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REFORMS AND PHYSICIANS' STATUS IN TURKEY:
DISTRIBUTION OF OOP HEALTH EXPENDITURES
FOR PHYSICIANS AND HOSPITALS

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Abstract

Turkish health care reforms brought about significant changes regarding the way physicians practice. Dual-time practice, which was very common among public hospital physicians, was gradually banned. While public insurance coverage has been extended to private hospitals, private practices have been left out. The resulting system rendered physicians more attached to the hospitals, public and private, and decreased their independence. This study explores the change in out-of-pocket payments to physicians and hospitals from 2003, the year reforms started, to 2013. We use a finite mixture model to examine changes in small and large expenditures. Our findings show a steep drop in payments to physicians both for small and large sums of payments. For hospitals, the drop in the size of the payments appear to be compensated by an increase in the number of households making a payment.

JEL Classification: I11, I18

Keywords: Turkey; healthcare reforms; physician dual practice; out-of-pocket health expenditures; finite mixture model; healthcare reforms

ملخص

أحدثت إصلاحات الرعاية الصحية التركية تغييرات كبيرة فيما يتعلق بالطريقة التي يمارس بها الأطباء. وقد تم حظر ممارسة الوقت المزدوج، وهو أمر شائع جدا بين أطباء المستشفيات العام، تدريجيا. وفي حين تم توسيع نطاق تغطية التأمين العام لتشمل المستشفيات الخاصة، فقد تم استبعاد الممارسات الخاصة. جعل هذا النظام الناتج الأطباء أكثر ارتباطا بالمستشفيات، العامة والخاصة، وقللت استقلالهم. وتكشف هذه الدراسة التغير الذي طرأ على المدفوعات التي يدفعها الأطباء والمستشفيات من عام 2003، وبدأت الإصلاحات في عام 2013، ونستخدم نموذج خليط محدود لدراسة التغيرات في النفقات الصغيرة والكبيرة. تظهر نتائجنا انخفاضا حادا في المدفوعات للأطباء على حد سواء لمبالغ المدفوعات الصغيرة والكبيرة. وفيما يتعلق بالمستشفيات، يبدو أن الانخفاض في حجم المدفوعات يعوض عنه زيادة في عدد الأسر المعيشية التي تقوم بالدفع.

1. Introduction

Turkish healthcare reform started in 2003 and aimed to improve access and efficiency of the healthcare system. During the reform process, significant changes concerning physicians have been made. Dual practice, a common case among public hospital specialists, was gradually banned. While public insurance coverage has been extended to private hospitals, private practices by physicians have been left out. The resulting system rendered physicians more attached to the hospitals, public and private, and decreased their independence.¹

Dual practice and its regulation has been an area where research is limited (Moghri et al., 2016). Gonzales and Macho-Stadler (2013) provide a theoretical framework while pointing to lack of research on dual practice and its regulation.

Our work also relates to documentation of the shift in the medical profession. Changes in the way physicians are practicing has been the subject of a quite rich literature. Ritzer and Walczak (1988) provide an early sociological assessment of the change that includes among other developments increasing power of for-profit hospitals over private practices. Numerato et al. (2012) provides a literature review of the increasing management control mechanisms on physicians and their impact. In the US, increase in the ratio of physicians working in hospitals, rather than their own practice, has been well documented (e.g. Kletke et al., 1996). Baker et al. (2014), among others, investigate the impact of hospital/physician integration.

In Turkish case, although the change brought about by the reforms has been mentioned in documents by the professional organizations with a focus on disempowering aspects, we are not aware of any quantitative analysis. To contribute to fill the gap we make use of Household Budget Surveys for the years 2003 and 2013 and compare the distribution of OOP expenditures for physician and hospital services.

This study analyzes the change in the physician standing through out of pocket health expenditures. We compare the years 2003, the year reforms started and 2013. We analyze the change in OOP health expenditure for physician and hospital service. Following section provides information on Turkish reforms and the changes concerning physicians. Then methodology is followed by the results and conclusion.

2. Background

Prior to reforms Turkish healthcare was dominated by government hospitals which made up more than two third of bed capacity with about 100 thousand beds.² Private hospitals had only 12 thousand beds and university hospitals 26 thousand. Accordingly, two third of specialists, about 30 thousand in total, worked in public hospital and about 10 percent in private ones. Dual practice was prevalent among public sector specialists, the rate reaching 89 percent in 2002. Most of these specialists had their own practice. Public employment was salary based and private practice revenues has been an important source of revenue.

Public insurance at the time covered more than two third of the population under different schemes where membership was based on the type of employment. Private providers were not covered under public insurance and required OOP payment for full costs. Public hospitals were free of charge but informal payments were common. A visit to private office often meant shorter waiting times and better care at the public hospital that the practice owner is working. In this setup, OOP expenditure on physicians and hospitals originated from a visit to private office or a private hospital or informal payments to public sector physicians.

¹ See among others OECD/World Bank, 2008; Baris et al., 2011; Atun et al., 2013, on reforms.

