Luis Henrique Almeida Castro
(Organizador)

# Dinamismo e Clareza no Planejamento em Ciências da Saúde 5

Atena Editora
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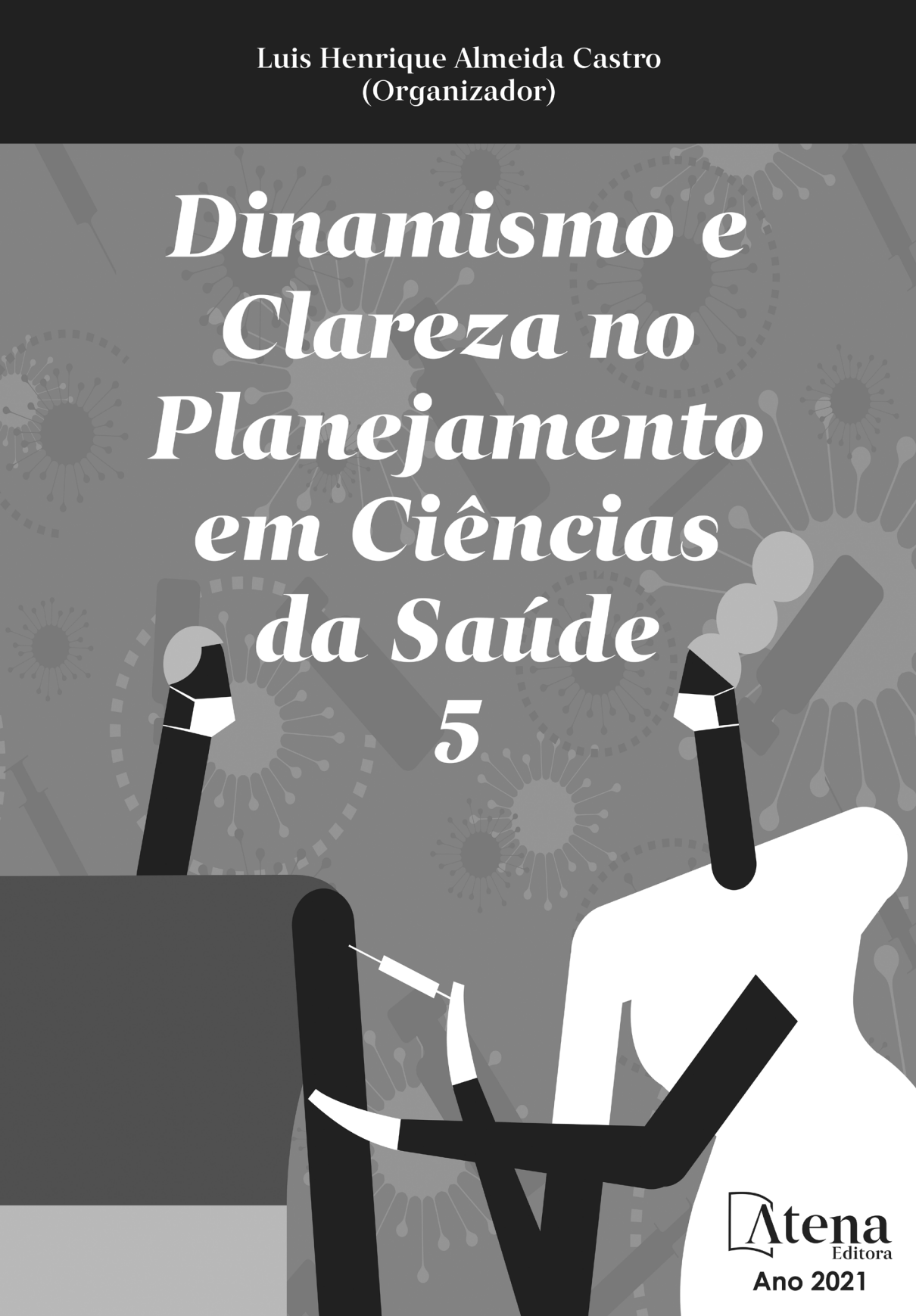

