

Performing Relative Values Book of Health Services and Its Effects on Deductions of Health Insurance in Bills of Non-Educational Hospitals of University of Medical Sciences of Hormozgan Province in 2014

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Abstract

Introduction: One of reforms performed in health evolution plan was to amend tariff of medical services in the form of presentation of relative values services book. In this study, we discuss effect of the amendments on one of the most important problems of financial structure of health system that is insurance deductions.

Methodology: in analytic-descriptive study which has been performed as occasional, 83413 files sent to Iran's health insurance from non-educational hospitals (12 hospitals) of Hormozgan medical sciences university have been discussed and 628 files having deductions have been studied. The data has extracted by using checklist which compiled for deductions of outpatient and hospitalization services and then analysed by SPSS software version 22 and square t test.

Results: the results of present study showed that Minab city has high deductions compared other provinces ($4/6062 \times 10^8$), also, the results showed that drug deductions, anesthesia and surgery and outpatient services had not significant difference before and after change of tariff. But additional services ($p < 0/05, t=2/511$), diagnostic services ($p < 0/05, t=2/406$), doctors and expert's services ($p < 0/05, t=2/402$) and hospitalization services ($p > 0/05, t=1/695$) had significant difference before and after change of tariff.

Concluding: total results showed that presentation of relative values book of services had not significant effect on deductions by increment tariff and change of obligations of insurances but in some cases, it increase deductions which shall perform necessary preparation in order to remove this strategy.

Keywords: Insurance Deductions, Relative values book of services, Health Evolution Plan, Hospital

Introduction

One of the problems considered in some of developed countries is resources of health and treatment sections which allocate part of government costs (1). Suitable use of facilities and maximal exploitation from them is necessary as one of the inseparable principle of management of health system and treatment (2). From significant subjects in economic governing of hospitals which allocate attention, accuracy and effort of the managers of hospitals is control financial situation of hospitals (3) because of lacking accurate elements which are accepted by insured organizations, the insurances act deductions in repaying cost of hospitals statement that dissatisfy hospitals (4,5). The different studies showed that in health system of Iran, volume and rate of

deductions has high level in hospitals which contracted by different insurances like social security (4,6), treatment services (5,7,8) and also, the studies showed that volume and rate of deductions is different between specialities and hospitals (4,5,9). In majority of studies, role of presenter services like hospitals has so vital in forming deductions than insurance organizations and process for investigation to outpatient and hospitalization files (4, 6, 8).

Generally, insurance deductions are formed by different factors which the most important deductions of hospitalizations are: false coding of surgery, not observance public tariff regulations, mistake in calculation, imperfect of document and extra cost (5)

Deductions are derived from rial difference which shall be received against services (in terms of approved tariff) and what is received practically. Based on existing laws, base of tariff is California book (the last version) and informed tariff of board of ministries. Thus, one of the most important effective factors on scale of deduction is determined tariff (10)

The first version of California book was published at 1984 with cooperation companies of studies of relative value of services and the same book was based on calculation of cost of the doctors at Iran (1). By performing health evolution plan since early 2015 by Ministry of health, treatment and medical education, amendment of tariff of health services is one of the main steps which was force since late 2015 through country. Based on the changes of tariff, significant changes of incomes of hospitals and costs of insurances occurred (12)

Since in studies performed, about deductions, effect of change of tariff of medical services did not discuss, we try to discuss changes in deductions like surgery, anaesthesia, doctor fee, extra services, diagnostic services and rug in past six months and next six months regardless other studies after signifying relative values book of medical services in treatment and health centres of affiliated treatment centres of Hormozgan Medical sciences university and estimate health evolution plan in terms of it.

Methodology

The present research is analytic-descriptive from methodology and it is applied from aim which has been performed by square and considered phenomena as occasional. All non-educational treatment centres located at provinces of Hormozgan where are governed by public and under supervision of Hormozgan medical sciences university formed the environment of present research. The society of the research is total bills pertain to hospitalization and outpatient services sent to health insurance at 2014 by the said province which consisted of 83413 files from it 40742 (49%) were pertinent to first six months and 42671 (51/15%) pertinent to second six months. In

this research, the sampling did not perform and data from total files having deductions (628 files) by checklist of outpatient and checklist of hospitalizations deductions have been collected (287 files for first six months and 341 files for second six months) in order to determine reliability of self-planned checklists, the experts of investigation of documents and experts of insurance said their views about structure and type of clustering checklists to insert deductions and the checklist is applied as for their theory. At finally, the data has been analysed by SPSS software version22 and descriptive test (median, variance), and deductive (square t and analysis variance).