² Two third of these belonged to MoH and one third to Social Security Institution. Social Security Institution's hospitals were later incorporated into MoH.

With the reforms a number of changes has been brought to end dual practice. Pay at public hospitals was increased, especially for those who work full-time, through a fee-for service supplement to salaries. Public insurance schemes were unified to cover a larger part of population and started to include private hospitals as well. Private practices were left out. As a result, the number of beds in private hospitals reached 38 thousand while those at the public hospitals went up to 120 thousand and those at university hospitals to 36 thousand.

The number of specialists working dual time decreased gradually and it was banned in 2010.

In 2013 specialists had two main employment opportunities, public or private hospitals, and former employed 35 thousand specialists and the latter 22 thousand. Even though there still are private offices, these are rare and are mostly operated by specialists at university hospitals. In this new setup, OOP expenditures to physicians consisted of informal payments and contributory payments that were initiated since 2010 at the rate of 5 TL for those at public hospitals and 12 TL at private ones.

As a result of these changes we expect an increase in small amounts of payments to both physicians and hospitals, reflecting more prevalent use of these services compared to 2003 with extended insurance coverage and newly initiated contributory payments. On the other hand, we expect large payments, that would correspond to healthcare for more serious cases, to be less prevalent among physicians since they now are working for the hospitals. Such payments to hospitals, however, is expected to increase since private hospitals are more common now and they may be inducing demand for services that are not covered by the insurance.

3. Methodology

For the analysis, we make use of the Household Budget Survey micro level data for the years 2003 and 2013. Data provides household characteristics and detailed expenditures at household level.

We first calculate aggregate figures and compare the two years in terms of the ratio of spenders and the share of total relevant spending to the total expenditures. Then we attempt to uncover how the size of expenditures have changed over time. For that we calculate various percentiles of the share of spending on physicians and hospitals in total budget of households. We also repeat the exercise using the level of spending (adjusted for the general inflation level from 2003 to 2013). We also repeat the calculation for the poorest and the richest quintiles to better observe which households have been more affected by the changes.

Comparison of expenditures is rendered difficult because there are two types and the data does not distinguish between those. On one hand, there are smaller expenditures that may correspond to contributory payments to specialists or physicians working in a hospital. On the other hand, there are payments, formal and informal corresponding to more serious cases. In 2003, when physicians operate their own practice we expect the latter to be more common, whereas in 2013 the former should be more prevalent.

To analyze this, we make use of finite mixture models where data is considered to be driven from a combination of two or more distribution. Following earlier literature on OOP health expenditures, we consider only non-zero expenditures.

In the finite mixture model, the density function estimated for the positive OOP health expenditures can be characterized as follows:

$$f(y|x; \theta_1, \theta_2; \pi) = \pi f_1(y|x; \theta_1) + (1 - \pi) f_2(y|x; \theta_2)$$

where π represents the probability that the observation is an observation from the first distribution and θ_j is the coefficients for the j^{th} distribution. y stands for the share of relevant

(physicians or hospital) OOP health expenditure (in percent). Estimation is performed using Stata's 'fmm' command.

4. Results

Table 1 presents ratio of those with non-zero expenditure in each expenditure category in 2003 and 2013. Also presented is the share of these expenditures in all expenditures in that year.

It is seen that from 2003 to 2013 there has been a significant increase in the number of the households making an OOP expenditure. In 2003, less than 1 percent of the households paid for a hospital visit and about 10 percent for a physician visit. The share of physician and hospital expenditures in all expenditures (of all households) was 0.51 percent and 0.29 percent respectively.

Over the time period considered, those making an OOP expenditure on physician services increased fivefold and hospital services 14-fold. The share of these expenditures in all expenditures, however, stayed the same. This implies that per household payment is lower. Especially considering that in 2003 OOP expenditures were all directly paid to the providers but in 2013 there are co-payments, direct payments to physicians and hospitals should have been lower. The case is stronger in the case of physicians since they have seen an even larger increase in the ratio making an OOP expenditure.

To reduce the impact of the co-payments in 2003 on our calculations, we next eliminate all expenditures below 20 TL from the data and calculate the shares again in the column three of Table 1. The change is quite substantial for the physicians. When the payments lower than 20 TL are removed, the ratio of households with non-zero expenditure drops to one third of the initial figure. The share in total expenditures is reduced by a quarter. As to the hospitals, those with a positive payment decreases by one third but the share in total expenditures changes very little.

In Table 2, we analyze the distribution of OOP expenditures. For that we report several percentiles of the share and level of relevant OOP expenditure for 2003 and 2013. In 2003, we see that an OOP expenditure involving hospitals were extremely rare. It was not observed at even 99th percentile level. Indeed, then, there were very few private hospitals and public hospitals were mostly free. In 2013, however we observe positive shares and level starting from 90th percentile. At 90th percentile they are as high as 6 percent of a household's budget.

For the physicians, we observe a similar pattern with no payment at 75th and 90th percentile in 2003 but positive values in 2013. The trend is different, however, the shares in the budget as well as the level were higher in 2003 relative to 2013. This indicates that direct payments to the physicians (given that these large values are most likely such payments) got smaller with time as physicians started to face competition from private hospitals.

