## Original Article

# Innovation in the Application of Malcolm Baldrige Model: Using Two models (Medical & Educational) at one Hospital

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**Abstract**

**Introduction**: Health care industry consists of an unexpected and confusing environment in which quality events play the important role. In such conditions, the necessary changes should be made. Excellence models are general oriented frameworks that are able to achieve the above intention.

**Materials & Methods:** This study is a descriptive cross-sectional study. Data gathered by a standard checklist of Baldrige Model through interview of the chief managers of Hasheminejad Hospital.

**Results**: In the health care field this hospital obtained 426 of 1000 scores. Within major criteria, the highest score was related to the standard of focusing on staff obtaining %51 of the total score of this model and the leadership standard obtained the lowest score (38 percent). This hospital obtained 222 of the total 1000 points of the Malcolm Baldrige score in the educational field. Findings also show those main criteria of strategic planning and the focus on students, interest groups and markers obtained the maximum score. Since, each of them obtained 33 percent of the total score of the model and the minimum score, 18 percent, belonged to the results of organizational performance criterion.

**Conclusion**: The results indicate the necessity of paying more attention towards organization's performance, especially education. Barldrige model can be applied as a comprehensive model for evaluating the performance of medical-educational hospitals.

***Keywords*:** Hospitals; Models, Educational; Health Care Sector; Hospital Administration; Standard of Care; Health Care Reform; Quality of Health Care

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## Introduction

In the contemporary era, quality is turned into the nineteenth battlefield. Just the beasts will survive [1].

In the past, traditionally, assurance of health care quality was relied on technical knowledge of medical and nursing professionals that were expected to apply this expertise in treating the patients, in the best way. An organizational function of health care is evaluated by applying clinical indicators. Anyway, health care centers are complex organizations in which each expert work is a part of system to provide services for patients. The appropriate health care needs managerial and implementing supports in order to provide health and safety for a patient [2]. Health care indicators, previously, evaluated the operation of such organizations, and the quality of services was guaranteed by the technical knowledge of their professional physicians and nurses. However, today, health care organizations are complex ones which require strong managerial support to operation assessment matter [3]. Since, it is obvious that the main subject in all organizational analyses is the operation for which the improvement requires measuring. So that, no acceptable operation is expected from an organization without assessment system [4].

In other words, an increase in progressively operational costs is among the health care service providers' concerns. For this purpose, performance assessment of companies, provide competitive advantages for enhancement of progression [5]. In such a case, priorities in health care organizations are determining the assessme indicators accurately and precisely allocating their points. Accordingly, organizations are striving to steal the leads from others by enjoying elite counsellors, defining individual, unit and organizational indicators [6]. Nowadays, an intensive competitive atmosphere between organizations and their continuous attempts to improve the services and products services and responses to expectations and needs of customers have caused them to look for a comprehensive, reliable, strategic and flexible method to evaluate their performance. This measure causes them to be able to reach for precise and comprehensive information about their position, status and performance within the community in general and within rivals in particular, and with regard to the weaknesses and strengths in the past, ensure their life by preventing oncoming mistakes [7].

In other words, the role of efficient evaluating and supervising systems with improvement and excellence of organizations is absolutely clear. Conducted researches indicate that in the most of large Iranian organizations (especially in the public section) developing efficient systems, planning and evolving, precede assessment and supervision systems. The improving role of assessment systems in organizations would be cleared further when the determination and trend of organizational forces to create planned changes have been firmed [8]. In this regard, organizational improvement models by introducing performance criteria, systematically and logically, provide the possibility to evaluate an organization at the macro and micro levels. Providing the possibility to compare

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organizations with different or identical natures, create partnership at all levels, constructing the common language for better managing of the organization, identifying fields to be improved and how people communicate with their responsibilities, fulfilling the needs, solving the hospital's problems and moving towards organizational improvement and excellence are other achievements [3]. Among the positive characteristics of these models are that the models of excellence or organizational superiority have a significant role in the encouragement and spread of quality and excellence orientation. They emerged the efforts of a country to strengthen ultra-national's reputation and competition in the global market [9]. Researches show that more than 46 countries are granted to Quality Award. The model of granting award is categorized as follows:

