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Opportunities and challenges of resident specialists' attendance plan guidelines (health-care transformation plan) in Isfahan university hospitals in 2015

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Abstract:

BACKGROUND: Given new reforms in Iran's health-care system and due to the need for gathering evidence regarding the implementation of this plan, this study aimed to investigate opportunities and challenges created by resident specialist attendance plan guidelines in university hospitals.

MATERIALS AND METHODS: This study used the qualitative method. Semi-structured interviews were used for data gathering. The study population included all experts of Isfahan University of Medical Science. Sampling was carried out using purposeful sampling method and continued until data saturation was reached. In total, 16 experts were interviewed. Criteria such as "reliability of information," "trustworthiness," and "verifiability of the information" were considered. Interviewees were assured that their names would keep hidden and that all information is confidential. Subject analysis method was used for data analysis.

RESULTS: The findings of this study based on subject analysis led to extracting three themes in regards of challenges in the implementation of resident (specialist or fellowship) plan in hospitals including structural, management, and resource challenges and one theme in the area of opportunities which were improved quality and timely provision of services.

CONCLUSION: The findings showed that despite the strengths of this guideline, there are some fundamental challenges in various areas and need better attention by national level policymakers. These results help health-care policymakers to evaluate the problem with a better attitude and improve the necessary plans for implementation of these guidelines.

Keywords:

Delivery of health care, health services administration, specialist

Introduction

In all countries around the world, the health-care needs are transforming and health-care systems are obliged to answer these needs.^[1] The increase in health-care costs, an aging population, high prevalence of chronic diseases and disabilities, and advancements in diagnostic treatment technologies^[2] has

forced health-care systems worldwide to change to adapt to these changes.^[1] These adaptations are often brought about using transformation and reform plans. Reform is creating major changes to overcome the accepted weaknesses of the system but in health-care system, reform requires more than just changes in health-care and medical systems.^[1] In general, health-care reforms

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include improving financial support and coverage, targeting inconsistencies and limiting to the inequity in healthcare, organizing the health-care systems to provide more effective care with higher quality, educating the patients by providing up-to-date and relevant information, and finally supporting the people active in health care and medicine sectors to improve the service quality and the quality of applied researches.^[3]

In Iran, after many years, the obligation of the government for improving the health status of the populace has seen action as Healthcare Transformation Plan. This plan aimed to improve the quality of the health care and medical services, equate the access of people to health care, especially in deprived or less developed locations, reduce the cost of the health care for patients as well as improve the attraction and retention of specialized human resources such as physicians. This plan was announced to all universities of medical science and government health-care centers and hospitals by the minister of health, medicine, and medical education in May 14, 2014.^[4,5] One of the main components of this plan, known as guideline number 3, is the resident specialist attendance plan for hospitals under the supervision of Ministry of Health, medicine, and medical education. The goal of this part of the plan is to improve the access of patients to health-care services by ensuring the 24/7 presence of specialist physicians at treatment and education hospitals, minimizing the admission time for the patients in emergency wards, timely patient visits, operations, and emergency procedures, and improving patient satisfaction.^[6] Based on these guidelines, resident specialists are obliged to have physical and active presence in the hospital during all resident hours and actively participate in diagnosis and treatment of patients related to their area of specialization.^[6] The implementation of these guidelines is expected to improve responsibility of the caregivers without reducing patient care quality, medical education, or the quality of life of the physicians.^[7]

Some studies have investigated the effect of resident specialized physician and show positive effects on clinical results. Gharibi *et al.* in their study considered resident specialists and the obligation of hospitals for having all major specializations to be the strengths of the health transformation plan but believed that insufficient presence of physicians and inappropriate behavior of resident specialists toward patients and staff members are weaknesses that need to be addressed in this regard.^[8] Gajic *et al.* in their study showed that 24 h presence of medical staff in intensive care units can improve care and patient and staff satisfaction, lower the complaint rate, and reduce the length of hospitalization compared to using on-call staff.^[9]

This guideline could have positive effects such as helping to reduce medical errors^[10] due to the presence

of specialists, more effective treatments, and reducing the length of hospitalization^[11] and negative effects such as too much specialization (when a more general one is needed), the effects of consecutive shifts on the quality of life of resident specialists, working during sickness and disability, increase in liability insurance rates due to increased demand,^[12] and similar effects. This turns the health transformation plan to one of the newest challenges in Iran's health-care system. Therefore, this study aimed to investigate the opportunities and challenges of resident specialist attendance plan guidelines in hospitals under the supervision of the Ministry of Health, medicine, and medical education.