Next, we look at the figures for the lowest income quintile. In 2003 households in this group very rarely make an expense for physician or hospital visit. The one on physicians observed from 99th percentile on is sizable relative to total expenditure. In 2013, we observe hospital expenses starting at 95th percentile and physician expenses starting at 75th percentile. Yet, hospital expense becomes significant share of the budget only at 95th percentile and physician spending is half the figure in 2003.

As to the richest quintile, their expenses in hospitals as a ratio of their total expenditure stays the same at the 99th percentile. In 90th and 95th percentile levels, a hospital expense is observed only in 2013. Physician expenditures, on the other hand are lower in terms of budget share in 2013.

Finally, we analyze expenditures with a finite mixture model. Table 5 below present the results. Finite mixture model shows that both for physicians and hospitals there have been significant

changes. To begin with, as pointed above there are more cases of non-zero OOP expenditures on physicians and hospitals in 2013 relative to 2003. The change is dramatic for hospitals with almost six-fold jump. Those to physicians are doubled. The estimated ratio of small payments increased sharply at the expense of large payments in 2013 relative to 2003. This likely implies that most increase in non-zero expenditures is due to small amounts of co-payments.

As to the average share and its variation, we find important changes. Average figures are lower in 2013 for all cases both for physicians and hospitals. To physicians, large payments went down to one third of the value in 2003. For hospitals, the drop was again by about two thirds. As the increase in the number of spenders is sharper in the case of hospitals, the total share calculated from the estimates appear to be similar in 2003 and 2013 whereas it is about halved for physicians.

5. Conclusion

Turkey has been through a deep transformation in its health system. Although the impact of the reforms on use of healthcare services and expenditures have been investigated, the shift in the position of the physicians and especially the change from dual employment to full-time hospital employees has not been looked into with the exception of vague qualitative assessment. Here we illustrate the change by focusing on OOP expenditures to physicians and hospitals. We find that physicians are paid less through the OOP expenditures. Hospital expenditures, however, are more frequent.

While the findings point to a fall in the share OOP physician expenditures, it does not mean that physician earnings are now lower than it used to be on average. In fact, with the new payment system, physician pay is likely to be higher. The crucial change is the autonomy physicians had by operating their own practice.

Our study needs to be extended in various dimensions. Most importantly how, if in any way at all, the change affected physician practice is of importance.

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Table 1: Ratio of those With Positive OOP Expenditure and The Share of Relevant Expenditures in all Expenditures

		2003	2013	2013 (excluding OOP expenditures lower than 20 TL)
Hospital	Ratio	0.71	9.75	6.14
	Share	0.29	0.31	0.30
Physicians	Ratio	9.05	45.56	13.30
	Share	0.51	0.48	0.36

Notes: Ratio: Ratio of households with positive OOP expenditure in relevant category

Share: (Total expenditures on relevant category summed over all households) / (Total expenditures summed over all households)

Table 2: Percentiles of Relevant Health Expenditure Level and Share in Budget

		Share		Level	
	Percentile	2003	2013	2003	2013
Hospital	90	0	0	0	0
	95	0	1.29	0	34.05
	99	0	6.81	0	177.49
Physicians	75	0	0.50	0	10
	90	0	1.35	0	30
	95	3.11	2.32	73	50
	99	10.74	6.29	194	171

Table 3: Percentiles of Relevant Health Expenditure Level and Share in Budget – Lowest Income Quintile

		Share		Level	
	Percentile	2003	2013	2003	2013
Hospital	90	0	0	0	0
	95	0	0.08	0	.67
	99	0	5.65	0	68.47
Physicians	75	0	0.67	0	8
	90	0	1.66	0	16
	95	0	2.93	0	27
	99	9.26	5.78	85	66

Table 4: Percentiles of Relevant Health Expenditure Level and Share in Budget – Highest Income Quintile

	Percentile	Share		Level	
		2003	2013	2003	2013
Hospital	90	0	0.60	0	30.83
	95	0	2.04	0	108.33
	99	9.53	9.23	363	470.83
Physicians	75	0	0.35	0	16
	90	1.94	1.07	78	53
	95	3.90	2.11	145	102.12
	99	9.34	6.76	400	362

Table 5: Finite Mixture Model Results

		Physicians		Hospitals	
		2003	2013	2003	2013
Component 1 (minor cases)	μ	2.95*** (0.12)	0.55*** (0.009)	2.69*** (0.42)	1.00*** (0.05)
	Σ	2.31 (0.09)	0.38 (0.008)	2.12 (0.36)	0.86 (0.04)
	Probability	68.42	79.41	35.8	71.58
Component 2 (major cases)	μ	10.31*** (4.11)	3.35*** (0.12)	27.07*** (2.02)	7.49*** (0.47)
	Σ	6.35 (0.20)	3.28*** (0.08)	18.31 (1.25)	6.64 (0.30)
	Probability	31.58	20.59	64.20	28.42
N		2184	4557	172	935