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Evaluating the Performance of Isa Ibn Maryam Hospital, in Isfahan University of Medical Sciences based on quality management indicators with a 360 Degree feedback approach

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ABSTRACT

Background: Medical diagnostic laboratories and accuracy and precision of laboratory test results play a decisive role in improving services delivery to patients. Therefore, special attention to the quality of medical health services activities appears to be essential. This study aimed to evaluate the performance of laboratory of Isa ibn Maryam hospital of Esfahan due to the concept of quality management and carried out by using a 360 degree feedback approach.

Methods: The current paper is a cross-sectional study which was conducted in Isa ibn Maryam hospital in Isfahan University of Medical Sciences. Simple random sampling is used and totally 42 patients and hospital staff (laboratory customers) were selected. The data collection tool was a self-made questionnaire and data were analyzed using Microsoft Excell 2010.

Results: Based on the findings, the highest mean score of evaluating performance was related to pediatric department with a score of 5/50 and the lowest mean was related to hygiene and the infection control unit was with a score of 5/42.

Conclusion: The most important flaws in each performance evaluation system are personal taste orientation and applying personal views. Thus, it may be possible to minimize the deployment of personal opinion in evaluations by using a 360 degree feedback approach.

Keywords: Laboratory, Performance Evaluation, 360 Degree Feedback

Citation

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Introduction

Using high quality services can help to save money and create a satisfactory environment. Achieving high quality leads to both patients' satisfaction and affective professional provision of services (1). On the other hand, medical diagnostic laboratories play an important role in the quality of medical services. Based on the information provided by laboratories to doctors, decisions about the diagnosis of the disease, patient's treatment and follow-up choices are made. Therefore, it can be said that the way laboratories operate and the accuracy of tests results have an undeniable impact in improving the delivery of services to the patient Therefore, attention to the quality of activities in this area of health services seems necessary (2).

The quality of the lab services directly affects the quality and integrity of all the information required for medical care. On the other hand, there is no reliable and specific tool for measuring the quality of services in the laboratory. Several studies have been carried out on evaluation methods, but none have emphasized on a particular method. They have focused on needs to first determine the organization goals and expectations of the performance evaluation and then the appropriate method was selected according to them (3). An appropriate performance assessment system, if designed according to competencies of the organization, can establish the foundation of an organization and improve the performance of employees (4). According to Fortune Journal research on the use of multiple performance evaluation and benefits of each, the application of the 360 ° feedback approach in the last 15 years has dramatically increased (3). Since there are some advantages like convenience, low cost, maximizing employee's involvement and using multiple organizational resources (5).

A 360-degree assessment will streamline feedback input information from a one-dimensional, top-down approach to a multi-dimensional approach (subordinates, colleagues, and customers) and is a "borderless assessment." Some researchers have used the 360 degree approach for evaluation in their studies. In a study by London et al. (6), in 2014, the reliability, validity, universality and performance of the 360-degree feedback approach were investigated in a systematic review to assess physicians' performance The findings of this study showed that this approach is an effective method for providing feedback to physicians about their clinical and non-clinical performance and has appropriate reliability, validity and feasibility. Javadi (7) also, has done a study in 2011 entitled "The role of Performance evaluation with the 360 Degree approach on Organizational Effectiveness". He found that this approach is a good way to increase leadership quality and development management. Furthermore, it results in attention to the customer and service quality by employing all staff, realizing evaluation objectives in line with the organization values and achievements such as high participation, evaluation of development needs, and developing teamwork .

The other related study is the study of Okan et al. (8), in 2005. They evaluated the performance of free clinics in Virginia, the U.S via DEA. They found that 62.5% of clinics had a satisfactory performance and acceptable efficacy whereas other clinics were inefficient. A research conducted by Tehran University of Medical Sciences in 2009 in 14 clinical labs showed that the total rate of compliance with the quality assurance principles was 22/67 percent, which is not optimal (5).

Due to the determinant role of services quality in customer satisfaction, its measurement tools are of great importance and since the laboratory is one of the main determinants of hospital services quality and has a significant impact on the treatment course; therefore, for measuring laboratory services quality one of the most important tools is evaluating the performance of this unit based on the customer's view (9). Furthermore, due to the lack of specific tools for

assessing the performance of the laboratory unit and the lack of a high degree of assurance, the best practice is the 360 degree feedback to increase the reliability and validity of performance evaluation and to ensure of the achieved results. Therefore, the present study was conducted with the aim of evaluating the performance of the laboratory in terms of quality management indicators and the 360 degree feedback approach at Isa Ibn Maryam Hospital in Isfahan. This study aims at simultaneous implementation of ISO quality indicators and a 360-degree feedback approach to evaluate the performance of a hospital unit for the first time in the country.