Materials and Methods

This applied study was carried out using content analysis approach in year 2015. Data gathering tool was in-depth interview (semi-structured). The study population included specialized physicians, managers and directors of the hospitals, hospital matrons, managers of emergency wards, and expert staff of Isfahan University of Medical Science. The goal of the researcher in this study was to achieve a generalized view of resident specialist attendance plan guidelines and used a leading method to guide the interviewees toward the indented goal. The sampling was carried out using purposeful sampling method and continued until data saturation. In this study, after preparing an interview guide, interviews were recorded using a digital recorder in the workplace of the interviewees. Each interview lasted between 20 and 50 min.

To achieve the validity of the researcher's required expertise, with the guidance of the supervising and consulting professors, a number of test interviews were carried out before the study. Then, these interviews were analyzed by expert faculty members to evaluate their validity. The actual interviews started after making the necessary adjustments. To improve the reliability of the extracted codes, some of the participants were allowed review the results, and their opinions were taken into account. Lincoln and Guba criteria were used to determine the accuracy and reliability of the data. These criteria are similar to validity and reliability criteria in quantitative studies. To this end, four criteria of credibility, verifiability, reliability, and transmissibility were investigated.^[13]

The method used in this study was based on subject analysis method. Subject analysis is a form of content analysis which carries out the classification based on the main subjects. Data analysis consisted of seven steps including extraction and transcription of the data and entering the data into computer software, immersion in the data, coding, registering the reflective

signs, registering the marginal signs, summarization, and developing the suggestions. In the first step, the interviews were a transcript and typed immediately after each interview. In the next step, each interview was reviewed several times by the researcher to become familiar with the information. In the third step, the gathered information was divided into semantic units (codes) which included relevant sentences and paragraphs. Each semantic unit was reviewed several times, and the suitable codes were assigned to each semantic unit. To this end, subsidiary topics were determined, merged together and the main subjects were determined after reductionism. The fourth and fifth steps which include registering reflective and marginal signs are in fact writing down the ideas and thoughts that occur to the researcher during interviews and data analysis. In the sixth step, the codes were classified and categorized based on their similarity and were summarized whenever possible. Finally, the gathered information was divided into main categories, and abstraction themes and suggestions were determined.

Results

A total of 16 interviews were carried out during this study. The demographic information of the participants is shown in Table 1.

The findings of this study were divided into three main themes in regard to the challenges of resident specialist attendance plan guidelines in hospitals including structural factors, management factors, and resources

Table 1: Demographic information of the participants

Characteristics	Numbers
Average age (year)	45.18±7.96 (minimum=35, maximum=58)
Average work experience (years)	18.46±6.70 (minimum=9, maximum=28)
Gender	
Female	3
Male	13
Job title	
Hospital manager	3 persons
Hospital director	1 person
Expert of staff	4 persons
Supervisor	2 persons
Matron	1 person
Emergency medicine specialist	3 persons
Orthopedic specialist	1 person
Anesthesiologist	1 person
Education	
Bachelor degree	1
Master's degree	5
General medicine	4
PhD	1
Specialized medicine	5

and one theme in regards to opportunities created by these guidelines which includes improved quality and timely care [Table 2].

Structural challenges

Conflicting schedules with education plans of educational hospitals

The structural challenges are created due to the environment, in which the plan is implemented and usually due to not considering the conditions of hospitals in the plan. Some participants believed that conflicting schedules of a resident specialist with education plans of educational hospitals and lack of codified job descriptions can lower the effectiveness of this plan. On this topic, one of the participants (M12) said: "There is only one general guideline for all university hospitals and it does not consider the difference between normal and educational/treatment hospitals. There are three types of hospitals: educational hospitals in provincial centers such as Isfahan, private, and noneducational hospitals in Isfahan and hospitals in other parts of the province that are not education hospitals. These three groups have different conditions; in accommodations, effectiveness and specially in their work procedures." Another participant (M4) believed that the special conditions of educational/treatment hospital are the reason that this plan has been successful in normal hospitals but unsuccessful in educational hospitals. He said: "This plan was implemented correctly in normal and noneducational hospitals, but we had problems with educational hospitals because faculty members are no present in these hospitals effectively during evenings and night shifts which caused patients to become involved in educational part of the hospital and resident, assistant, and intern systems."

