Original Article

Medical Records Department and Balanced Scorecard approach

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ABSTRACT

Context: The Medical Records Department (MRD) is an important source for evaluating and planning of healthcare services; therefore, hospital managers should improve their performance not only in the short-term but also in the long-term plans. The Balanced Scorecard (BSC) is a tool in the management system that enables organizations to correct operational functions and provides feedback around both the internal processes and the external outcomes, in order to improve strategic performance and outcomes continuously. **Aims:** The main goal of this study was to assess the MRD performance with BSC approach in a hospital. **Materials and Methods:** This research was an analytical cross-sectional study in which data was collected by questionnaires, forms and observation. The population was the staff of the MRD in a hospital in Najafabad, Isfahan, Iran. **Statistical Analysis Used:** To analyze data, first, objectives of the MRD, according to the mission and perspectives of the hospital, were redefined and, second, indicators were measured. Subsequently, findings from the performance were compared with the expected score. In order to achieve the final target, the programs, activities, and plans were reformed. **Results:** The MRD was successful in absorbing customer satisfaction. From a customer perspective, score in customer satisfaction of admission and statistics sections were 82% and 83%, respectively. **Conclusions:** The comprehensive nature of the strategy map makes the MRD especially useful as a consensus building and communication tool in the hospital.

Key words: Balanced Scorecard, evaluation, medical records, performance, strategy map

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INTRODUCTION

The Medical Records Department (MRD) has become an essential department in every hospital, which provides multiple services not only to the patients but also to running a hospital efficiently and plays a key role in health promotion and patient care quality. Therefore, evaluation of the services provided in this department is critical.[1]

The American Medical Records Association indicated that, "The evaluation itself is not the end of process but it is prerequisite for ensuring of quality. The set of principal decisions, operations and changes in which done to guarantee of the quality in the MRD calls evaluation." Intermittent

evaluation of services will show the current situation and determine the area of reforms.[1]

The Balanced Scorecard (BSC) is an approach to performance measurement that combines traditional financial measures with non-financial measures to provide managers with richer and more relevant information about the activities they are managing.[2]

The BSC is a strategic performance management tool that can be used by managers to keep track of the execution of activities by the staff within their control and to monitor the consequences arising from these actions.

To address the short term and long term at once, leading companies are turning to a management tool called the BSC to translate corporate vision into measurable objects.[3]

The BSC is built on the critical success factor (CSF) concept of a limited set of performance measures. It reports indicators in four different perspectives of equal weight: Learning and growth, internal processes, customer satisfaction and financial performance. Indicators can develop from current data systems and can be used periodically for facilitating quality improvement and moving toward organizational excellence.[4]

The BSC now has a documented history of successful implementation in several industries, including healthcare. Benefits of implementation have included:
- increased financial returns;
- greater employee alignment to overall goals;
- improved collaboration; and
- unrelenting focus on strategy.[5]

The BSC is a management tool originally applied to businesses in the private sector, developed by Kaplan and Norton in 1992. Its creators describe it as "a multidimensional framework for describing, implementing and managing strategy at all levels of an enterprise by linking objectives, initiatives and measures to an organization's strategy."[6]

The Kaplan and Norton BSC looks at a company from four perspectives:
- Financial: How do we look to shareholders?
- Internal business processes: What must we excel at?
- Innovation and learning: Can we continue to improve and create value?
- Customer: How do customers see us?

By viewing the company from all four perspectives, the BSC provides a more comprehensive understanding of current performance.[7]

About a decade after Kaplan and Norton developed the BSC, a number of healthcare organizations in various healthcare settings throughout North America and abroad started to adapt and implement the BSC framework for their organizations.[8]

In Ontario, for example, over the past few years, Cancer Care Ontario,[9] the Ontario Hospital Association[10] and the University Health Network[11] have all adopted the BSC as their performance management tool.

