



## The effect of healthcare reform plan on costs paid by patients hospitalized in para-clinical services in Shiraz

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Received: 02-02-2017 / Revised Accepted: 29-03-2017 / Published: 26-04-2017

### ABSTRACT

**Introduction:** out of pocket expense is considered as one of financial sources in healthcare system. In present study, effect of healthcare reform plan on out of pocket expense and contribution of insurance organization was addressed in therapeutic-educational hospitals in Shiraz.

**Method:** this is descriptive, causal and comparative study and it was conducted after implementation of healthcare reform plan as an intervention. A before and after study was conducted using information of 8 governmental hospitals affiliated to medical science university of Shiraz. The sample size was determined by Krejcie and Morgan table including 800 financial bills of patients, 400 financial bills related to patients' records in 2013 and 400 financial bills related to patients' records in 2015. They were selected among financial bills of patients' records by random multi-stage sampling. Data were analyzed using EXCEL and SPSS23.

**Results:** the study indicated that out of pocket expenses of services in paraclinical services have reduced from 28 to 7% after healthcare reform plan and contribution of insurance organizations increased from 77.5 to 89.5%.

**Conclusion:** results indicate that healthcare reform plan is able to protect financially patients in paraclinical services and contribution of insurer organizations has increased compared to before reform plan and such plan has been effective on number of laboratory services.

**Keywords:** out-of-pocket expenses, healthcare reform plan, contribution of insurer, governmental hospitals

### INTRODUCTION

Health has been known as one of the main pre-requisites of social welfare system. In addition to healthy life style, people have to use health services to promote their health. In other words, the service is bought. Some of household income is spent on health costs in communities throughout the world. The amount of this contribution shows that financial health burden is incurred on communities (Murray 2003).

Out of pocket expenses are costs that are paid directly from pocket of people when receiving health products and services (Maher, 2008). Out of pocket is the simplest and the most effective method for payment. In this method, individual will pay directly the money to service provider. Since this method faces many problems, most costs are paid by such method (Asefzadeh et al, 2014). High

out of pocket expenses can prevent essential purchases of household such as foods and clothes. About 44 million households and more than 150 million people encounter annually with catastrophic expenditures. Approximately, 25 million households and more than 100 million people have undergone poverty. Also, high number of people may decide not to use medically simple services due to financial problems or they do not use such services due to indirect costs such as transportation and food (Carrin & Evans, 2005).

In direction of supplying financial sources of health, some part of insured treatment costs (that are paid by insurer to service provider according to public insurance act and approved tariff) is called organizational contribution and the part of treatment cost that should be paid by the insured when receiving services based on approved tariff is called patient's contribution (franchise).

Nowadays, lack of financial protection in health has been recognized as illness of health systems. The clearest sign is that households suffer from illness burden and economical poverty. In other words, they encounter catastrophic expenditures in health system (Arreola & Knaul, 2006). Measuring financial support is determined by out of pocket expenses for receiving health services. Two approaches are analyzed and they are determined by threshold limit: 1- catastrophic expenditures that refer to health expenditures beyond household income 2- costs that lead to impoverishing. As a result, households above poverty line descend below poverty line. In other words, they experience the poverty resulted from treatment (Ebadifar and Rezapour, 2012).

Statistics indicate that the contribution of out of pocket expenses in Iranian households from total health increased from 53 to 59% from 2001 to 2011. The highest amount has been seen in 2009 (59%) (Abolhallaj and Hasani) and (Anbari and Mohammad Beigi, 2015).

In recent years, health system of the country has faced different problems that cause dissatisfaction of public and different parts of health system. After the 11<sup>th</sup> government, ministry of health, treatment and medical education formulated healthcare reform plan. The plan aims to protect public financially against health costs, to promote quality and increasing access to treatment services and it was implemented in governmental hospitals throughout the country in 5 May 2014. Although such plan increased satisfaction of public and a group of actors in health area, such plan has faced severe challenges (Forghani, 2015).

To settle such challenges in health area and tariffs of medical services in recent years, health reform plan was formulated and implemented in 5. May.2014 to forward health goals of Islamic republic of Iran in the fifth development program in health service packages. In this direction, the book "relatively new value of medical services" was announced and published in 22. Oct.2014. Then, tariffs of paraclinical services were changed and the costs paid by the insured and insurer were changed as well.

The present study aims to compare contribution of patients and insurers in costs of paraclinical services in educational hospitals affiliated to Shiraz medical science university in years 2013 and 2015. Therefore, out of pocket expenses of patients can be determined for costs of medical radiation and laboratory services before and after implementation of new tariffs of the book "relatively new value of treatment services" and simultaneous

implementation of new tariffs with the fifth development program can be specified for reduction of out of pocket expenses.

## METHOD

This is a descriptive, causal-comparative study and it was conducted after implementation of health reform plan as an intervention. Statistical population is all financial bills of patients from 2013 to 2015 in educational hospitals supervised by Shiraz medical science university and they were equipped with HIS system in 2013 and 2015. The sample size was obtained by Krejcie and Morgan table including 800 financial bills of patients (400 financial bills related to patients' records in 2013 and 400 financial bills of patients' records in 2015) and they were selected by random multi-stage sampling. Data were analyzed using EXCEL and SPSS23, t statistical test and X2. Significance level has been considered as 5%.

