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A health system reform is currently being discussed which proposes that payment to Healthcare Service Providers (IPS in Spanish) be made directly by a public entity, the Administrator of Resources of the General System of Social Security in Health (ADRES in Spanish), based on fee schedules per service. Apart from other implications of the proposal, it is essential to note that the payment scheme to be adopted affects the decisions of healthcare service providers regarding the treatments for their users. These decisions also have an impact on patients' health outcomes and the costs of the system.

A research paper published in 2015 in which researchers from Banco de la República (the Central Bank of Colombia) participated, shows that differences in how Health Insurance Entities (EPS in Spanish) pay IPSs are indeed associated with differences in patients' health outcomes1. Research is based on a sample of hundreds of thousands of patients that allows comparing the evolution of similar patients treated in IPSs with different payment contracts with EPSs between 2009 and 2011.

During the study, the form of payment from EPSs to IPSs was mainly based on two different contract modalities: (i) **capitation contracts**, and (ii) **fee-for-service contracts**. Under capitation contracts, an IPS receives a fixed, one-time payment for each individual in the target population it provides care for, regardless of the treatment provided. On the other hand, under fee-for-service contracts, an IPS is paid for each service it offers to patients, similar to what is proposed in the reform recently presented by the Government. Economic theory predicts that the incentives of the IPSs are different under each type of contract. Under a capitation contract, an IPS has incentives to do its best when treating its patients because this way it can avoid readmissions and cost overruns. In contrast, under a fee-for-service contract, an IPS has incentives to charge for services in addition to those that are indispensable, and even to encourage patient readmissions.

The study aimed to examine whether the health outcomes of the patients in the sample reflect these differences. To do this, the research compared some health outcomes for patients who were healthy at the beginning of the period studied, and who were diagnosed with a chronic disease in 2009. The comparison was made between patients diagnosed in an IPS under a capitation contract and similar patients diagnosed in an IPS under a fee-for-service contract. Several health outcome measures were compared, such as the number of emergency room visits, the number of hospitalization days, and some specific events, such as heart attacks and other cardiovascular accidents, all occurring after the patient was diagnosed with a chronic disease.

Table 1 illustrates the results of the analysis for the number of emergency room visits. It shows the results of the comparison of the average number of emergency room visits of initially healthy patients who were diagnosed with a chronic disease for the first time in 2010 during the eight months following their diagnosis. The comparison is made between patients who are initially similar in terms of sex, age, income, type of municipality of residence, and EPS.

The variable "Type of contract" has a value of 1 if the patient is initially diagnosed in an IPS that has a capitation contract with the EPS, and a value of zero if it is a fee-for-service contract. Therefore, the coefficient associated with this variable shows the impact of having a capitation contract vs. a fee-for-service contract. Results are shown in two columns: the first uses the sample of all selected chronic patients, including patients who are diagnosed under one type of contract but who are then treated under contracts of any type. The second column restricts the sample to patients who are diagnosed and treated under the same type of contract.

The results show a negative and statistically significant correlation between being covered by a capitation contract and the number of visits to the emergency department. In the exercise with the complete sample, capitation reduces the number of visits to the emergency department by 0.24 times. With the restricted sample, the reduction is 0.35 visits to the emergency department during the months following diagnosis. From these results, it can be inferred that patients treated under fee-for-service contracts had a more significant number of emergency events than patients treated under capitation contracts.

Since the sample does not include the universe of patients for whom EPSs make capitation payments to IPSs, it is impossible to compare financial costs between the two types of contracts. However, the results suggest that patients diagnosed under fee-for-service contracts not only had less favorable health outcomes (they had to go to the emergency room more often) but were also more costly than patients diagnosed under capitation payments in terms of the resources they demanded from the system.

Table 1: Impact of type of contract on the number of visits to the emergency department.

Regression of the number of visits to the emergency department based on the type of contract at diagnosis. It includes controls for sex, age, income, type of municipality, and EPS. The first column fixes the contract at diagnosis, and the second column uses only individuals for whom the contract type does not change. EPS controls are included. Robust standard errors are in parentheses. ***p<0.001, **p<0.05, *p<0.01.

	(i) Complete sample	(ii) Sample with patients on fixed contract
Type of contract	-0.242***	-0.346***
(capitation = 1, fee-for-service = 0)	(0.0035)	(0.0105)
N	377,519	50,842
R2	0.036	0.088

The research contains additional statistical exercises to compare similar patients more accurately. In addition, it includes estimates comparing other health events, such as heart attacks and cardiovascular accidents. The results are consistent and show that fee-for-service payments are associated with worse health outcomes in chronic patients than capitation payments. Although the research does not delve into the medical mechanisms that generate this distortion, the results are consistent with economic theory, which predicts that the form of contracts determines the incentives of providers to provide adequate care for their patients. In this case, the figures show that the use of fee-for-service payment schemes, such as those proposed in the system's reform recently presented to Congress, are associated with lower effectiveness of the treatments provided and higher costs to the health system (more visits to the emergency department). Decisions made on this matter have an impact on patients' lives and have fiscal implications that must be considered in the design of public policies.

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[1] In the current Colombian health system, EPSs (Health Insurance Entities) manage the health resources that come from affiliates and government subsidies. Meanwhile, IPSs (Healthcare Service Providers) refer to the hospitals and clinics that treat patients and for which they receive payment from EPSs.