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# APRESENTAÇÃO

Este e-book, como seu próprio título explicita, tem como foco o planejamento de ações nas ciências da saúde. Não obstante, planejar denota preparar um trabalho, ou um objetivo, de forma sistemática; ademais, a etiologia da palavra também conota uma ação, prática e/ou um resultado. Diante disso, a organização desta obra não poderia desconsiderar o contexto que envolve o planejamento estratégico em saúde; desta forma, os 106 trabalhos aqui contidos estão dispostos em 5 volumes que levam em conta justamente o processo construtivo de um plano: a análise científica e literária do caminho percorrido nas ciências da saúde até o momento está representada nos três primeiros volumes que, por sua vez, englobam estudos de revisão, relatos de caso e de experiência, além de pesquisas epidemiológicas; já os últimos dois volumes trazem ao leitor trabalhos que fornecem novas perspectivas de ação em saúde, desde a atenção básica até novos métodos de diagnóstico e tratamento, além de pesquisas qualitativas que tratam da sociologia inerente à prática em saúde, principalmente no Brasil.

Em nome da Atena Editora, agradece-se o empenho dos autores na construção dessa obra e explicita-se o desejo de que esta leitura contribua para a ampliação do conhecimento científico no intuito de inspirar novos estudos que tragam ainda mais resultados para o dinamismo e para a clareza no planejamento em ciências da saúde.

Boa leitura!

Luis Henrique Almeida Castro

## SUMÁRIO

# CAPÍTULO 10

## PAY-FOR-PERFORMANCE SATISFACTION AND QUALITY IN PRIMARY CARE

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**ABSTRACT:** Pay-for-performance has been increasingly used in health systems. The reform of primary care in Portugal introduced health professionals to the possibility of pay-for-performance. Thus, two types of payment co-exist: fixed salary and pay-for-performance. This work sets out to test if the type of payment scheme determines payment satisfaction, to identify factors explaining the payment satisfaction and also to test if the type of payment scheme influences the self-perceived quality of health care provided in primary health care units. A quantitative approach is adopted. Data from a survey is analysed by estimating tobit regressions.

**KEYWORDS:** Incentives, pay-for-performance, primary care, tobit, Portugal.

## SATISFAÇÃO COM PAGAMENTO POR DESEMPENHO E QUALIDADE NOS CUIDADOS PRIMÁRIOS

**RESUMO:** O pagamento por desempenho tem sido cada vez mais utilizado nos sistemas de saúde. A reforma dos cuidados primários em Portugal introduziu a possibilidade de pagamento por desempenho aos profissionais de saúde. Desta forma, dois tipos de pagamento coexistem nos cuidados primários: salário fixo e pagamento por desempenho. Este trabalho visa testar se o tipo de pagamento determina a satisfação com o pagamento, identificar os fatores que explicam a satisfação com o pagamento e, também, testar se o tipo de pagamento influencia na autopercepção da qualidade dos cuidados primários nas unidades de saúde. Recorre-se a uma abordagem quantitativa, utilizando dados de um inquérito aos profissionais de saúde e estimam-se regressões tobit.

**PALAVRAS-CHAVE:** Incentivos, pagamento por desempenho, cuidados primários, tobit, Portugal.

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## 1 | INTRODUCTION

*Payment in the primary health care system*

The reform of the primary health care system in Portugal has been on the scene for nearly 15 years now. A major and unique change took place in 2005 to respond to several challenges such as growing dissatisfaction among professionals, increasing pressure on the health budget and increasing inequity in access to primary health care. This unique change involved the creation of different models of primary family health care units (called USFs hereunder).

Primary health care units are differentiated by their organizational autonomy, functional and technical levels. Although there are a number of differences, the most important one is the payment scheme offered to professionals working in them, in a context of a contracting process. This central difference clearly differentiates USF type A (hereunder USF-A) from USF type B (hereunder USF-B). The first generation of USF-Bs was born in 2007 with the implementation of the primary care reform. At the end of 2013, there were 353 USFs in Portugal of which 161 (45.6%) were USF-Bs (ACSS, 2013).

