

Evaluation of inter-hospital transfers before and after health reform plan in Iran

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ABSTRACT

Health system reform and improving the quality of health care as one of its important results has always been important. Health reform plan is considered as one of the fundamental changes in the health system of the Islamic Republic of Iran and therefore requires the effective measures to enhance the status and improve the performance. This study aimed to investigate the inter hospital transfers before and after health reform plan in Iran in 2013-2014. This descriptive - analytic study was conducted in the second 6-month period of 2013 and 2014. The study population consisted of all transfers from the hospitals in the city of Shiraz in Fars Province to the hospitals located in Shiraz. The sample was based on the study population. Research Information were received from health care monitoring center in Shiraz University of Medical Sciences. The statistical analysis was performed using the descriptive statistics and chi-square and Wilcoxon tests and at a significance level $p < 0/05$ and by software SPSS (22). The results showed that the transfer cases in the second 6 months of 2013 (before transformation plan) were 427 and in the second 6 months of 2014 (after transformation plan) was 544. The results of this analysis showed that there is not a significant difference in the rate of transfers before and after health reform plan ($P > / 05$). The statistical analysis also showed that there's a significant difference between before and after health reform plan in relation to the causes of sending patients, in terms of the absence and lack of specialist, need for operating room, willingness to private hospitals and not discharging and not sending the patient with personal satisfaction by the hospital ($p < / 05$). However, there was a significant relationship between before and after health reform plan in terms of the lack of relevant department or

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service and empty bed in the origin hospital and patients' financial distress ($p > / 05$). According to the study results, the number of transfers was not significantly different before and after health reform plan and the transfers rate did not diminish. With implementation of the health reform plan, it was expected that the transfers would decrease. But, as the results showed the number of transfers had increased. In general, it should be noted that other variables that were not examined in this study should not be considered off and their possible impact on increasing the inter-hospital transfer can be considered. In any case, every fledgling national plan, especially in its first steps would require the regular revisions and reforms.

KEY WORDS: HEALTH REFORM PLAN, TRANSFER, HOSPITAL

INTRODUCTION

The main mission of the health system is the promotion of health and meeting the needs of people and society. These needs influenced by the economic, social, political and environmental conditions are constantly changing. On the other hand, the disease patterns and risky factors are constantly changing. Especially in the current era that the changes occur very fast in this sector. Responding to these changes is the most important argument that based on it, the health system must be transformed and upgraded (Health, 2011). Due to the constant changes in the health system and pressure that is applied to the personnel of health staff in the health system which leads to burnout and intention to leave, the health system reform will be definitely useful and effective for both the patients and medical personnel, (NIKBAKHT, Salari, Hosseinpour, & Yekaninejad, 2014). During the last health reforms taking place in the country to implement the comprehensive health plan, the healthcare reform program has been implemented in the country since mid-May 2014 (Health, 2014). In fact, the goal of health system reform is the promotion of health, reduction of payment from public funds, development and promotion of community health indicators (Khodadadi, Vafaie, Aahmadi, & Raza-vian, 2015). Studies show the gap between the objectives and ideals of the health reform plan, (Zarezadeh, 2015).

The inter-hospital transfer in the referral system is one of the most important components of a country's emergency service system, so that in most developed countries, a scientific protocol has been defined for it (Ebadifarde Azar, 2002), ("Evaluate the performance of the referral system in patients referred," 2013), (system, 2002). Transferring patients from one medical facility to another medical facility such as counseling, admission, Parr clinic services or special services that require the certain conditions including the patient preference, lack of diagnostic and therapeutic facilities, or need for medical treatment facilities in the specific cases is called the inter-hospital transfer (Bagust, Place, & Posnett, 1999).

The inter-hospital transfer is considered as part of the patient's treatment. The special laboratory tests, specialty or subspecialty care, lack of skilled manpower, lack of diagnostic and therapeutic facilities, especially

the limitation of intensive care beds in distant centers can be raised as reasons for sending patients (Armagan, Al, Engindeniz, & Tokyay, 2004). One of the major challenges that have created many problems for the health system during recent decades in Iran and shows the need for further studies during the implementation of plan is the inter-hospital transfers from small towns to larger cities, (Bagheri Lankarani, 2015). Many patients in deprived areas die or suffer the irreversible lesions due to the lack of medical facilities in public hospitals or lack of timely and adequate provision of services and lack of specialists (Alidadi, Zaboli, & Sepandi, 2016).