Materials and Methods

This study was conducted in a hospital affiliated with Isfahan University of Medical Sciences in 2011. The study population included all clients of the medical diagnostic laboratory (all units directly involved with the hospital laboratory unit) including hospital management, heads of Clinical units, clinical services governance, Productivity Office, Nursing Services Management, Infection Control, Health, Direct Referrals to the Laboratory (Patients) as well as Hospital Laboratory staff. Forty two of them entered the study by stratified sampling in the first six months of 1394. Therefore, to evaluate the performance of lab, the questionnaires were completed by 2 staff members of the laboratory for self-assessment, by hospital administrator, 2 personnel of clinical governance unit, 2 staff members of the health and infection control unit, 4 personnel of the internal surgery department, 7 employees from intensive care unit, 2 people from Pediatric unit, 3 from nursing services unit, 4 from operating room, 3 from emergency room and 12 outpatients and their caregivers who were referred directly to the laboratory.

So far, various models have been presented to evaluate the performance of the laboratories, which in many of these models all aspects of the laboratory centers operation have not been taken in to consideration. The model used in this research is based on the quality management standards, ISO 1581, ISO 9001: 2008 ISO 17025, all important criteria for achieving customer-oriented objectives and improving the quality of the laboratory, including space facilities and laboratory processes, safety of cleaning and risk management, time management and waiting time, professional ethics of employees, and customer satisfaction and dissatisfaction assessment within the 360-degree feedback approach. Furthermore, the most important shortcoming of a unit performance (whether laboratory or other departments of the hospital) is being taste-oriented and applying personal opinions to delineate the existing situation. However, in order to overcome this problem, the 360-degree feedback approach was used to eliminate the effects of personal opinions and to achieve a comprehensive evaluation, far from any personal preference. In this model, a comprehensive assessment is done by the higher unit, colleagues from other units, direct clients (patients), as well as self-evaluation by unit staff, which is preferable to evaluation by others. Therefore, in the present study, the 360 degree approach was used to evaluate the performance of the laboratory. The lab communicative model with other study units based on the 360 degree approach is as follows:

After receiving the letter of recommendation from Isfahan University of Medical Sciences and obtaining the consent of the hospital administration for the study, the researchers collected data by going to research units and ensuring confidentiality of information and obtaining their verbal consent.

The data gathering tool was a researcher-made questionnaire, through the study of various scientific sources and according to ISO and quality management standards. The questionnaire consists of 40 questions with five levels and points from five to one; excellent (5), very good (4), good (3), medium (2) and weak (1). The questionnaire includes areas of facilities, space and laboratory

processes (14 questions), safety, cleaning and risk management (11 questions), time management and waiting time (6 questions), professional ethics of employees (5 questions), client's satisfaction assessment and complaint review (4 questions). In general, all qualitative aspects of the lab that are in face to face contact with clients, or patients themselves are taken into account.

The reliability of the questionnaire was confirmed according to ISO and quality management standards and the reliability of the internal consistency of the questionnaire was calculated by Cronbach's alpha coefficient 0.888, which is desirable. Furthermore, to confirm the validity, the questionnaire reviewed by the faculty members of the health services management group of Isfahan University of Medical Sciences and the necessary changes according to professors' opinions, was finalized.

The Data analysis tool, unlike other similar articles in this area, which is often SPSS software, is Excell 2010 software. The purpose of this is to attract the researchers' attention to capabilities of this software and the simplicity of doing the analysis.

Further, in the current study all ethical issues were observed based on the Helsinki Declaration.

Results

The participants in the study were 96.05% (29 people), 30.95% (13 people), 27 had bachelor degree, 10 diploma holders, 3 had associate degree, and 2 had PhD and master degree. Of these, 71.43% (30) were employees, 16.67% (7) were patients' care givers and 11.9% (5) were patients who participated in the study.

The degree of the familiarity of evaluators with the quality management for 54.75% (23 people) was low, 35.72% (15 people) was high and 9.52% (4 people) had no knowledge of the subject.

According to Table 1, in the first area of lab evaluation regarding quality management (facilities, space, and laboratory processes), the highest score is for the pediatric unit with an average of 50.5 (72%) and the lowest score is for the infection and health unit with an average of 32.5% (46%). Furthermore, in terms of laboratory staff, the performance of this department in the first area was an average of 35 (50%) points. Given that the maximum possible score is 70 (70 = 5 points × 14 questions), the difference between the points obtained in this area and the ideal point can be examined by various evaluators.