The USF-As correspond to an early stage of learning how to work in integrated teams (doctors, nurses and administrative staff) within a contracting framework. On the other hand, USF-B corresponds to a more mature and experienced organisation, working with a smoothly-functioning, integrated team of health professionals. This team is supposed to be able to meet extra contracted goals for the provision of health care services. Despite the differences, the Ministry of Health applies the same generic contracting method to any health care service to be provided to the community. Contract targets are defined according to a series of indicators previously designed to assess productivity and to measure health improvement in community. These indicators include the number of children and pregnant women, diabetes and hypertension management, health accessibility, patient satisfaction and the cost of drugs and of other diagnostic tests, as well as treatment cost per patient (for a description in English, see OECD (2015, p. 80-81)).

The contracting method is applied to a set of health care services to be provided by each USF. It can also be applied to additional services. The assessment of the outputs measured by those indicators and the fulfilment of contracted targets results in the payment of monetary incentives. Individual incentives based on pay-for-performance are found in USF-Bs but not in USF-As (OECD, 2015). Therefore, the USF-B doctors' remuneration has three components: (i) a fixed base salary, (ii) a supplement depending on the contracted number of patients (capitation) and home visits, both up to a ceiling, and (iii) an individual-pay-for-performance and completed episodes of care. The doctors in USF-As are not entitled to any other remuneration than the fixed based salary. Though, these USF are eligible to institutional incentives to the unit and/or team payable through amenities, not in cash.

Nurses in USF-Bs are also paid in three components: (i) a fixed salary, (ii) a team-based supplement (based on the number of patients, up to a defined ceiling), and (iii) a team pay-for-performance incentive (based on services provided, achieved commissioned targets concerning accessibility, quality, outcomes and cost-effectiveness indicators). Nurses do not receive individual incentives like doctors do. The pay-for-performance incentive paid to nurses is shared equally among the team members.

Administrative staff in USF-Bs receive a fixed payment plus a component based on capitation, up to a defined ceiling, and premium for achieving commissioned targets, similar to nurses.

More information regarding primary health care's payment system can be seen in Ferreira et al. (2017).

*Pay-for-performance in health care*

A number of studies on pay-for-performance and incentives in health care can be found in the literature (Maynard, 2006, 2012; Trisolini, 2011). The basic difficulty with the health sector is its triangular relationship, which is characterised by asymmetric information: patients do not know and do not pay, the doctors (and nurses) know but do not pay, and the Payer does not know but does pay (Arrow, 1963).

Analysing, in a critical way, Arrow's sentence, in a national tax-based health system with a commissioned system, people usually no hot have to pay at the encounter with the health provider. So, patients pre-paid their care and, in certain circumstances, only have to pay a small amount called moderated fee. In what concerns to Portugal, the 2020 State Budget Law exempted primary health care from charging these fees.

In theory, one way to deal with this asymmetric information is to offer a payment scheme based on performance because a fixed salary does not elicit the high effort and commitment to perform well (Holmstrom, 1979; Lazear, 1995; Pope, 2011).

Interest in pay-for-performance in health systems has increased greatly over the last 20 years. The literature on the effects of this scheme of payment is vast and diversified. The programmes developed and implemented are quite heterogeneous (Eijkennar, 2012) and the effects to be analysed encompasses risk selection, spill-over effects, gaming behaviour, intrinsic motivation, effectiveness and cost effectiveness, medical expenditure, efficiency and resources allocation, gatekeeping, access and equity, and quality. Evidence is extremely fragmented and the conclusions range from no effects to strong effects (for reviews on the subject, see Eijkenaar et al., 2013; Cromwell and Smith, 2011; Gillam et al., 2012; Van Herk et al., 2010).

Generally, pay-for-performance contracts are not associated with improved quality of the services provided (Grossbart, 2006; Mullen et al., 2010; Pearson et al., 2008; Scott et al., 2011; Unutzer et al., 2012;). However, weak or uncertain effects on quality after the implementation of pay-for-performance can be found in empirical literature (Hausman and

Le Grand, 1999; Young et al. 2007; Gillam et al., 2012; Li, 2014; a review by Houle et al., 2012).