Conflicting schedules with on-call schedule of specialists in education hospitals

According to the participants, the conflicting schedules with on-call schedule of specialists are due to lack of proper planning before implementation of these guidelines. One of the participants (M12) believes that: "In educational hospitals, there is a resident specialist coming to the hospital from somewhere else because of this plan but there are also educational residents being trained in the hospital. These educational residents are supervised by a faculty member who is on-call and responsible for his or her residents and this causes conflicts between on-call and resident schedules." Another participant (M14) also mentioned the legal and jurisdictional problems caused by this challenge: "Since the resident specialist comes from another place, his name is not registered in HIS system of the hospital and so he cannot accept the patients. Because to do that they need to enter his name into the system and then

Table 2: The main themes determined according to the results

Resident specialist attendance plan	Themes	Categories
Challenges	Structural factors	Conflicting schedules with education plans of educational hospitals
		Conflicting schedules with on-call schedule of specialists in education hospitals
		Physician-centric environment
		Lack of suitable space and facilities for resident specialists
	Management factors	Lack of adherence by specialists to the guidelines and creation of induced demand
		Lack of adequate outside and inside supervision
		Not compliance with “Pay based on performance” rules
		Sudden implementation of the program and lack of pilot version
	Resources	Lack of stability in financial resources
		Increased staff workload
		Lack of sufficient health care providers especially nursing staff
		Wasting resources
Opportunities	Improved quality and timely care	Lack of adequate knowledge for determining the required resident specialists
		Insurance companies
		Improved patient satisfaction
		Providing care to the patients in a timely manner
		Equity in access to healthcare
		Improved healthcare quality

enter his name into the patients’ files. Hence, if there is a problem legally, and in courts, it is the on-call physician who is responsible.”

Physician-centric environment

Another challenge for these guidelines is the physician-centric environment of hospitals that causes problems for implementation and supervision of these guidelines. In this regard, one of the participants (M3) said: “With all due respect to fellow physicians, one problem in our country is that our health-care system is physician centric and mane of the managers of wards and other managers cannot or would not manage the physicians decisively and some of the physicians do not believe in following the rules and guidelines of the system.”

Lack of necessary space and facilities for resident specialists

In regards to lack of facilities, participants believed that lack of diagnostic and treatment facilities in hospitals with resident surgeon, unsuitable or distance accommodation facilities, and dissatisfaction of resident specialists with these accommodations are among the challenges of these plans. One of the participants said: “We have a boarding house; I personally don’t care because most of my time is in the operation room and I’m not really sensitive to these things and just need a place to stay... but I can’t mention any special accommodations.” Another participant said: “Yes, there are accommodations for resident specialists but the first condition is that it needs to be physically close to the place they work in. For example, accommodations for emergency specialists must be close to the emergency ward or close to operation room for surgeons so that they

can get to the patients quickly. However, in most cases, these conditions are not met. For example, the surgeons stay in one place while orthopedists and emergency specialists in another location and anesthesiologists in another. Usually, all members of a medical team should stay at the same location.”

Management challenges

Lack of necessary outside and inside supervision

Participants believed that challenges caused by lack of proper supervision include the lack of attendance of specialists, erratic work schedules of resident specialists and visiting other patients, and asking for extra payment during resident time despite the fact that the success of this plan is heavily reliant on supervision at hospital level and at university level. In this regard, one of the participants (M6) said: “See, in some hospitals the presence of resident specialist is active and useful and the guidelines are followed exactly but this greatly depends on the director and supervisor of the hospital and their actions specially in evening and night shifts and during holidays there need to be proper supervision on attendance. This is the internal supervision of the hospital. There is also a need for outside supervision which is unfortunately very weak.”