But what is certain is that the inter-hospital transfers that occur due to the absence of specialists and other relevant factors will impose the additional costs to the health system and patients. Therefore, by doing the targeted researches in this field, the efficiency and effectiveness of the health system should be improved by providing the scientific solutions, and the efforts must be made so that people have access to health services, (Jabbari 2015).

Health reform plan aimed at improving the quality of medical and health services follows the infrastructure reforms. This plan has been operating for several years and frequent and continuous assessments can be effective in identifying the weaknesses and improving the performance. Therefore, this study was aimed to investigate the rate of inter-hospital transfers before and after health reform plan in the hospitals of Shiraz University of Medical Sciences in the second half of 2013 and 2014.

MATERIAL AND METHODS

This study is applied and was conducted in descriptive - analytic method at a point in time, between the second half of 2013 and 2014. It is worth noting that the health reform plan has been implemented since the second half of 2014 and the collected data related to the inter-hospital transfers in the first period of implementation of the transformation plan, the second 6 months of 2014 (after health reform plan) were compared with the previous corresponding period, the second 6 months of 2013 (before health reform plan) in this study.

The study population consisted of all deployments made in all health services including surgery, obstetrics and gynecology, pediatrics, neurology, neurosurgery, orthopedics, cardiology, internal medicine, ear, nose and throat or ENT, burn and ophthalmology in the hospitals of Shiraz University of Medical Sciences. The hospitals sending patients included all hospitals located in the cities of Fars province and the hospitals receiving patients were the hospitals located in the city of Shiraz. In this study, according to the importance of sending the patients, all of the study population was studied and sampling was not performed. As a result, the sample is identical with the study population.

The scope of the study includes the hospitals of Medical Sciences and Health Services, located in the city of Shiraz in Fars province which did the inter-hospital transfers in 2013 and 2014 that among them, it can be named Ali Asghar Hospital in Bayram, Imam Khomeini in Estahban, Imam Hassan in Darab, Vali Asr in Eghlid, Imam Hussein in Sepidan, Imam Khomeini in Abade, Imam Sadeq in Saadat Shahr, Vali Asr in Boanat, and so on. The hospitals of Medical Sciences and Health Services, located in Shiraz also admitted the patients in 2013 and 2014. These hospitals included Shahid Chamran, Namazi, Ordibehesht (May), Shahid Rajai and Central Hospitals. The basic information of this study was obtained from the health care monitoring system of Shiraz University of Medical Sciences and in coordination with deputy of treatment.

RESULTS

The results showed that the transfer cases were 427 in the second 6 months of 2013 (before transformation plan) and was 544 in the second 6 months of 2014 (after transformation plan). Moreover, 40 percent of inter-hospital transfers were female and 60 percent were male in 2013 (before transformation plan) and 43 percent of inter-hospital transfers were female and 57 percent were male in 2014 (after transformation plan). 263 cases of transfers (62%) were occurred due to the lack of a doctor in 2013 (before transformation plan). Also, 209 cases (38%) were occurred due to the lack of a doctor in 2014 (after transformation plan). 184 cases of transfers (43%) were due to the lack of specialist in 2013 (before transformation plan). The number of transfers occurred due to the absence of specialist was 267 cases (49%) in 2014 (after transformation plan). The number of transfers occurred due to the lack of related service or department was 208 case (49%) in 2013 and 273 cases (50%) in 2014. The number of transfers occurred due to the lack of available bed was 13 case (3%) in 2013 and 24 cases (13%) in 2014.

The number of transfers occurred due to the need for operating room was 66 case (15%) in 2013 and 46 cases (8%) in 2014. The number of transfers occurred due to willingness to private hospitals was 41 case (10%) in 2013 and 79 cases (14%) in 2014. The number of transfers occurred because of the private patients' financial distress was 16 case (4%) in 2013 and 11 cases (2%) in 2014. The number of transfers occurred due to the lack of patient's withdrawal from the transfer was 10 case (2%) in 2013 and 17 cases (3%) in 2014. The number of transfers occurred due to the cancellation of origin hospital was 14 case (3%) in 2013 and 6 cases (1%) in 2014. The number of transfers occurred because of DAMA (discharge against medical advice) was 34 case (8%) in 2013 and 20 cases (3%) in 2014.