A particular example worth mentioning is that of primary care reform in the UK, which also introduced a pay-for-performance scheme of monetary compensation in 2004. Campbell and his colleagues studied the effect of pay-for-performance on quality in 2007 and again in 2009. They concluded in their first work that some aspects of the quality of clinical care did improve (Campbell et al., 2007). In their second study (Campbell et al., 2009), they found that initial improvements continued for heart disease and asthma and that improvements in the quality of care reached a ceiling one year after the introduction of the payment scheme.

In general it is accepted that pay-for-performance has some broad effect on doctors' behaviour and on that of other health care professionals, though the effect on nurses needs further study. It is also agreed that they do respond to financial incentives (Croxson et al, 2001; Gaynor et al., 2004; Hausman and Le Grand, 1999; Hughes, 1993; Lazear, 2000).

The main contribution of this work is that is provides evidence on the effects of pay-for-performance on primary health care, with particular emphasis on doctors' and nurses' satisfaction with their payment and self-perceived quality of health care. This work also contributes to the production of evidence on the economic theory of incentives, which states that pay-for-performance motivates professionals to perform their tasks well and overcomes asymmetric information problems.

This work therefore has two major aims. First, it aims to test if payment satisfaction of health care professionals depends on the type of incentive provided, either fixed or pay-for-performance, and on the role assumed in the USF (doctors, nurses or administrative staff). We further set out to identify the factors that might explain payment satisfaction and to check if the type of incentive plays any role in the perceived healthcare quality of professionals. Second, considering that payment satisfaction provides a good proxy for the effort made by professionals, then this work also tests if effort is motivated by a sufficiently high payment contingent on some measure of the observable output.

A quantitative analysis is undertaken. Data is obtained through a survey of health professionals working in USFs - primary health care units. Index variables are generated in order to have ordinal variables for payment satisfaction and quality self-perception. A tobit linear regression is then estimated.

## 2 | METHODS

*Descriptive statistics*

Data used for this study was obtained from a survey implemented in all USFs of the NUTS II Region [*Centro*] - Central Portugal in 2014. The sample of professionals included 511 individuals who answered an anonymous questionnaire available online, non-

compulsory, accessible with a password. The answers were drawn from 45 USFs, both type A and B, 13 of them of type B. Of the total respondents, 35.2% belonged to USF-Bs and nearly 40% were doctors and 34% nurses (table 1).

| | Total | % | USF - A | | USF – B | |
|---|---|---|---|---|---|---|
| | | | nr | % | nr | % |
| Doctors | 174 | 39.8 | 107 | 32.4 | 67 | 37.0 |
| Nurses | 204 | 34.2 | 137 | 41.5 | 67 | 37.0 |
| Administrative staff | 133 | 26.0 | 86 | 26.0 | 47 | 26.0 |
| Total | 511 | 100.0 | 330 | 100.0 | 181 | 100.0 |

Table 1: Description of professionals' sample

The questionnaire, based on Nelson et al (1992), was designed to measure professional satisfaction in healthcare units. It was adapted to the Portuguese context and it was validated by Paulo (2003), under the supervision of CEISUC (Centre of Studies and Research in Health of the University of Coimbra).

The questions are grouped in such way as to identify three scales of measurement: quality of the workplace; quality of the healthcare provided, and continuous quality improvement. The quality of the workplace is split into three subscales: human resources policy, moral, and financial and technological resources. The scales and subscales are presented in table 2.

| | **Scales** | **Subscales** |
|---|---|---|
| ***Professional satisfaction assessment questionnaire*** | Quality of the workplace | Human resource policy |
| | | Morale |
| | | Financial and technological resources (includes individual payment) |
| | Quality of the healthcare | |
| | Continuous quality improvement | |

Table 2: Professional Satisfaction Assessment questionnaire

The questions were assessed on a Likert scale from (1) bad to (5) excellent, which is then converted into a percentage scale (the transformation, provided by an expert panel, is given by the following match: 0.0 – Bad; 0.5 – Regular; 0.7 – Good; 0.9 – Very Good; 1.0 - Excellent) in order to have more intuitive results.