About exploitations and abuse by resident specialist, one of the participants (M5) said: “For example the resident surgeon finishes up in his clinic before coming; he calls and for example, says ‘I’ll be here tonight, but I’m in my clinic, call if you need me’ and only show up at the hospital after they are finished in their clinic.”

Another participant (M12) stated that: “visiting other patients and attending their personal clinics or specialize

clinics is one of the main problems of resident plan because I'm yet to see any supervision or standardized form. We either need to send a specialist who follows the regulations himself or we will need an airtight checklist. This checklist needs to be valid enough that it can be filled by anyone without problems caused by personal opinion."

Lack of obligation for specialists to follow the guidelines

Lack of understanding and supervision leads to lack of obligation by specialists to follow the guidelines. In this regard, one of the participants (M9) said: "For example, even I haven't read these guidelines, when I don't know the guidelines, it is natural that I won't follow some of them." Furthermore, asking for fees during resident hours leads to induced demand. One of the participants (M1) believes: "There seems to be some induced demand. Like suddenly there is an increase in the number of operations. Now, the question is, is this because previously the patients couldn't afford their treatment costs at the hospital and that is why there are so many patients? This is one of the challenges that need to be investigated from inside and outside." Another participant (M3) also confirmed the increased number of operations compared to before the implementation of the guidelines and believed that studies must investigate the relation between this increase and implementation of health transformation plan.

Not following "pay based on performance" rules

Participants believed that lack of performance evaluation (qualitative and quantitative) of resident specialists is one of the problems of this plan, and in most cases, payments are not made based on performance, and most hospitals with low performance have received their payments in full. One of the participants (M8) believes that unfortunately payments are not affected by performance and said: "nowadays, the payment for residence is for presence of the specialist. This means that there needs to be evaluations and the payment need to change based on their results but it's not happening."

Sudden implementation of the program and lack of pilot version

Another challenge is the sudden implementation of the plan. Many participants believed that the plan was implemented in a hurry and without proper infrastructures and that having a pilot version and proper goal-oriented studies before implementation could have been useful in identifying the challenges of resident specialist guidelines and improve the success rate of the implementation. In this regard, one of the participants (M14) believed that sudden implementation of the plan is a waste of resources and said: "This plan should have had a pilot first where the problems would be identified before implementing it at a national scale."

Another participant (M1) said: "It seems that this plan was implemented hastily. They should have used a pilot to determine the strengths and weaknesses before implementing it nationwide."

Challenges related to resources

Lack of stability in financial resources

Lack of the necessary financial resources and infrastructures for this plan and limited resources for development and continuing the plan leading to disorganization in payments in later months compared to the 1st month was mentioned as one of the challenges of this plan. According to the participants, delays in payments after first few months lead to unwillingness of specialists for working as a resident specialist in hospitals instead of working at private or specialized clinics. One of the participants (M7) stated: "unfortunately the payments were organized for the first few months but now that organization is gone. Initially the procedure was that the payment for residency of each month was paid at the start of the next month but now there are delays and the payments are disorganized meaning there is at least 2-3-month delays even when residency payment was supposed to be paid the next month."

Increased workload and lack of necessary care personal specially nursing staff

Implementation of health transform plan and along with it the resident specialist guidelines has increased the workload of staff members during evening and night shifts. One of the participants (M3) in this regard said: "However, given the shortage of staff we have in nursing staff and even administrative staff and because of the increased workload caused by Health Transformation Plan especially now that government hospitals are not allowed to hire new staff because of problem with budget and resources, it is natural for the plan to face some problems."

Wasting resources and lack of necessary knowledge for determining the required resident specialists

In situations when there is a shortage of resources, optimum use of available resources can help plans achieve their intended goal, but wasting of resources and lack of the necessary knowledge for determining the required resident specialists has created new challenges for this plan. At the start of health transformation plan, there were some plans for resident specialists of a certain specialization to attend some hospitals, but later performance evaluations and reports of hospital managers made it clear that these hospitals do not need these types of resident specialists which led to a waste of resources. In this regard, one of the participants (M9) said: "There were some other services such as neurosurgery and orthopedics but they are now discontinued. If we

knew from the start that these areas work fine with on-call specialists without lowering the quality, we could have saved a lot of resources.”