Findings

In present study, the information pertain to different deductions of 12 non-educational hospitals of provinces affiliated to Hormozgan have been discussed (table 1). In order to determine meaningful difference between deductions before and after presentation of relative values books of services, output of table 3, the results of square t gave been displayed. As for factor t and meaningful level, it is recognized that the significant difference did not see from drug deductions ($p>0/05$, $t=0/832$), anesthesia and surgery services ($p>0/05$, $t=1/147$) and total hospitalization ($p>0/05$, $t=1/695$) before and after presentation of relative values of services in terms of Iran's health insurance. Instead, there was significant difference from average deductions of extra services ($p<0/05$, $t=2/511$), diagnostic services ($p<0/05$, $t=2/406$) and doctors and specialists services ($p<0/05$, $t=2/402$) in present study.

Results of Lopen test showed heterogeneity of distribution variance of deductions for the centres before and after relative values books services, by it, the results of variance analysis showed lacking significant difference between the said centres from deductions ($p>0/05$, $t=1/406$) and after ($p>0/05$, $t=1/755$) actions the book. If the confidence domain is considered as 90%, the statistics show significant difference for deductions after actions of relative values books services and certified that actions of relative values books of services had different effect on centre studied ($p<0/1$, $t=1/755$)

Table 1. Descriptive statistics of deductions of centres studied

Row	Name of City	Average of Deductions	Variance	Total Deductions
1	Aboumosa	1/4920*10 ⁷	2/089*10 ¹⁵	2/69*10 ⁸
2	Bastak	2/6146*10 ⁷	2/941*10 ¹⁵	6/01*10 ⁸
3	Bandar Lengeh	6/5905*10 ⁷	1/776*10 ¹⁶	1/52*10 ⁹
4	Parsian	1/9932810 ⁷	1/776*10 ¹⁶	4/19*10 ⁹
5	Jask	6/5703*10 ⁷	1/946*10 ¹⁶	1/38*10 ⁹
6	Hajiabad	3/8035*10 ⁷	3/231*10 ¹⁵	8/75*10 ⁸
7	Khamir	1/1845*10 ⁷	5/031*10 ¹⁴	2/49810 ⁸
8	Roudan	4/4150*10 ⁷	7/102*10 ¹⁵	1/02*10 ⁹
9	Sirak	1/9544*10 ⁷	3/918*10 ¹⁴	1/357*10 ⁹

Row	Name of City	Average of Deductions	Variance	Total Deductions
10	Qeshm	$6/1721*10^7$	$2/208*10^{16}$	$1/357*10^9$
11	Minab	$4/60602*10^7$	$1/421*10^{17}$	$1/059*10^{10}$
12	Kish	$3/6238*10^7$	$1/703*10^{15}$	$2/899*10^8$
Total deductions		$1/87*10^{10}$		

Table 3, results of average deductions of different services before and after presentation of relative values books services

	Pair Difference			T	Freedom Degree	Significant Level
	Average	Deviance	Error			
Drug Deductions	-1296392.01293	24028075.08532	1577520.41397	-8.22	627	412
Surgery and Anesthesia	-7355885.68103	81464187.77321	5348385.95116	-1.375	627	170
Extra Services	301031.7328	18692375	1223078.39404	-2.511	627	013
Diagnostic Services	-1181293	7479492.13468	491052.71590	-2.406	627	017
Doctors and Specialities Services	-4468107.19397	28337465.74055	1860445.77134	-2.402	627	017
Outpatient Services	-559880.440	7433171.040	488011.587	-1.147	627	252
Hospitalization Services	-44962320.638	404120797.428	26531830.177	-1.695	627	091

Table 3, results of analysis variance about difference of total deductions before and after relative values books services between centres

	Statistics F	Significant Level
Before relative values book	1/406	0/171
	Louin	4/715
After relative values book	1/755	0/063
	Louin	5/282

Discussion

The discussion of average deductions of the centres showed that the hospitals like Minab and Bandar Lengeh have high average compared other hospitals. In different studies, it was shown that multi-specialities general hospitals have high deductions compared hospitals with low specialities. Asgari and et al 2013, showed that scale of deductions in general hospitals had high level compared speciality hospitals (4, 7,8)