The subscale "Financial and technological resources" includes questions about how satisfied professionals are with their payment, considering their responsibility, experience

and performance. These questions provide the basis to create an indicator called “payment satisfaction”, a variable derived from the aggregation of the scores corresponding to those three aspects (responsibility, experience and performance) concerning the individual’s assessment of their payment. The aggregation method used is given by the mean of the averages obtained in the answers to the questions concerning payment. It is then expressed as an index ranging from 0 to 1, where 0 means no satisfaction and 1 corresponds to total satisfaction with payment. In our sample, the mean of the variable “payment satisfaction” was 0.39 and standard deviation is 0.324. This variable is the dependent variable in the regression analysis performed next.

This variable can be seen as a proxy to the effort and commitment made by professionals. This effort and commitment are not observable but it is common sense that people who are not satisfied with their payment do not make an effort to perform tasks they were contracted to perform. Therefore, by taking “payment satisfaction” as a proxy for the effort made by professionals, it is reasonable to use this variable to test if pay for performance elicits effort, as predicted by the economic theory on incentives.

Several control variables are used to explain the variation of the payment satisfaction variable. They are grouped as individual and professional characteristics, type of USF and quality variables.

- The individual characteristics variables are gender (Male), age and family status (married). The variable gender takes the value 1 if the respondent is male and 0 otherwise. The variable age takes natural numbers. The variable family status takes the value 1 if married or living together, and 0 otherwise.

- Professional variables identify the profession of the respondent: doctor (DR) and nurse (NR). The default profession is administrative staff. Moreover, there is a variable that controls for the seniority of the respondent in the USF (YearsUSF) and the number of years of experience (YearsExp).

- The variable USF-B is a dummy variable which takes the value 1 if the USF of the respondent is type B, and 0 otherwise. In this way, by default USFs are of type A.

- Finally, the set of quality indicators are as follows, based on the subscales: Human Resources Policy (HRPolicy), Morale (Morale), self-perceived Quality of the Health Care (QHCare), and Quality Improvement (QImprov). The HRPolicy is a variable that captures how far individuals are satisfied with their executive management leaders in matters like acknowledgement of leadership, communication, complaints and planning, and also with the human relationships, including the stability, hierarchical structure and size of the team, and communication. The Morale variable captures the mindset and the leader’s attitude relative to, for instance, openness, innovation, freedom, and support for the team. Self-perceived QHCare is a variable that describes how respondents perceive the

quality of the care provided in the USF with respect to items like coordination of the care, competence of professionals, sensitivity, material conditions, and cost of the care provided. QImprov is the last variable to be considered in the indicators of quality. This variable concerns aspects related to the continuous improvement expected to take place in the USF. It accounts, for example, for having success at the first attempt, how training takes place, working environment, sharing ideas, pride and quality expectations.

The descriptive statistics of some control variables is presented in table 3. The linear correlations and statistical significance between the control variables are presented in the following table 4.

| | N | Min | Max | Mean | Std. Dev |
|---|---|---|---|---|---|
| YearsUSF | 429 | 0 | 41.0 | 5.33 | 3.76 |
| YearsExp | 498 | 3.0 | 42.0 | 20.30 | 10.14 |
| HRPolicy | 503 | 0.11 | 1.00 | 0.64 | 0.15 |
| Morale | 505 | 0.15 | 1.00 | 0.80 | 0.15 |
| QHCare | 500 | 0.14 | 1.00 | 0.78 | 0.12 |
| QImprov | 500 | 0.19 | 1.00 | 0.80 | 0.13 |