Insurance companies' concerns

In regards to insurance companies, participants believed that lack of cooperation from insurance companies and their concerns about possibility of lack of resources can be one of the reasons behind the challenges in this plan. One of the participants (M11) stated: “Every plan before being implemented needs to have secure financial resources instead of implementing it first and then worry about financial resources. This is what is happening in health transformation plan. This is the reason behind the problem ministry of health has with insurance companies. Insurance companies effectively do not cooperate about costs of the plan and that is why there are delays in payments compared to the start of the plan.”

Opportunities caused by resident specialist plan

Providing care to the patients in a timely manner

One of the most important opportunities created by this plan is providing timely care for patients. One of the participants (M3) said: “The reason behind this plan was very positive and it was all about providing care for the people and timely care for patients that need a specialist to make the final decision instead of relying on education groups.”

Equity in access to health care

One participant believed that resident specialist guidelines create opportunities for equal distribution of patients in hospitals and reducing the workload of central and larger hospitals: “There is a problem in university hospitals that are not educational, after a certain point there is simply not enough specialists and so very often the patient consents and is transferred to educational hospitals but if there is a specialist present during evening or night shifts, they can manage a lot of patients which reduces the workload of educational hospitals. This has several advantages; first, the patients are equally distributed in different hospitals and second is that there will be equity for patients and patients do not have to worry about which hospital to visit and they know all hospitals can take care of them and just go to the nearest hospital. Third one is that then patient comes to the hospital, he is certain that they will take care of him and is not confused.” Another participant (M15) believed that the most important use of the health transformation plan is protecting the patients and feelings of security and stated: “Just the fact that the specialist quickly attends the patient I think is a good thing because it can emotionally support the patient because he quickly sees the specialist and sees that his care is being taken care of.”

Increased patient satisfaction

Providing timely care for the patients during the so-called “golden time” and increased quality of the services can increase patient satisfaction. One of the participants stated: “There is an opportunity for hospital and patient in resident specialists because patients always have access to specialists. Previously, we used on-call specialists and on-call physicians do not reach the patient in a timely manner or just could not get to the hospital which caused dissatisfaction. However, most of these problems were solved with resident specialists. This is a good plan that is really good for the patients and increases their satisfaction.”

Increased quality of services

One of the participants (M1) believed that increased in the quality of services is the result of this plan and stated: “this plan caused an increase in the number of specialists present at hospitals, they now have better commitment to their work and if things go right, patients don't have to stay more than necessary which means that the beds won't be occupied and patients can receive timely care which increases the satisfaction of patients and their families.” In general and based on the findings of this study, it can be said that most participants believed that correct implementation of resident specialist guidelines can improve the quality of care delivered to the patients and improve patient satisfaction.

Discussion

In this study, the main themes extracted based on experiences of participants about challenges and opportunities caused by resident specialist attendance guidelines included structural, management, and resource challenges and improved service quality.

Structural or contextual challenges were recognized as the most important challenges in resident specialist attendance guidelines due to different situations in normal and educational hospitals. The attendance guideline explicitly states that hospitals are forbidden to have on-call specialists in areas where there is a resident specialist present^[6] while this has not been observed in educational hospitals and occurred the conflict due to not taking the hospitals' situation into consideration. McGarry *et al.* in their study titled “Impact of resident physicians on emergency department throughput” reported no meaningful difference in criteria of number of attended patients, average length of stay in the hospital, and the percentage of patients that leave the emergency ward without being treated.^[14]

One of the main challenges mentioned by the majority of the participants is the lack of sufficient internal and external supervision. The absence of adequate

supervision obstructs the plan from achieving the desired results. Therefore, it seems that there is a need for appropriate supervision in health transformation plan because lack of proper supervision leads misusing of the plan and not observing the attendance guidelines by the specialists. Jafari *et al.* in their study reported the attendance of resident specialists in three hospitals to be 53.32%, 30.12%, and 35.37%.^[15] In another study, Gharibi *et al.* investigated different dimensions of health transformation plan and reported that this plan had not managed to yield suitable results in the dimension of resident specialists. Their study considered the resident specialist attendance guidelines to be one of the strengths of the health transformation plan, but they stated that inadequate or lack of participant of physicians in hospitals and wards is among the challenges of these plans and suggested better government supervision for this plan, especially on resident specialist attendance.^[8] A systematic review by Gajic and Afessa showed that although various studies show the positive effects of resident specialists on patient care, this improvement can only happen in an ideal and evidence-based organizational environment.^[16] Ghanbari *et al.* in their study reported lack of supervision, monitoring, and lack of financial resources as the main challenges of health transformation plan^[17] which is similar to the results of this study.