For inferential analysis of the data, it is used Chi-square and Wilcoxon tests at a significance level of $P < / 05$. The results of this analysis showed that there is not a significant difference in the rate of transfers before and after health reform plan ($P > / 05$).

The statistical analysis also showed that there's a significant difference between before and after health

Table 1. Summary of descriptive data

		Frequency	Percent	
The number of transfers (dispatches)	2013	427	-	
	2014	544	-	
Transfer patients' gender (Gender of patients sent)	2013	Male	258	40
			169	60
	2014	Female	311	43
			233	57
Withdrawal of origin Hospital	2013	14	3	
	2014	6	1	
DAMA	2013	34	8	
	2014	20	3	
Lack of specialist	2013	263	62	
	2014	209	38	
Absence of specialist	2013	184	42	
	2014	267	48	
Lack of ward	2013	208	49	
	2014	273	51	
Lack of empty bed	2013	13	3	
	2014	24	24	
The need for operating room	2013	66	15	
	2014	46	8	
Willingness to private hospital	2013	41	10	
	2014	79	14	
Patients' financial problems	2013	16	4	
	2014	11	2	

reform plan in relation to the causes of sending patients, in terms of the absence and lack of specialist, need for operating room, willingness to private hospital and not discharging and not sending the patient with personal satisfaction by the hospital ($p < / 05$). However, there was a significant relationship between before and after health reform plan in terms of the lack of relevant department or service and empty bed in the origin hospital and also patients' financial problems ($p > / 05$).

DISCUSSION

As the results showed there is not a significant difference in the rate of transfers before and after health reform plan. It seems that the health reform plan could not change the rate of transfers with its eight-fold packages and this is while the rate of transfers had been significantly reduced due to the lack of specialists before and after health reform plan which indicates that the reform plan has been partly successful in its resident and retention package and this is while the absence of a specialist after health reform plan has been higher than before, which indicates that despite the existence of various specialists in the cities, their physical presence has been reduced in the city for various reasons that requires more monitoring units surveillance to assess the presence of specialists. The lack of specialists in the hospitals located in cities of Fars province was one of the concerns that was evaluated in this study after health reform plan. The researches that had been discussed the absence of specialist in the hospitals before the health reform plan reported a great dissatisfaction, (Moradi 2014 and Mahdavi 2014).

In the previous researches, it was reported the reluctance and lack of motivation to attend specialist in the cities, especially the more deprived areas (Armagan *et al.*, 2004). The studies have shown that increasing the use of skilled manpower cannot only be effective in reducing transfer but also the proper planning to provide the needed experts, fitting the number of doctors, hospital equipment and other specialized facilities with the needs of a region, making culture of changing patient attitudes, increasing the physical space and improving the environment of health centers can affect the patient's morale and reduce the patients' negative opinions about the inability of medical centers in providing the quality services and also prevent the waste of organizations' human-economic resources, imposing the heavy costs and the problems caused by the patient transfer (Alidadi *et al.*, 2016).

Comparing the hospitals in the cities in terms of the inter-hospital transfer due to the lack of related service or department was another variable examined. The number of transfers occurred due to the lack of related service or department has increased after transformation

plan. However, the transfer percent has not decreased compared with before the transformation plan due to an increase in the number of transfers. But it was expected that the transfer of patients reduced due to the lack of related service or department after transformation plan and that no significant difference was found in the transfer of patients before and after transformation plan. In other words, the reform plan has not been effective on the inter-hospital transfer due to the lack of relevant department or service.

Accordingly, it can be examined the relationship between "the presence of specialist and lack of related service or department despite decreasing the lack of specialist" in future researches and based on these results, the practical strategies are offered more decisively in this regard. In addition, as a possibility, a lack of related service or department can be one of the reasons for the absence of specialist in the hospital. As a result, a comparative study can be used to examine the relationship between these two factors. Several studies show that the main reason for the transfers is the shortage of specialists and super-specialists, diagnostic services and lack of clinical departments (Watts, Fountain, Reith, & Schep, 2004).