1. Malcolm Baldrige's Model

2. Model of European Foundation for Quality Management

3. Deming's Model

4. Proprietary Model

Statistical analysis shows that the Baldrige and European Models have applied the most. Thus, many countries have used either exactly above models or a combination of them [10]. The Baldrige model of organizational excellence contrary to Model of European Foundation for Quality Management, which includes a unique method, uses three different methods to evaluate the performance of organizations. These methods are: The Health Care Criteria, for hospitals and medical centers; The Educational Criteria, for academies and educational centers; The Business Criteria for jobs, businesses and non-profit organizations [11]. Before 1999, just profitable companies in service providing, manufacturing and/or small business sections were eligible to receive the Award. After 1999, non-profitable companies such as those involved in education and health became eligible to receive the Award, too. This was to understand the increase in medical and health costs and the need for improving performance in this section [12].

Studies suggest that the organizations are spending enormous effort for training specific skills, annually. However, neither assessment of efficacy takes place nor appropriate feedback system does exist. Unfortunately, in many cases, efficient educational system does not exist or is very scattered and disorganized [13].

Considering the problems mentioned above, it is necessary for the continuous assessment mechanism in the structure of medical education system. A mechanism helps to maintain the educational quality and the required dynamics for medical education with regard to the needs of society [14].

In Iran, some parts of hospitals act as educational hospitals. However, All of them have 'training' and 'health care' functions, but there is not a unique model to evaluate how they are operating and compare their performance. Until now, many studies have been conducted for assessing health care performance of these hospitals, but not their educational performance independently [15].

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Concerning this point and the relative superiority of Malcolm Bridges' model of excellence and regarding the fact that Malcolm Baldrige Model has distinctive checklists for 'health care' and 'education' branches, the researchers decided to evaluate this hospital concerning both arenas by applying Malcolm Baldrige Models.

## Materials & methods

This research was a descriptive study, which was conducted by cross-sectional method. Data gathering tools in this research were international and standard checklist of Malcolm Baldrige Model in both education (2007 Edition) and health arenas (2005 Edition).

Baldrige' Model in both of these branches has distinctive checklists comprised of seven major criteria, which are divided into thirty-seven minor criteria.

These checklists are accessible through the mentioned organization. The environment of this research was Shahid Hasheminejad hospital which was an education-medical hospital affiliated to Iran University of Medical Sciences located in Tehran.

The data gathering approach was that of presenting at Hasheminejad hospital, the performance of the hospital based on criteria of Baldrige model on 'education' and 'health care' branches, by interviewing chief managers of hospital, studying the records and documents in each criterion and separately supplementing the checklist related to both fields, after receiving objective evidences, were evaluated.

After comparing the hospital's performance with criteria contained in model, points to fit any of the two fields were awarded and finally the rates of both fields were determined. The data obtained from all phases were analysed qualitatively. Descriptive statistics were applied for analyses.

## Results

The mentioned hospital was established by its benefactor, late Daryani, in 1957, then after 1985 was named 'Shahid Hasheminejad Hospital', and started its activity as a national centre for treatment of renal diseases. Shahid Hasheminejad is a medical- education centre affiliated to Ministry of Health and Medical Education and one of the hospitals affiliated to Iran University of Medical Sciences. 220 beds in 14 sections, 12 clinical wards, 7 clinics and 8 operating rooms are active to provide high professional services in the field of urology, nephrology, endourology, kidney transplantation, open-heart surgery and vascular surgery.

Annual training of more than 380 medical students at different levels, more than 254 nursing students in a variety of expertise. The findings showed that regarding the standard process and results of organizational performance in the health care field, this hospital obtained 42.6 percent of total points of this model (426 of 1000). Table 1 indicates the findings in this field.

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**Table 1.** Distribution of Haheminejad hospital performance based on process and organizational performance results criteria in the Health Care area, 2008