Instability of financial resources and delays in payments to physicians was another one of the challenges in this plan. The success of any plan is based on its acceptance by its enforcers, allocation of the proper resources, and proper use of the available resources. Behzadi *et al.* in their qualitative study in 2014 reported the main challenges of health transformation plan to be delays in payments, lack of proper supervision, and increased workload for the staff^[18] which is similar to the results of this study. Although it should be noted that the first steps in any reform plan in the health-care sector often lead to unpredictable challenges and one can expect more positive results after the initial phase of the plan. As a result, implementing a smaller, pilot version of the health transformation plan before its full implementation could have predicted and prevented a lot of its current challenges. On the other hand, Ferdowsi *et al.* in their study reported that despite being costly, health transformation plan is related to public satisfaction and its hasty implementation can be explained based on circumstances of the society.^[19]

Along with the challenges of the health transformation plan, this study showed that this plan created opportunities in improved service quality and patient satisfaction. Other studies about resident specialist also confirm these results. A study by Mahuri *et al.* in 2004 investigated the patient files of Intensive Care Unit in 2

consecutive years one without resident anesthesiologist and one with resident anesthesiologist and showed that although there was no meaningful difference between the causes of admittance and gender of the patients in these 2 years, the death rate of corresponding months reduced from 38.8% in the 1st year to 69.9% in the 2nd year which shows a statistically significant decrease. Furthermore, although the number of patients was larger in the 2nd year, average stay of the patients decreased from 3 to 2.5 days.^[20] In a similar study by Kabirzadeh *et al.* called "Effect of anesthesiologist stay on the intensive care unit of a hospital mortality of Imam Khomeini (RA) in Sarrey," similar results were reported and average patient stay was reduced from 14 to 11 days and death rate from 24% to 14%.^[21] A systematic review by Levy *et al.* in 2007 showed that having resident specialists with various specializations can help improve various criteria. These improvements include lower patient stay, more effective medical staff (or lower amount of unnecessary prescriptions and more timely diagnosis), better communication between medical staff, and finally higher patient satisfaction.^[22] However, a clinical controlled study by Kerlin *et al.* in 2013 showed no significant difference between the length of stay and death rate of patients in hospitals with and without resident specialists.^[23]

Conclusion

Although this study only investigated one dimension of health transformation plan and its effects on public healthcare, the effect of this plan on improved access and quality of health care is evident. Therefore, it is better to consider this plan as a step forward and help the managers and policymakers in achieving the desired results with the help of goal-oriented studies and applicable suggestions. Without a doubt, achieving a perfect and suitable situation for resident specialists that can take full advantage of their abilities to improve quality of health care requires time and many other steps. Some of the suggested steps for improving the results of this plan include continuous and regular monitoring and supervision of the guidelines and physicians to assure the quality of services, clear determination of job descriptions, evaluation of patient satisfaction, allocation of the necessary financial resources, payment based on performance and not mere attendance, payment based on quality and quantity, improved physical facilities for resident specialists in medical centers, especially emergency wards, creating enough educational and therapeutic spaces, determining the cost of the effective implementation of the plan, and use of responsible and committed specialists in this plan. One of the limitations of the study was the small number of the hospitals which were only the selected hospitals of Isfahan city; the similar surveys are required to investigate opportunities

and challenges of resident specialist attendance plan guidelines in other cities as well as university hospitals.

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Conflicts of interest

There are no conflicts of interest.