A report of the Institute for Clinical Evaluative Science (ICES), based in Ontario, Canada, in 2004 developed a BSC for public health that introduced a public health-specific BSC framework for performance measurement. Public health's focus on prevention and health promotion, often for entire populations, distinguishes it from many other areas of healthcare that are more patient and treatment focused. The four quadrants were further adapted to include not only traditional measures of performance such as health status but also measures relating to the structures and processes within the local public health unit.[12]

In Iran, this approach in academic research centers and various industrial units such as generators and technology industrial group of companies have applied, but in the health area have not been used so far. Fateme Al-Zahra Hospital is a non-profit and governmental hospital that is located in Najafabad, Isfahan, Iran. It has 160 beds and 336 personnel, and has started implementation of the quality management system since 2001 and got grade one on accreditation by the Vice Chancellery of Treatment in Isfahan University of Medical Sciences. It has the ISO:9000-2000 certification and strategic planning as well. The MRD of this hospital has 19 personnel.

The most important factor motivating the researchers was existence of the strategic planning document as a basic requirement to apply BSC in the Fateme Al-Zahra Hospital.

Therefore, the aim of this study was to assess the performance of the MRD by BSC in the Fatemeh Al-Zahra Hospital in Najafabad, Isfahan, Iran.

MATERIALS AND METHODS

This research was an analytical cross-sectional study in which data were collected by interview with top managers and staff of the MRD, observation (study all documents in different sections of the MRD) and forms in the the Fatemeh Al-Zahra Hospital in Najafabad.

To perform the study, the researchers track these steps as follows:
- Instituting a BSC committee composed of the medical records staff, hospital administrator and chief;
- Formulating and approving vision, mission and goals of the MRD;
- Holding a BSC workshop for them;
- Revising vision, mission and goals of the MRD through discussion and brainstorm;
- Dividing the MRD into four sections (admission, statistics, archive and coding);
- Determining aims and indicators according their own perspectives individually;

· Drawing strategy map; and
· Determining cause and effect relationship, which are between leading and lagging indicators.

During a meeting, the indicators were reviewed by senior hospital managers. Then, they were evaluated and weighed based on seven criteria.

To analyze data, objectives were measured. Subsequently, findings from the performance were compared with the expected score. In order to achieve the final target, in some cases, reform for the programs, activities and plans was done.

RESULTS

In the first phase, we confirmed the mission of the MRD in the Fatemeh Al-Zahra Hospital that was committed to "providing the highest quality and quantity to Medical Records Information System, using newest technologies to improve services, creating appropriate situation for doing more researches and developing appropriate accountability system to clients with emphasis on ministry standards, ISO 9001-2000 and social security organization." Then, the themes' strategies were determinined. The MRD themes strategic in this study were:
• high quality of services,
• high speed of services,
• managing correct information, and
• reverencing to customers.

According to these strategic themes, goals for units of the MRD at BSC pespectives were set. After determining vision and mission in all units of the MRD department, short-term objectives based on long-term goals were determined by researchers and the BSC team.

After confirming the goals and objectives, performance measures based on goals were determined by top managers and the BSC team. Each goal has a 1/3 average indicator [Table 1].

According to Table 2, the highest number of measures is related to archive in the MRD. The "learning and growth" and "financial" perspectives were the highest and the least measures of the MRD. Table 2 denotes that there are 18 logging indicators and 38 leading indicators.

As it can be seen, the learning and growth perspective with 17 indicators and financial perspective with eight measures experienced greatest and lowest indicators in BSC at the MRD.

In addition, from 56 measures, 18 of them are related lagging and the others are related to leading indicators in the MRD. Overall, the number of leading indicators is more than 20 of the lagging indicators in the MRD [Tables 3 and 4].

The cause and effect relationship between goals and leading and lagging indicators of the MRD according to BSC in the Fatemeh Al-Zahra Hospital was determined [Figure 1].

The next step was to determine the causal linkages between the strategies and develop a strategy map to visually portray and show how our strategies can support our vision in the MRD. Figure 2 demonstrates these linkages. According to Figure 2, the essential objectives in selecting a specific measure for a scorecard is to identify the measures that create the best communication [Figure 2].