| Criteria | Model (maximum acquisition) | Sample (The acquired) | Percentage acquired |
|---|---|---|---|
| **Leadership** | 120 | 46 | 38 |
| Senior leadership | 70 | 35 | 29 |
| Governance and social responsibility | 50 | 11 | 29 |
| **Strategic planning** | 85 | 38 | 44 |
| Strategy development | 40 | 18 | 20 |
| Strategy deployment | 45 | 20 | 22 |
| **Focus on patient, other customers, and market** | | | |
| Patient, other customers, and health care market knowledge | 85 | 41 | 50 |
| Patient and other customer relationships and satisfaction | 40 | 13 | 16 |
| **Measurement, analysis, and knowledge management** Measurement, analysis, and review of organizational performance | 45 | 28 | 34 |
| Information and knowledge management | 90 | 40 | 44 |
| **Staff focus** | 45 | 21 | 23 |
| Work systems | 45 | 19 | 21 |
| Staff learning and motivation | 85 | 43 | 51 |
| Staff well-being and satisfaction | 35 | 15 | 18 |
| **Process management** | 25 | 11 | 13 |
| Health care management | 25 | 17 | 20 |
| Support processes and operational planning | 85 | 33 | 39 |
| **Organizational performance results** | 45 | 19 | 22 |
| Health care outcomes and service delivers results | 40 | 14 | 17 |
| Patient-and other customer-focused results | 450 | 185 | 41 |
| Financial and market results | 100 | 40 | 9 |
| Staff and work system results | 70 | 33 | 7 |
| Organizational effectiveness results | 70 | 30 | 7 |
| Leadership and social responsibilities | 70 | 29 | 6 |
| **Total Points** | 70 | 33 | 7 |
| | 70 | 20 | 4 |
| | **1000** | **426** | **42.6** |

As can be seen, this hospital obtained 426 of 1000 scores of Malcolm Baldrige's model in the health care field.

Regarding the above table, it can be observed that within major criteria, the highest score was related to the standard of focusing on staffs with 43 points, %51 of the total score of this model.

On the other hand, the leadership standard obtained the lowest score. Since, this hospital obtained a total of 46 points equals to 38 percent of above criteria score. Table 2 represents the findings of the study in the education field.

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**Table2.** Distribution of Hasheminejad hospital performance Based on process and organizational performance results criteria in the Education area, 2008

| Criteria | Model (maximum acquisition) | Sample (The acquired) | Percentage acquired |
|---|---|---|---|
| **Leadership** | 120 | 23 | 19 |
| Senior leadership | 70 | 15 | 21 |
| Social responsibility and control | 50 | 18 | 36 |
| **Strategic planning** | 85 | 28 | 33 |
| Strategy development | 40 | 16 | 35 |
| Strategy deployment | 45 | 12 | 30 |
| **Student, Stakeholder, and Market Focus** | 85 | 28 | 33 |
| Student, Stakeholder, and Market Knowledge | 40 | 11 | 27 |
| Student and Stakeholder Relationships and Satisfaction | 45 | 17 | 38 |
| **Measurement, Analysis, and Knowledge Management** | 90 | 18 | 20 |
| Measurement, Analysis, and Improvement of Organizational Performance | 45 | 14 | 31 |
| Management of Information, Information Technology, and Knowledge | 45 | 7 | 15 |
| **Workforce Focus** | 85 | 27 | 32 |
| Workforce Engagement | 40 | 14 | 35 |
| Workforce Environment | 45 | 13 | 29 |
| **Process management** | 85 | 17 | 20 |
| Work Process Management and Improvement | 50 | 5 | 10 |
| Work Systems Design | 35 | 12 | 34 |
| **Organizational performance results** | 450 | 81 | 18 |
| Student Learning Outcomes | 100 | 14 | 14 |
| Student- and Stakeholder-Focused Outcomes | 70 | 22 | 31 |
| Budgetary, Financial, and Market Outcomes | 70 | 8 | 11 |
| Workforce-Focused Outcomes | 70 | 8 | 11 |
| Leadership Outcomes | 70 | 14 | 20 |
| Process Effectiveness Outcomes | 70 | 15 | 21 |
| **Total Points** | **1000** | **222** | **22.2** |

As can be seen, this hospital obtained 222 (22.2 percent) of the total 1000 points of Malcolm Baldrige's score.

The above table shows those main criteria of strategic planning and the focus on students, interest groups and marker obtained the maximum score. Since, each of them has obtained 33 percent of the total score of the model and the minimum score, 18 percent, belongs to the results of organizational performance criterion.