## RESULTS

In present study, 400 individuals were investigated before and after health reform plan. Most individuals under study were 50 years old and majority of them were female (table 1). Before implementation of the health reform plan, mean out of pocket expenses were 256286 tomans and mean out of pocket expenses were 153037 tomans after implementation of health reform plan (table 2).

Results indicate that mean number of services, mean total cost of services, mean contribution of insurer and franchise deductible in general and medical radiation and laboratory services have increased after implementation of health reform plan but mean out of pocket expenses of patients have reduced after health reform plan.

Before implementation of health reform plan, out of pocket expenses were 28% which was reduced by 7% after implementation of health reform plan. Results showed that mean contribution percent of insurer and franchise deductible in general and medical radiation and laboratory services has increased after implementation of health reform plan but mean out of pocket expenses of patient have reduced after implementation of health reform plan (table 3).

## DISCUSSION AND CONCLUSION

Based on results, out of pocket expenses of patients reduced from 28% in 2013 to 7% in 2015. In addition, contribution of insurer increased from 77.5 in 2013 to 89.5% in 2015. Nahid Heydarian et al studied effect of implementation of health reform

plan on out of pocket expenses of patients in governmental hospitals of Isfahan in 2014. they concluded that regarding inflation rate, out of pocket expenses of patients have reduced by 17.43%. The reason may be health subsidy paid by government. Result analysis shows that the government could reduce significantly out of pocket expenses of patients and take an effective step in direction of its goals. In the study conducted by Samira Mirzaei in 2015, they estimated out of pocket expenses of patients before and after implementation of health reform plan. The costs of hospitalized patients in treatment wards and operation room was reduced and contribution of insurances was increased after implementation of health reform plan but costs of patients in paraclinical services were increased significantly and contribution of insurances was decreased after implementation of health reform plan.

Farzad Soleimani et al showed in their study that out of pocket expenses of patients were reduced by 6.37% and allocation of health subsidy to hospitals has been effective and the results are consistent with current results (Heidarian et al, 2015).

In another research conducted by Bagheri Lankerani et al in 2015, out of pocket expenses were addressed after implementation of health

reform plan in Shiraz. Mean percent of costs paid via insured patients for health services was 15% after implementation of health reform plan and it was 25% before implementation of health reform plan. Results show that out of pocket expenses were reduced significantly in hospitalized patients for medical services outside hospital but they are not settled completely. The results are consistent with results of present research. Before implementation of health reform plan, the ratio of money paid by insurer to money paid by patient was 90:10. Results show that money paid by patient was decreased and the money paid by insurer was increased. This can be an effective step in direction of goals of implementation of health reform plan but the main challenge of health promotion is to supply financial sources which are supplied in our country by integration of premium, annual budgets and out of pocket expenses. The budget contribution of ministry of health, treatment and medical education has been small but after implementation of health reform plan, costs paid by government have been improved by allocation of some of revenues resulted from subsidies and one percent of value added tax. In recent years, revenues resulted from purposeful subsidies were not stable. This issue is the main concern of experts for continuing implementation of health reform plan.

**Table 1: demographic features (age and gender) of sample under study before and after implementation of health reform plan**

Variable		Before implementation of health reform plan		After implementation of health reform plan	
		Number	Percent	Number	Percent
Age	Younger than 10	96	24	90	22/5
	11-20 years	32	8	36	9
	21-30 years	40	10	44	11
	31-40 years	64	16	66	16/5
	41-50 years	68	17	52	13
	Over 50 years	100	25	108	27
Gender	Male	167	41/75	143	36/75
	Female	233	58/25	257	64/25

**Table 2: mean payments of paraclinical services before and after implementation of health reform plan**

	Mean number of services	Mean total cost	Mean out of pocket expenses of patients	Mean costs paid by insurer	Mean costs paid by franchise deductible
laboratory	46	750934	101891	542424	9794
	47	2133233	118623	1838035	12543
Radiology	4	741897	108791	627797	5055
	5	2180386	68829	2001098	20821
Total	25	7464115/5	256286/5	58510/5	12321/5
	26	3223426	153037/5	2898584	16682

**Table 3: mean costs of paraclinical services before and after implementation of health reform plan**

	Out of pocket expenses of patient	Mean costs paid by insurer	Mean costs paid by franchise deductible
<b>laboratory</b>	<b>39</b>	<b>73</b>	<b>1</b>
	<b>9</b>	<b>90</b>	<b>1</b>
<b>Radiology</b>	<b>17</b>	<b>82</b>	<b>1</b>
	<b>5</b>	<b>89</b>	<b>1</b>
<b>Total</b>	<b>28</b>	<b>77/5</b>	<b>1</b>
	<b>7</b>	<b>89/5</b>	<b>1</b>

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