According to the results of this study, the second area was about safety, cleaning and risk management in the laboratory, with the highest score for the clinical governance and productivity unit with an average of 41 (74%) and the lowest score for the unit of health and infection control with an average of 29 (52%). In this area, lab staff gave 31 points (56%) to their unit, with a maximum score of 55 in this area (55 = 5 points × 11 questions).

In the third area of performance evaluation in terms of quality management (time management and waiting time), the Clinical Governance and productivity unit gave the highest score with an average of 21 (71%) to the performance of the laboratory and the lowest score to the hospital administration and intensive care unit with an average of 15 (50%). It should be noted that the laboratory staff evaluated their unit 53% (16 points) successful in terms of time management. The maximum possible average in this area was 30 (30 = 5 points × 6 questions).

The fourth area of the lab quality management evaluation was professional ethics of the staff, with the highest score for the Clinical Governance and productivity unit and the pediatric unit with an average of 21.5 (86%) and the lowest score with an average of 8 was given to the laboratory by the hospital administrator. Also, Laboratory staff gave their unit performance a score of 13, while the total score was 25 (25 = 5 points × 5 questions). In the fifth area of laboratory evaluation, with respect to quality management (satisfaction evaluation and complaint review), the pediatric ward with an average of 15 points and the emergency room with an average of 8.68 points gave the lowest score to the lab. The lab staff also received a score of 9.5 in terms of complaints handling and customer satisfaction. The maximum achievable score was

20 (20 = 5 points × 4 questions). Based on the average acquired scores of the hospital laboratory, from the client's point of view, the area of safety, cleaning and risk management received the highest score (63%, 34.42 out of 55 points) and the area of facilities, space and testing processes (56%, 39 out of 70 points) received the lowest score.

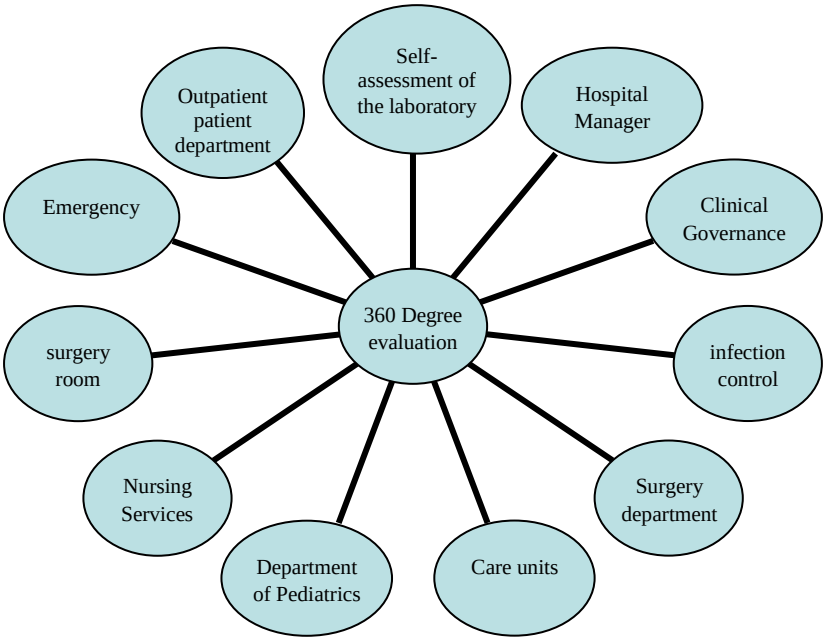

Figure 1. Lab relations with other study units based on the 360 degree approach

Table 1. Average scores of different areas in the performance evaluation based on the 360 degree approach

units The average score	Maximum score	laboratories	Hospital administration	Clinical governance and produ	Health and infection control unit	Internal surgery unit	Intensive care units	Pediatrics unit	Nursing services	Operating room	emergency	clients	Total average in each area
The number of people		2	1	2	2	4	7	2	3	4	3	12	
First area	70	35 50%	35 50%	44.5 60%	32.5 46%	38.5 55%	36 51%	50.5 72%	44.33 63%	33.25 47%	43.67 62%	40 57%	39 56%
Second area	55	31 56%	38 69%	41 74%	29 52%	33.75 61%	32.57 59%	40.5 73%	35.67 64%	37.75 68%	33.67 61%	31.25 56%	34.42 63%
Third area	30	16 53%	15 50%	21.5 71%	17.5 58%	17.25 57%	15 50%	20 66%	19.33 64%	17.25 57%	20 66%	17.08 56%	17.81 59%
Fourth area	25	13 52%	8 32%	21.5 86%	13.5 54%	15 60%	15.42 61%	21.5 86%	15.33 61%	16.5 66%	16.67 66%	16.17 64%	15.69 62%
Fifth area	20	9.5 47%	14 70%	14 70%	10.5 52%	11.25 56%	9 45%	15 75%	11 55%	10.25 51%	8.67 43%	12.5 62%	11.42 57%

Discussion

This article has several features. Firstly, it is the first time that the 360-degree performance evaluation model was used for monitoring the quality of a clinical laboratory in Iran. Secondly, the survey is a kind of external audit because, using several quality assurance indicator in the framework of the ISO guidelines, it monitors all aspects and activities performed in the laboratory services system. The 360-degree evaluation approach and the completion of the related questionnaire by all internal and foreign clients as well as the laboratory staff unit to ensure accurate and reasonable evaluation, apart from personal tastes and opinions, are other features of this article.