References

1. Mastaneh Z, Mouseli L. Health information position in new reform of American health care system. *Health Inf Manag* 2011;8:101.
2. Saltman RB, Figures J. European health care reform: Analysis of current strategies. *Br Med J* 1998;316 (7142):1468.
3. Gibbons DW, Gardner TJ, Goldstein LB, Moller JH, Yankee CW. The American Heart Association's 2008 statement of principles for healthcare reform. *Am Heart Assoc* 2008;118:2209-18.
4. Iranian Ministry of Health and Medical Education. Collection Guidelines for Health System Reform Plan. Health Deputy; 2014. Available from: <http://www.darman.umsha.ac.ir/uploads.> [Last accessed on 2015 Jul 20].
5. Iranian Ministry of Health and Medical Education Evaluation of Health System Development Plan in the Area of Treatment; 2015 Available from: <http://www.alef.ir/vdcdnf0xfty0596.2a2y.html?271691>. [Last accessed on 2015 Aug 21]
6. Guidelines for Health System Reform Plan. Ministry of Health and Medical Education; 2014. p. 26.
7. Cass HD, Smith I, Unthank C, Starling C, Collins JE. Improving compliance with requirements on junior doctors' hours. *Br Med J* 2003;327:270-3.
8. Gharibi F, Janati A, Farajollah Beiknoori M, Amini Daghalian B. Managers and nurses' experiences of healthcare reform in Tabriz Taleghani hospital. *Depiction Health* 2015;6:1-10.
9. Gajic O, Afessa B, Hanson AC, Krpata T, Yilmaz M, Mohamed SF, *et al.* Effect of 24-hour mandatory versus on-demand critical care specialist presence on quality of care and family and provider satisfaction in the intensive care unit of a teaching hospital. *Crit Care Med* 2008;36:36-44.
10. Branney SW, Pons PT, Markovchick VJ, Thomasson GO. Malpractice occurrence in emergency medicine: Does residency training make a difference? *J Emerg Med* 2000;19:99-105.
11. The IOM medical errors report: 5 years later, the journey continues. *Qual Lett Healthc Lead* 2005;17:2-10.
12. O'Malley AS, Draper DA, Felland LE. Hospital emergency on-call coverage: Is there a doctor in the house? *Issue Brief Cent Stud Health Syst Change* 2007;115:1-4.
13. Polit DF, Beck CT. *Nursing Research: Principles and Methods*. Philadelphia: Lippincott Williams & Wilkins; 2004.
14. McGarry J, Krall SP, McLaughlin T. Impact of resident physicians on emergency department throughput. *West J Emerg Med* 2010;11:333-5.
15. Jafari M, Soltani F, Fathian N. A Comparative Assessment of the implementation of Healthcare Reform topics of Program. *Isfahan International Conference on Sustainable Development in the Health System*; 2015. p. 108.
16. Gajic O, Afessa B. Physician staffing models and patient safety in the ICU. *Chest* 2009;135:1038-44.
17. Ghanbari F, Heidarzadeh A, Jafaraqayy F, Barari F. Challenges Facing the Healthcare Reform Plan: Inequality in Health Care Delivery. *Isfahan International Conference on Sustainable Development in the Health System*; 2015. p. 68.
18. Behzadifar M, Behzadifar M, Saki K, Keshavarzi A. Senior Health Administrators and Experts About the Challenges of Health Reform Plan: A Qualitative Study. *Isfahan International Conference on Sustainable Development in the Health System*; 2015. p. 9.
19. Ferdowsi M, Kabiri SH, Shojaei B. Cash on Healthcare Reform Plan Based on Policy Analysis Triangle. *Isfahan International Conference on Sustainable Development in the Health System*; 2015. p. 49.
20. Mahuri A, Heshmati F, Noruzinia H, Abbasivash R, Noruzinia SH, Salmani M. The role of the anesthesiologist resident at reducing deaths Intensive Care Unit. *J Iran Soc Anaesthesiol Intensive Care* 2003;21:17-22.
21. Kabirzadeh A, Zamani Kiasari A, Bagherian Farahabadi A, Saravi M, Hassanzadeh F. Effect anesthesiologist stay on the intensive care unit of a hospital mortality of Imam Khomeini (RA) in Sarrey. *J Mazandaran* 2006;16:138.
22. Levy C, Palat SI, Kramer AM. Physician practice patterns in nursing homes. *J Am Med Dir Assoc* 2007;8:558-67.
23. Kerlin MP, Small DS, Cooney E, Fuchs BD, Bellini LM, Mikkelsen ME, *et al.* A randomized trial of nighttime physician staffing in an intensive care unit. *N Engl J Med* 2013;368:2201-9.