Table 1: Distribution goals of the MRD according to the BSC perspectives in FatimehAl-Zahra Hospital

Perspectives	Medical Records Department				Total sum
	Statistics	Archieve	Admission	Coding	
Goals					
Customer	3	3	3	2	11
Internal processes	3	3	3	3	12
Learning and growth	3	4	3	4	14
Financial	1	3	1	1	6
Sum	10	13	10	10	43

Table 2: Distribution measures of the MRD according to the BSC perspectives in FatimehAl-Zahra Hospital

Perspectives	Medical Records Department				Total sum
	Statistics	Archieve	Admission	Coding	
Measures					
Customer	4	5	4	2	15
Internal processes	4	5	2	5	16
Learning and growth	3	5	5	4	17
Financial	1	4	2	1	8
Sum	12	19	13	12	56

Table 3: Distribution of lagging and leading indicators of the MRD according to the BSC perspectives in the FatimehAl-Zahra Hospital

Perspectives	Medical Records Department				Total sum
	Statistics	Archieve	Admission	Coding	
Lagging Indicators					
Customer	4	3	3	2	12
Internal processes	0	0	0	0	0
Learning and growth	0	0	0	0	0
Financial	1	3	2	0	6
Leading Indicators					
Customer	0	2	1	0	3
Internal processes	4	5	2	5	16
Learning and growth	3	5	5	4	17
Financial	0	1	0	1	2
Sum	12	19	13	12	56

DISCUSSION

Gholami has proposed that one of the important factors to implement BSC is determining vision, mission, strategies, goals and objectives in organization.[13] Results of the Chan and Kathy Ho[14] study showed that lack of vision, mission and strategic goals definition before starting the BSC project caused the BSC to not be implemented successfully in Canadian hospitals. According to our results, from a customer perspective, the proposed comments have affected the objectives of the MRD. These comments were customer satisfaction oriented, which can divided in "improving customer accountability," "increasing respect to customer" and "increasing customer satisfaction." Increasing customer satisfaction is not an individual action, and is affected by other activities in MRD.

Our aim is promoting customer satisfaction by doing activities as shown below:
- Reduce waiting time,
- Increase content quality of MRs,
- Increasing information analysis,
- Increasing accuracy in data conversion code,
- Reduce retrieval,
- Provide safety, and
- Facilitate information distribution.

In this stage, the researchers and BSC committee determined their goals from a customer perspective.

Their question was what tools and required abilities do medical records professional need to implement their strategy?

