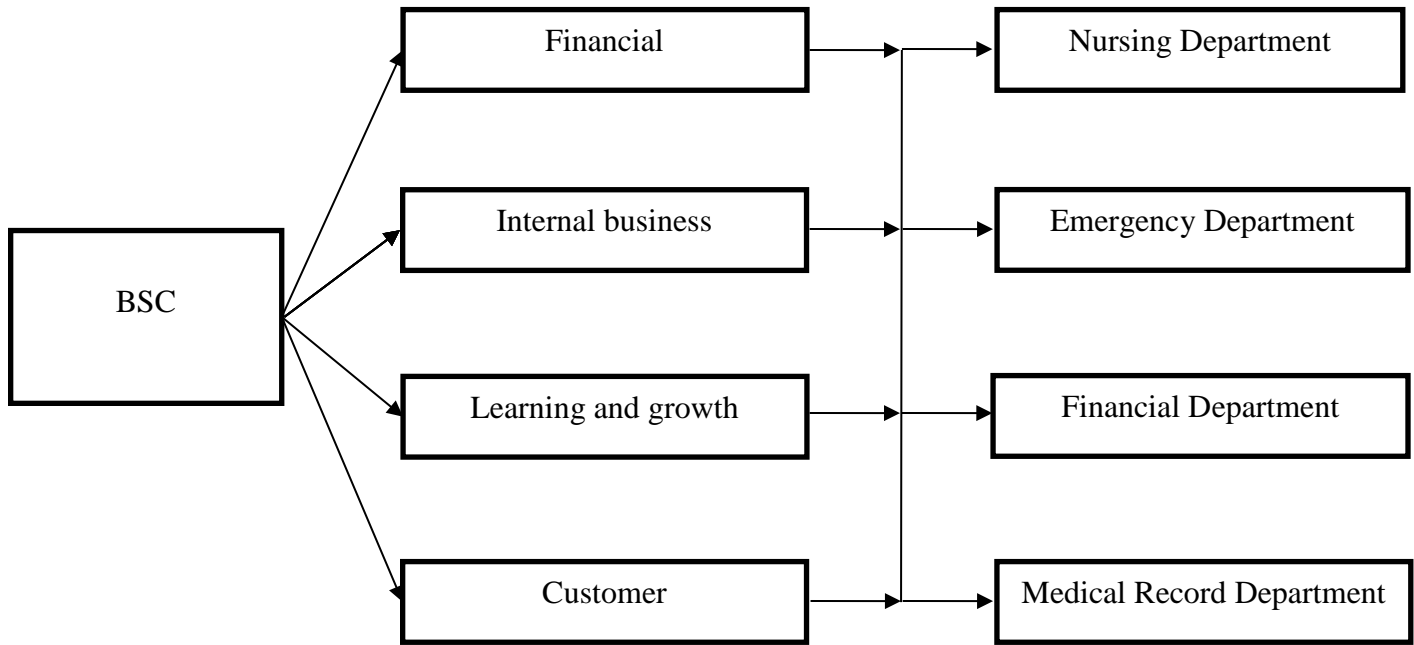


Figure 1 Conceptual framework

Customized from: Amaratunga, Haigh, Sarshar, & Baldry (2002).