Also, there is not significant difference between some of services like surgery and anesthesia, drug and total outpatient services before and after health plan. Deviance for drug deductions before and after intervention was -1296392. Negative sign shows the high deductions after presentation of relative values book to previous deductions. Tavakoli and et al 2006 coted in their study that the more deductions are pertinent to drug 40% (913). Similarly, in study was performed by Safdari, one of the most important deductions pertain to hospital

services and drug (9). In majority of studies performed in treatment and health centres on payables and insurance deductions, surgery and anesthesia services are services which are cited in deductions bills (4, 6, 8). The results of present study showed that deductions pertinent to anesthesia and surgery services had low in first six months than second six months average at 2014. Statistical estimation showed that this difference was not significant ($p>0/05$, $t=1/375$) and the statistics is negative and shows the high deductions of anesthesia and surgery services after relative value book. Zare and et al 2014, noted in their study at Ahvaz that deductions pertain to hospitalization services specially surgery ones was so high than other deductions by treatment and social security (7). Also, deviance of deductions pertain to outpatient services was not significant before and after interventions. That means outpatient deductions were not under presentation of relative values book and there was not significant change although negative sign shows to be great value of deduction for second six months of 2014 than first six months but it was not significant. One of the main reasons for it is lacking much difference for outpatient services in relative values book. Based on findings, the services like drug, doctor visiting, experiment and outpatient services had not significant differences in two time periods.

In study of Karimi and et al 2014, the outpatient services were estimated lower than others and also, the most important deductions of outpatient

services are human faults in registering actions and services not in services offered which conform to findings (5). In Mohammadi and et al study 2010, outpatient deductions were so low than other deductions (14), of course, we shall cite that in relative values services book, outpatient services had low changes and one of the main reasons can be same factor.

The present study showed that deductions of some of services like extra services, doctors and specialities services and diagnostic services had significant average after conducting relative values book. In fact, the results showed that not only presentation of relative values book had positive effect on deductions of extra services but also the deductions increased after it. Khorammai and et al 2013, pointed in their study that deductions for Orthopaedic services (33%) had so high than others (15). In present study, orthopaedic services classified in the form of other services which conform to Khorammi and et al studies. In study by Omrani and et al 2011, services like orthopaedic, lack of evidence which are classified in terms of extra services, had the highest deductions (8). Of course, one of the reasons for signifying deductions of extra services is domain of services that locate this classification. Based on it, Sharon Oswald and et al 2006, pointed that by increasing number of services, the deductions increase too in hospitals (16). Defez¹ and et al 2008, considered discussion of radiology services in French hospitals and pointed that radiology services are one of the most important reasons for payment deductions to French hospitals so that majority of diagnostic services are not regarded as necessary by insurance experts and don't locate in the form of their obligations (17). In study by ElnorKiny and et al which performed in America, deductions on radiology services were so high. They pointed that structural amendments on insurance system caused insurance deductions had significant difference on diagnostic services like radiology services which conform to findings of present study (18). Sharon Oswald and et al 2006, recited that costly services and behaviours are including insurance deduction resources and the necessary actions shall be performed against them to reduce insurance deductions (16). Tavakoli and et al 2006, regarded lack of registration actions and medical orders as one of the most important reasons for deductions (13). Thus, the results of present study showed that the amendments could not reduce deductions on hospitals but it was increased after it significantly.

In order to recognize effect of presentation of relative values book in form of health evolution

plan, we discuss difference between hospitals from deductions before and after interventions and the results showed that the hospitals under study had not significant different before and after intervention and average of insurance deductions was equal. Whereas in majority of studies, from deductions point of view, there was not significant difference between similar hospitals. For example, Zare and et al 2014 performed their study on 5 hospitals of Ahvaz in order to discuss insurance deductions, pointed that only one hospital was significant difference with others and other four hospitals had not significant difference from outpatient and hospitalization services and diagnostic services which conform to findings of present study (7). Also, in study by Asgari and et al 2013 that performed on three hospitals like (burn, Sadoghi and Rahnamon), there was significant difference from volume of deductions point of view and the results showed that burn hospital had high deductions because of speciality services than others and this difference was significant between three (4).

Conclusion

Total results of present show that in study period, 2014, presentation of relative values book had not significant effect on tariff as for increment tariff and change of insurances obligations and increased deductions in some of fields like diagnostic and extra services including orthopaedic. Of course, we shall consider that aim of presentation of relative values book is to amend and realize tariff of medical services not amend total financial structure of health system. But this relation shall be considered as for one of the effects of changes in tariff of insurance obligations and volume of deductions by health and treatment centres. At last, as for lacking positive effect of health evolution plan on score of deductions, the necessary actions shall be performed in removing and amending it.

At last, it seems that some of increment of deductions is pertinent to inability of insurances in paying new obligation by Ministry of Health in form of relative values book so that the Ministry of Health, Treatment and Medical Education shall consider insurances in compilation of new tariff and this needs new study.

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