Table 4: 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	Statisticis	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 archieve	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	Finantial	0.4	0.2
	The average time required for billing	Annual	Minute	Low	Finantial	6	5
	Interval between discharge and billing	Annual	Minute	Low	Quality improvement	107	100
	Turnover	Monthly	Percent	High	Statistics	11.4	12
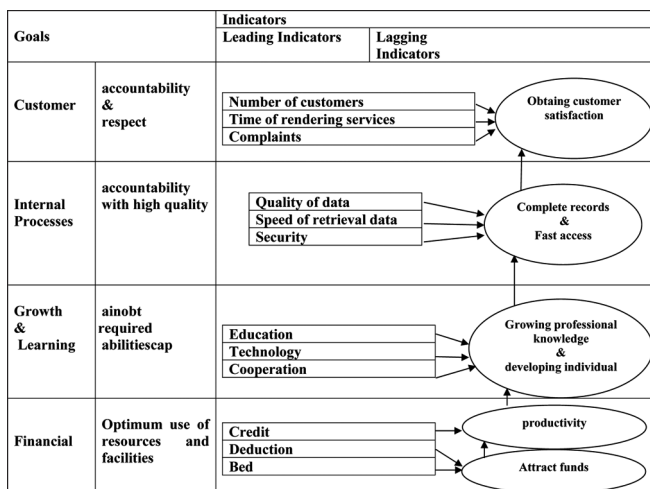
Figure 1: Cause and effect relationship between goals and indicators of the Medical Records Department according to the Balanced Scorecard in the Fatemeh Al-Zahra Hospital
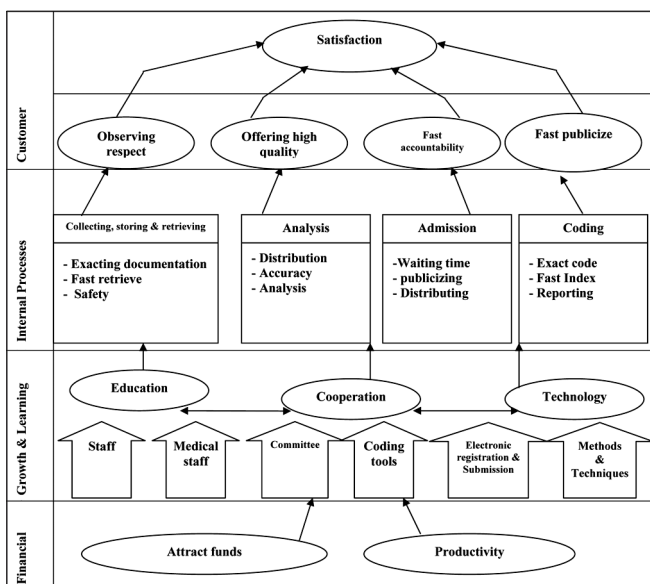
Figure 2: Strategy map of the Medical Records Department according to the Balanced Scorecard in Fatemeh Al-Zahra Hospital

To document topics, which related staff development skills, we used staff learning and growth perspective. Major objectives set in this perspective include:

· Allocating to education documentary,
· Improving staff skills,
· Increasing staff participation in decision making,
· Accessing to modern methods and techniques,
· Facilitating information technology dissemination, and
· Developing resources.

Nejati and his colleagues denoted that each university has proper measures to design a balanced assessment system, which must be identified by the executive team.

This measure must be related with the University's strategic goals. It is necessary that the selected measures should be regularly revised, for example, unnecessary measures are removed, and new ones are added. The senior management should determine the time of this review.[15]

Therefore, researchers conclude that it is necessary to pay attention to tools and ways that the staff requires while doing their duties in this perspective. Researchers determined aims of this perspective to develop skills, capabilities and some resources to run internal processes and achieve the set objectives. Delete gap of skills and develop technology-accelerated internal processes and objectives achievement. From a financial perspective, 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 qualitative data. In this perspective, goals set included: increased productivity, reduced deductions due to incomplete Medical Records, reduced issuance time bill and increased government support. One of the major aims of this perspective is to increase Medical Records credit and measures in the conductive indicator and increase the absorption of credit for this section cause to reach learning and growth perspective. This purpose is stimulated by performance.

CONCLUSIONS

Models evaluate different dimensions of performance cause to prospective and balanced evaluation. In this model, in order to control performance, ward-related staff participation is required. The MRD shares some results and strategies with its staff and allow to determine group's goals, which can be influenced on hospital targets.

When these goals with implementation are integrated, process of the quality system are evaluated through a BSC.

The organizational structure totally increases agreement and clarity between staff and managers. This structure causes the performance to be controlled well.

Results of measuring 56 indicators of different sections in the MRD showed that internal and external customers had got satisfied well.

The MRD officials and staff treat accountability and respect customers through reducing waiting time and increasing the quality of information, which is transferred to the customer.

The Medical Records sections should improve their duties.

The statistics section gives top managers the satisfaction of increasing information analysis.

The archive section, increase the Medical Records content quality through measuring the rate of deficiencies regularly. In addition, it should define the process of defect recognition.

The admission section, which has creative and initiative procedures, makes informatics easier for patients and their family. Top managers should employ educated workers to be aware in MRD duties.

The coding section attracts researchers to gather their useful data through cooperation with research centers and institutions.

Therefore, the comprehensive nature of the strategy map makes the MRD especially useful as a consensus building and communication tool in the hospital.

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