Table 1: BSC of Nursing Department in Cabell Huntington Hospital

		scoring criteria											BSC score	
		Target	Stretch		Goal	Moderate			Risk					
people	key measures	Jan YTD	10	9	8	7	6	5	4	3	2	1		
	RN Turnover	14.73%	13.90%	14.26%	14.63%	15.00%	15.38%	15.76%	16.15%	16.56%	16.97%	17.40%	7	
	All other	11.69%	11.12%	11.41%	11.70%	12.00%	12.30%	12.61%	12.92%	13.25%	13.58%	13.92%	7	
	Timeliness of	49.08%	100.00%	98.30%	96.06%	95.00%	93.4%	91.7%	90.2%	88.6%	87.1%	85.6%	1	
	Salaries as %	10.06%	9.42%	9.52%	9.61%	9.71%	9.81%	9.91%	10.00%	10.10%	10.21%	10.31%	3	
	Benefits- Actual	94.33%	92.69%	95.06%	97.50%	100.00%	102.50%	105.06%	107.69%	110.38%	113.14%	115.97%	9	
Pillar Score													5	
Quality	Processing of	9.00	10	9	8	7	6	5	4	3	2	1	9	
	Natl.Patient	7.90	10	9	8	7	6	5	4	3	2	1	7	
	Hospital	7.60	10	9	8	7	6	5	4	3	2	1	7	
	Readmission	8.00	10	9	8	7	6	5	4	3	2	1	7	
	Utilization													
	Documentation	3.42	2.90	3.00	3.10	3.20	3.30	3.40	3.50	3.60	3.70	3.80	4	
Pillar Score													7	
Financial	Total Margin (No acquisition)	4.81%	4.74%	4.62%	4.51%	4.40%	3.65%	2.74%	2.05%	1.54%	1.16%	0.25%	10	
	Total Margin (w/ Acquisition)	4.75%	4.74%	4.62%	4.51%	4.40%	3.65%	2.74%	2.05%	1.54%	1.16%	0.25%	10	
	Operating	4.30%	4.31%	4.20%	4.10%	4.00%	3.00%	2.25%	1.69%	1.27%	0.95%	0.00%	9	
	Days cash on	170.00	160	156	153	150	148	145	139	135	133	130	10	
	MADS Coverage Ratio	8.00	5.5	5.4	5.3	5.2	5.1	5.0	4.9	4.8	4.7	4.6	10	
	MADS Coverage Ratio	5.90	5.5	5.4	5.3	5.2	5.1	5.0	4.9	4.8	4.7	4.6	10	
	Salaries and Supplies as %	15.7%	15.2%	15.4%	15.5%	15.7%	15.9%	16.0%	16.2%	16.3%	16.5%	16.7%	7	
	Total Exp. As %	31.12%	30.01%	30.31%	30.62%	30.93%	31.24%	31.55%	31.87%	32.19%	32.51%	32.83%	6	
	OT as % of Total	2.46%	1.00%	1.33%	1.67%	2.00%	2.02%	2.10%	2.31%	2.54%	2.80%	3.07%	3	
	Supplies as %	5.62%	5.76%	5.82%	5.88%	5.94%	6.00%	6.06%	6.12%	6.18%	6.24%	6.31%	10	
	% Medicare	37.30%	36.64%	36.46%	36.28%	36.10%	35.55%	35.00%	34.45%	33.90%	33.35%	32.80%	10	
	% commercial	21.90%	26.20%	25.70%	24.70%	23.70%	23.08%	22.46%	21.84%	21.22%	20.60%	19.88%	4	
Pillar Score													8	
Growth&	Inpatient	27,162	27,159	27,024	26,890	26,756	25,418	24,147	22,940	21,793	20,703	19,668	10	
	Medicare	5,415	5,520	5,493	5,465	5,438	5,166	4,908	4,662	4,429	4,208	3,997	6	
	Average Daily	273	277	271	266	262	258	254	250	246	242	238	9	
	ER Visits	52,497	66,379	63,218	60,208	57,341	54,474	51,750	49,163	46,705	44,369	42,151	5	
	Familv Medical	56,298	51,617	49,159	46,818	44,589	42,360	40,242	38,229	36,318	34,502	32,777	10	
	Total Deliveries	2,526	2,858	2,788	2,720	2,654	2,521	2,395	2,275	2,162	2,054	1,951	6	
	Operating	12,399	13,227	13,105	12,975	12,597	11,967	11,369	10,800	10,260	9,747	9,260	6	
	cancer Center	89,883	94,519	93,583	92,657	89,958	85,460	81,187	77,128	73,271	69,608	66,127	6	
	Other	514,990	435,962	433,793	431,634	429,487	408,013	387,612	368,231	349,820	332,329	315,712	10	
	Pillar Score													8
Patient Experience	Adult Inpatients/H-CAHPS Index	7.33	10	9	8	7	6	5	4	3	2	1	7	
	Seniors	7.89	10	9	8	7	6	5	4	3	2	1	7	
	ED CAHPS Index	1.25	10	9	8	7	6	5	4	3	2	1	1	
	OAS CAHPS	3.00	10	9	8	7	6	5	4	3	2	1	3	
	Outpatient Test	91.00	93.4	93.0	92.6	92.1	91.5	91.1	90.7	90.2	88.9	88.3	4	
	Outpatient	91.70	93.3	92.7	92.2	91.8	91.2	90.7	90.3	89.6	88.9	86.7	6	
	Pediatric	88.00	89.3	89.0	88.7	88.4	87.8	87.3	87.1	86.7	86.3	85.3	6	
	NICU	92.10	88.2	87.9	87.4	87.0	86.2	85.9	85.7	85.1	84.6	83.1	10	
	Pillar Score													6
TOTAL											8			