Table 3: Descriptive Statistics

| | | YearsUSF | YearsExp | HRPolicy | Morale | QHCare |
|---|---|---|---|---|---|---|
| YearsExp | Pearson Correlation | 0.076 | 1 | - | - | - |
| | Sig. (2-tailed) | 0.117 | 498 | | | |
| HRPolicy | Pearson Correlation | 0.139** | 0.090* | 1 | - | - |
| | Sig. (2-tailed) | 0.004 | 0.047 | | | |
| Morale | Pearson Correlation | 0.043 | -0.025 | 0.561** | 1 | - |
| | Sig. (2-tailed) | 0.378 | 0.576 | 0.000 | | |
| QHCare | Pearson Correlation | 0.100* | -0.021 | 0.632** | 0.543** | 1 |
| | Sig. (2-tailed) | 0.040 | 0.643 | 0.000 | 0.000 | |
| QImprov | Pearson Correlation | 0.077 | -0.016 | 0.651** | 0.642** | 0.742** |
| | Sig. (2-tailed) | 0.116 | 0.725 | 0.000 | 0.000 | 0.000 |

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 4: Correlations between control variables

The control variable correlations presented in table 4 show that there are strong, positive and significant correlations between quality variables, particularly between the variables QHCare and QImprov, with a correlation value of 0.742. These correlations may

result in a multicollinearity problem at the regression estimation stage. For this reason, different specifications of the model are then presented.

Before proceeding, a word must be said about the control variable USF-B. This variable plays a central role in this work because it is a proxy for the types of incentive paid to professionals. Data on the incentives and salaries are not available, thus the indicator of the type of USF is a good single proxy for the types of incentive that are paid in each USF. Therefore, in a USF-A, the incentives are fixed salaries and in a USF-B, the incentives are based on performance.

*Model*

To understand how health professionals' satisfaction with the payment can be explained, a linear regression has been estimated, as follows:

$$\textbf{Payment satisfaction} = a_0 + b_0 \textbf{ control variables} + \textbf{error}_0.$$

The response variable is limited from below and above and, therefore, OLS estimation is not the best method because parameter estimates may be inconsistent. The best method to estimate this equation is the tobit model. The control variables are those presented above. The estimation is done with GRETL. Different specifications of the model regarding some control variables are estimated to present a sensitivity analysis.

After running this first regression, another regression is estimated to test if the "self-perceived Quality of the Health Care" (QHCare) is correlated with the type of incentive paid. Again, the type of incentive is proxied by the variable USF-B. The tobit regression to be estimated is given by

$$\textbf{self-perceived Quality of Health Care} =$$
$$= a_1 + b_1 \textbf{ (individual and professional variables and also USF type)} + \textbf{error}_1 .$$

## 3 | RESULTS

The results of the estimation of Payment satisfaction are presented in table 5. These results show that only three variables explain payment satisfaction: being a nurse (NR); the USF-B type, and human resources policy (HRPolicy). While these last two variables contribute positively to payment satisfaction, being a nurse contributes negatively to that satisfaction. In other words, the higher the individual satisfaction with the human resource policy, the higher the payment satisfaction, and also working in a USF-B increases the payment satisfaction of the healthcare professionals. However, being a nurse decreases the probability of payment satisfaction of the professional. This result allows the ranking of professionals working in the USF according to their satisfaction with the payment offered. The most satisfied are doctors, followed by administrative staff and the least satisfied are nurses.