## Discussion

### Leadership Criteria

The findings of research indicated that leadership criterion in the healthcare field comparing two main criteria of the model, and in education, a field next to criterion of organizational performance results obtained the lowest scores. Yet, Badri knows the leadership

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criterion as conductor of all components of the Baldrige system including knowledge management and analysing, strategic planning and the focus on personnel, board and management of processes [16]. Mayor, also, introduces this criterion as the leader of other standards of the Baldrige Model [17]. The above tables show that based on leadership standard, the performance of Hasheminejad hospital in the health care field is better than in the education field, with 46 and 23 points, respectively. The reason for this difference is that the hospital's main concern is over treatment. One of the positive points of the hospital, regarding leadership criterion, is the existence of the board of directors, forming various committees for group decision- making, presenting the prophecy, perspective and codifying the weak and strong points. However, since this hospital is in the beginning, commitment of management and other personnel to review the mission and other codified cases are essential.

**Criteria of strategic planning**

According to above tables, the hospital gained 44 and 33 percent of total scores in health care and education fields, respectively. As Maleki expresses: The strategic planning is one of the desirable plannings which fits the relatively unstable environments [18]. Hospital, also, is of those organizations that are located in an unstable and dynamic environment. Therefore, it needs an especial concern in terms of strategic planning. This hospital has used symmetric scoring cards. Applying these cards is an elite opportunity to do activities in time to achieve predefined strategies. However, in terms of management perspective, the process of designing strategies to achieve set goals is a vital and significant process that demands activities beyond using symmetric scoring cards. Yet, applying this tool has been a significant strength point for the hospital. M. Sax, also, expresses that strategic planning defines a framework to harmonize the efforts to make sure that key interest groups have comprehended the key objectives of the organization and are the operating support for them. This process can determine new opportunities to use [19]. This study confirms the findings of M. Sax, so the organization can discover its weakness and strength points soon enough to solve the weak point and to use the strength point. With another look at the above chart, we can see that the obtained score by hospital in relation to its performance with educational perspective is lower than with health care perspective. So that, according to the importance of educational responsibility and strategic planning of hospital to progress in implementation plans, more focus on this standard in education field is one of those points to be improved.

**Standard of focus on patients (in health care field), students (in education field), interest groups and market**

Danini in his research expresses that patients who use medical and health services should be provided by those services that meet their consent. Therefore, it is necessary to be concerned about creating a condition to take patients, experts and nurses' consent into consideration. From this perspective, it is necessary to develop an educational approach to meet patient's consent in medical process which continues until his discharge from hospital [20]. The findings of this research showed that



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Hasheminejad hospital, also, applies such an approach. Continuous efforts of the hospital towards patient satisfaction, including giving welcome from the authority that pursues the patients' satisfaction and pursuing their conditions by telephone contacts after discharge from hospital that is an advantage of the hospital in this standard. It will result in increasing patients' royalty to the above hospital. Its outputs indicated the results of hospital's performance. However, with another look at the above chart, we can understand that in this criterion, the score in the health care field is higher than education as well. So that, strengthening of education aspect is among the points to be improved.

**Standard of assessment of analysis and knowledge management**

As the above charts are showing, 44 percent of the standard's requirements in predetermined fields and 18 percent of the requirements of standard of assessment, analysis and knowledge management are achieved. According to findings, using the integrated system of information on recording and maintaining the patients' files is one of the advantages of this hospital. In addition, applying the above system in official contacts and creating a connection between the hospital president and this system to control the indicators of bed occupancy and so on in different sections of the hospital is another advantage of this hospital. Upgrading the system to reduce the hospital deductions by using the expertise of insurance companies in the hospital is also proceeding. As Herseni states, applying information technology in an organization affects the different aspects of management quality, positively [21]. Siamian, too, emphasizes on the importance of excising software in the world and introduces them as comprehensive sources of information to insurance companies for their financial repayments [22]. Determining some indicators to ensure the accuracy and precision, having up-to-date integrity and credibility, keeping safety and reliability of data entered into system, providing the possibility for transferring personnel's knowledge and information via Hospital Information Network, entering educational field into the system to enhance the educational level of hospital, establishing electro connection with the professors and the prominent who are outside the organization to take advantage of their knowledge, are some other points to be improved in this field. In addition, education field based on the standard of knowledge management obtained lower scores in comparison to the health care field, which indicates the necessity of paying more attention in using hospital information technology in the education field.