Source: Cabell Huntington Hospital, internal documents from Nursing department (January 2017).

Table 2: The Performance of BSC in the Financial Department in the Association of Private Hospital of Malaysia

	Minimum	Maximum	Mean	Std. Deviation
Increase operating revenues	4	5	4.92	.289
Achieve cost savings	4	5	4.83	.389
Increased hospital profits	4	5	4.92	.289
decreased debts	4	5	4.50	.522
Overall Average for Financial	4	5	4.79	.298
Increase patient satisfaction	4	5	4.42	.515
Reduce patient complaint	4	5	4.58	.515
Gain customer's acceptance	4	5	4.25	.452
Increased customer's retention	4	5	4.42	.515
Overall Average for Customer	4	5	4.42	.404
Improvement of products, service and programs quality	4	5	4.42	.515
Improve internal process efficiency	4	5	4.50	.522
Improvement of management efficiency	4	5	4.58	.515
Improvement of patient safety and health through risk management	4	5	4.42	.515
Overall Average for Internal Business Process	4	5	4.48	.391
Improve employee training and learning	3	5	4.00	.739
Improve employee satisfaction and attitude towards work	3	5	4.17	.577
Encourage creativity and innovation development	3	5	4.08	.515
Allow continual feedback and learning process	4	5	4.08	.289
Overall Average for Learning and Growth	3.5	4.75	4.083	.404
Overall Average for Organizational Performance	4	4.69	4.44	.228

Source: Shukri, and Ramli (2015).

Table 3: The BSC and measures in the MRD in the Fatemeh Al-Zahra Hospital

Perspective	Indicator	Period	Unit of indicator	Optimum	Responsible	Amount	The quantitative aim
Customer	Statistics satisfaction	Seasonal	Percent	High	Statistics	83	85
	Admission satisfaction	Semiannual	Percent	High	Quality improvement	82	85
	response time to customers in archive	Monthly	Minute	Low	Medical Records	20	17
	The rate of complaint in archive	Monthly	Percent	Low	Public relations	0	0
	Number of referrals for research	Semiannual	Number	High	Coding	4	---
Internal Processes	The average errors in the statistics report	Seasonal	Error Number	Low	Statistics	1/5	1
	The average waiting time for admission	Semiannual	Minute	Low	Quality improvement	95	90
	Time to retrieve an archived file	Monthly	Minute	Low	Medical Records	5	5
	Percent of safety standards in the archives	Annual	Percent	High	Medical Records	90	92
	Percent error in the coding	Semiannual	Percent	Low	Coding	0.05	0.05
Growth and Learning	Average hours of Internet use	Monthly	Hour	High	Statistics	10	15
	Percent of total approvals to implement the decisions of the committee	Seasonal	Percent	High	Committee	45	50
	the correct application of terminal digital	Annual	Percent	High	Evaluator	60	65
	Number of methods to informatics patients	Annual	Number	High	Admission	7	8
	Rate of documenting the training of doctors	Annual	Hour	High	Education	2	8
	Number of related books in the archives	Annual	Volume	High	Library	28	33
Financial	The amount of deductions due to defects in the MR	Annual	Currency	Low	Financial	0.4	0.2
	The average time required for billing	Annual	Minute	Low	Financial	6	5
	Interval between discharge and billing	Annual	Minute	Low	Quality improvement	107	100
	Turnover	Monthly	Percent	High	Statistics	11.4	12

Source: Ajami, Ebadichani, Tofighi, and Tavakoli (2013).