Another variable examined was the transfer due to the lack of available bed that had not a significant difference before and after health reform plan. In Hashemian and Moeini Pour's study, it was found that enhancing the operation of public hospital beds in deprived areas was not considerable. Instead, the public hospitals in the provincial capital has seen a significant increase in bed performance index (Hashemian M, 2014). Since this study was done in the early months of health development plan and the creation of hospital beds is time-consuming, judging the impact of the health reform plan on increasing the hospital beds seems a bit hasty.

Another reason for sending the patients was a need for operating room that there was a significant difference between before and after the health reform plan. The 15% of transfers were occurred because of the need for operating room before health reform plan. This rate has significantly decreased after the health reform plan since the rate has increased to 8 percent after the health reform plan. Of course, this depends on the existence of operating room or presence of the equipment in it and also the presence of relevant specialists.

In assessing the health reform plan, one of the things that can determine the desirability of improving the indicators is the patients' financial problems. A significant difference was seen in the transfers due to the patients' financial problems before and after health reform plan. This can be considered by the relevant authorities. In this study, the patient's withdrawal from the transfer was compared between before and after the transformation plan. It is necessary to mention that this case may

be occurred for reasons such as not being able to attend the patient's family in the provincial capital or the reasons such as these. In these circumstances, if the necessity of sending patient is confirmed by the medical staff, he will stay away from treatment.

In this study, there was not a significant difference between before and after transformation plan based on the patient's withdrawal from the transfer. In other words, the transformation plan has not decreased the patients' withdrawal from the transfer. Hospital cancellation of sending the patient was one of the factors that led to cancel the process of sending patients. When a hospital gets the admission in one of the hospitals in the provincial capital for reasons including the lack of available bed and so on and then does not send the patient, it seems that the problem (for example, the empty bed) is solved.

The willingness of patients to private hospitals has increased after the health reform plan. In other words, the number and percentage dispatched to a private hospital after the health reform plan has increased. There are significant differences in the rate of transfer based on the desire to a private hospital before and after the health reform plan in this study. Sending patients to the private hospitals can reduce the proliferation of patients in the hospitals, particularly teaching. On the other hand, the patients will incur heavier expenses. Designing the programs can be considered to improve or enhance the hospital environment and necessary resource for medical team in teaching and non-private hospitals and also to balance the costs in the private hospitals.

This issue is interesting from another perspective. If the private hospitals place less financial burden on the patient and the measures are taken by the relevant organizations in this regard, the volume of patients admitted to the hospitals so-called state will be reduced and the quality of services provided in these hospitals also will be more effective.

In this study, two steps before and after transformation plan were compared based on the DAMA or discharging the patients with personal satisfaction that had a significant difference and rose slightly. In other words, the transformation plan has failed to reduce the rate of DAMA. The patients who were not transferred due to DAMA were among those whose transfer necessity had been identified, but the patients or their families refused further treatment with personal satisfaction before being admitted to hospital in Shiraz. The patient whose transfer necessity has been identified more likely has not a stable and non-traumatic situation however refuses further treatment and such cases can be followed by the officials since some of these DAMA may be occurred because of the marginal problems arisen in the origin hospital.

In the study of Razavian *et al.*, entitled "Comparing the rate and reasons for discharge with personal preferences before and after health reform plan", it was found that the DAMA after health reform plan has decreased. These results are inconsistent with the results of our study (Rezvanian 2015). DAMA may occur in some patients whose families feel that their patients can be discharged, but the medical teams are looking for more stable condition or more evaluation of patient to prepare him for discharge. In such cases, the patient discharge may cause risks for him. However, the hospital will not be responsible for possible problems, but in some cases, the clinical supervisor can give instructions to the patient's family and prevent the DAMA and potential problems somewhat.

CONCLUSION

The results showed that the number of transfers are not significantly different before and after health reform plan and the rate of transfers has not diminished. With regard to the implementation of the health reform plan, it is expected that the transfers would decrease. But as the results showed the number of transfers has increased. In general, it should be noted that other variables that were not examined in this study should not be considered off and their possible impact on increasing the transfer of the hospital can also be considered. In any case, all fledgling national plans, especially in its first steps require the regular revisions and reforms. This is well reflected in this study.

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