**Standard by focusing on staffs**

The mentioned hospital has obtained 45 of 85 and 27 of 85 scores in health care and education fields, respectively. According to Co, these patients are more satisfied with health care services of the physicians who have great job satisfaction. In addition, these kinds of physicians increase the patients' royalty, describe the medical orders better and increase the possibility of prolonging these orders by the patients [23]. The findings of this research confirm these findings as well, since by obtaining a higher score in personnel's job satisfaction in the health care

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field, the patient's royalty has been increased which we can see this point in the results of organization performance section. However, this increase in royalty of patients can be due to other reasons such as implementation of giving welcome plan to patients, and the services pursue the patients' conditions after discharge.

As mentioned earlier, personnel's job satisfaction can be one of these reasons. In general, according to the findings of this research, the existence of an initiative reward system is also an advantage of this hospital; for example, allocating reward to those who have suggestions resulting in improvement of the organization's performance along with using an expert to evaluate hospital's health and infection rate, are points to be improved. Applying standard forms for evaluating personnel's job satisfaction and establishing a plan to recognize the stresses of workplaces, to comply with professional health in an organization. Besides, as mentioned previously, the hospital has gotten better score in healthcare field in comparison to the education field. Therefore, more attention to satisfaction-assessment, job health and systems of the board members, students and other interest groups in education are the points to be improved.

**Standard of processes management**

According to recent findings, Hasheminejad hospital has got 33 of 85 and 17 to 85 of the standard's scores in health care and education fields, respectively. Mojdeh Kar, in her study, concludes that the systematic perspective of the Baldrige system causes to understand the inputs, outputs, system's components, processes and feedbacks.

The findings of recent research approve that we can recognize processes, inputs and outputs via this model (based on sixth standard) and improve them. In addition, Hesam expresses in his research: managers' efforts to extend the ISO9001:2000 annually and improving the performance can help to enhance the service quality and provide an optimized system to create a constant improvement in hospital processes [24]. The findings of this research, also, confirm this fact. The hospital's effort to obtain ISO9001:2000 certification is one of the advantages which results in providing activity processes of hospital in different sections. Therefore, this hospital has established different managerial, financial, and supportive processes. However, because of that, this hospital is in the beginning of this road and the reviewing processes have not yet been done, reviewing the processes and determining weakness points are of the advantages of this standard to be improved.

**Standard of organization's performance results**

The findings showed that this hospital has got 185 of 450 and 81 to 450 of the standard's scores in health care and education fields, respectively. As was mentioned earlier, this standard in education field has obtained the lowest score within major standards; however, Salarian, in his research, expresses that the necessity of attention towards hospital performance indicators are inevitable to increase the efficacy and performance of the hospital [25]. In addition, the findings of this study show that with regard to organizational performance indicators, we can recognize its advantages and disadvantages and proceed to strengthen the

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performance with regard to the points to be improved.

## Conclusion

Considering the results obtained in the current study, it can be concluded that the Malcolm Baldrige model includes many features to evaluate the performance of health and health care organizations, and the educational institutes. According to the results of this survey, Malcolm Baldrige can be used as a comprehensive model to evaluate the performance of health care and educational organizations. With the use of this model, the organizations' weaknesses and strengths would be clear to the authorities, and they can take steps towards the improvement and the growing promotion of their organization by using these data. As Mojdeh Kar, also, states in the results of her work: "By using the Malcolm Baldrige model in hospital assessment, determining the sensitivity and key areas, the assessment at any period of time, and profiting a suitable framework to improve the hospital performance would be possible. The platform organizational learning and the improvement basis would be provided. As a result of the attitude system, the recognition of inputs, outputs, the system components, and processes and feedbacks would be obtained [3]. Manjanas also used the Malcolm Baldrige model to evaluate the performance of a hospital case study and could infer the weaknesses and strengths of that organization.

He inferred that the hospital case study is at a high level in qualitative performance, and that the hospital could still improve its performance in measurement, analysis, and knowledge management [26].

In conclusion, the Malcolm Baldrige model comprises many features for evaluating the performance of health and health care organizations, and the educational Institutes. By utilizing the above check lists, the performance of Health care and Educational organizations could be evaluated extensively, and lead to the improvement of their performance.

In other words, on the other hand, the two missions of medical and educational hospitals, which are educational and health care objectives, are regarded as two wings of a bird and they are equivalent in importance and value. By the use of the above checklists the performance of Health care and Educational Organizations could be evaluated in a comprehensive way in both fields and lead to the simultaneous improvement of their performance.

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