In the present study, the researchers investigated the performance of the laboratory through the 360 degree approach in terms of quality management in areas of facilities, space and laboratory processes, safety, cleaning and risk management, time management and waiting time, professional ethics of employees, and evaluation of the client's satisfaction and complaint handling.

Data analysis showed that the first area (facilities, space, and laboratory processes), has averaged 39 points (maximum possible score: 70), which means that from the perspective of evaluators, 56% of standards are generally met. Based on quality assurance indicators in ISO guidelines a study was done by Hossein Dorahi et al. in 14 clinical laboratories of hospitals affiliated with Tehran University of Medical Sciences, entitled "monitoring Performance Management of Hospitals Clinical labs". The highest score in terms of the availability of facilities and physical space was reported for Valiasr Hospital with a 91.99% rating. Generally, in hospitals under study, 81% of facilities and physical environment standards were maintained to be at a high level (5). However, compliance with the standards in this area in the investigated hospital is not at a desirable level. Therefore, increasing compliance with the standards in Isa Ibn Maryam Hospital in Isfahan requires a lot of efforts and provisions such as appropriate equipment and machines, and enough money.

Based on the results of this study, the area of safety, cleaning and risk management in the laboratory received 34.42 points (62%), which is relatively desirable. In the study of Amerion et al. (10), in a laboratory, the patient and employee's safety was in line with the standards and at a desirable level . Furthermore, in the study of Dargahi et al. (5), the highest points regarding employees' safety principles, environment health and occupational health of staff in Roozbeh Hospital were reported with 80.87% compliance ; Therefore, the present study is compatible with the two above-mentioned studies. According to the findings of the present study, in the third area of performance evaluation in terms of quality management (time management and waiting time), the laboratory received an average of 17 points; in other words, from the perspective of evaluators, 59% of standards were met. The fourth area was the evaluation of the laboratory in terms of quality management about professional ethics of employees, the average rating obtained from evaluators was 15 (62%), and both areas are at a relatively satisfactory level. Data analysis showed that in the fifth area (satisfaction and complaint review), an average of 11 points was obtained; that is, according to clients' opinions at Isa iBn Maryam Hospital, this department has been able to attract only 57% of clients' satisfaction. In an experiment that Amerion and colleagues conducted at a military hospital laboratory, services provided in the lab would relatively satisfy the service receiver (10). Therefore, this study is in line with the current research in the field of customer satisfaction.

Based on the achieved average scores of the laboratory in the above mentioned hospital, from the point of view of its customers, the area of safety, cleaning and risk management has received the highest score and the area of facilities, space and laboratory processes, the lowest score. Furthermore, in the study by Dargahi (5), the highest level of compliance with quality assurance indicators was for facilities and

physical space, and the lowest one was for employee safety in clinical laboratories of the study, which was not consistent with this study due to the difference in the studied community and the lack of facilities at Isa Ibn Maryam Hospital in Isfahan, compared to Tehran hospitals.

Conclusion

This research is aimed at simultaneous application of ISO quality indicators and a 360 degree feedback approach to evaluate the performance of a hospital unit for the first time in the country.The results of this research are highly reliable with respect to the high reliability of ISO standards as well as the 360 feedback model. The customers' inadequate knowledge (domestic and foreign) of quality management issues, ISO, and customer-oriented indicators, the conservatism of some hospital officials and the negative attitude toward the research, were among the most important limitations of the research. Since the initial experience of each performance evaluation model in each area alone is not enough to improve the performance of that area, its continuity as a continuous process and repeated revisions, would be complementary, strengthening and would guarantee the success of these models. It is hoped that this approach will be used to evaluate the performance of other clinical laboratories all over the country to improve both domestic and foreign customers' satisfaction level.

Conflicts of interest

The authors mentioned no conflict of interests for this research.

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Author's contributions

Mohammadpour S and sheykhabumasudi R and Shaabani Y designed research; bakhshi mohammadi M conducted research;Rezazadeh A analyzed data; Yusefi Sh wrote the paper. Mohammadpour S had primary responsibility for final content. All authors read and approved the final manuscript.

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