| *Payment satisfaction* | Model 1<br>Coef (P>ltl) | Model 2<br>Coef (P>ltl) | Model 3<br>Coef (P>ltl) | Model 4<br>Coef (P>ltl) |
|---|---|---|---|---|
| const | -0.117 (0.518) | -0.259 (0.042) | -0.162 (0.282) | -0.128 (0.475) |
| Age | 0.000 (0.647) | 0.000 (0.593) | 0.000 (0.592) | 0.000 (0.632) |
| Married | 0.043 (0.405) | 0.049 (0.347) | 0.044 (0.392) | 0.044 (0.401) |
| Male | 0.032 (0.622) | 0.032 (0.625) | 0.035 (0.596) | 0.034 (0.602) |
| DR | 0.002 (0.977) | -0.005 (0.940) | 0.001 (0.987) | 0.002 (0.971) |
| NR | -0.189 (0.001) | -0.193 (0.001) | -0.192 (0.001) | -0.191 (0.001) |
| YearsUSF | 0.007 (0.210) | 0.007 (0.195) | 0.007 (0.201) | 0.007 (0.201) |
| YearsEx | -0.001 (0.666) | -0.001 (0.795) | -0.001 (0.686) | -0.001 (0.667) |
| USF-B | 0.363 (<0.0001) | 0.363 (<0.0001) | 0.360 (<0.0001) | 0.361 (<0.0001) |
| HRPolicy | 0.811 (<0.0001) | 0.636 (<0.0001) | 0.761 (<0.0001) | 0.791 (<0.0001) |
| Morale | -0.146 (0.472) | - | -0.209 (0.234) | -0.192 (0.296) |
| QHCare | -0.005 (0.987) | - | - | -0.082 (0.738) |
| QImprov | -0.149 (0.607) | - | - | - |
| | | | | |
| LR $X^2$ (Prob > chi2 ) | 133.310 (0.000) | 131.832 (0.000) | 132.946 (0.000) | 133.128 (0.000) |
| Log. Likelihood | 228.938 | 229.836 | 229.127 | 229.071 |

Table 5: Payment Satisfaction tobit results

A second regression is estimated to check if the self-perceived Quality of health care is explained by the type of USF, i.e., the type of incentive paid. The results are presented in table 6. The estimated coefficient for variable USF-B is positive and significant, meaning that the type of incentive based on performance contributes to the self-perceived Quality of health care provided by the health care unit. In fact, the only variable showing statistical significance is the USF-B variable.

| Self-perceived Quality of Health Care | Model 5 Coef (P>\|t\|) |
|---|---|
| const | 0.764 (<0.0001) |
| Age | 0.000 (0.450) |
| Married | 0.015 (0.281) |
| Male | 0.015 (0.419) |
| DR | 0.006 (0.746) |
| NR | 0.004 (0.807) |
| YearsUSF | 0.002 (0.201) |
| YearsEx | –0.001 (0.113) |
| USF-B | 0.055 (<0.0001) |
| | |
| LR $X^2$ (Prob > chi2 ) | 28.889 (0.000) |
| Log. Likelihood | 261.871 |

Table 6: Self-perceived Quality of Health care tobit results

## 4 | DISCUSSION

The literature on the effects of pay-for-performance is vast and diversified. However, there is no consensual evidence on the effects of that type of payment, particularly with respect to the professionals' behaviour and quality of the health care service.

The empirical evidence of this work indicates three factors to explain the payment satisfaction of professionals. First, the human resource policy followed by USF unit and the type of USF help to explain the professionals' satisfaction. Second, being a nurse contributes negatively to satisfaction with the payment. The most satisfied professionals are doctors and the least satisfied are nurses. This could be because doctors receive individual incentives and nurses do not. Moreover, from the operational point of view, doctors receive their incentives monthly while nurses may receive part of their incentive annually. Despite this result about the lower satisfaction of nurses, our work cannot identify the motives for this dissatisfaction, which would be worth exploring in future research.

Given that the variable USF-B is a proxy for the type of incentives paid to professionals, the positive and significant estimated coefficient provides evidence to support the economic theory on incentives. Thus, the pay-for-performance offered to USF-B staff increases the payment satisfaction and therefore motivates the effort and commitment to perform tasks well, in order to obtain a favourable performance.

The contribution of the human resource policy to explaining payment satisfaction discloses an implicit aspect of the incentives provided to professionals, which is the payment

component for team work. A well-managed team and well-accepted leaders promote satisfaction with the human resource policy, which in turn leads to higher incentives paid to each person. Moreover, a smoothly functioning human resources policy efficiently manages issues such as communication, complaints and planning. This helps doctors to perform additional medical activities for which they are paid under the pay-for-performance schemes of USF-Bs, and so it contributes to the satisfaction of doctors concerning their payment.

None of the individual characteristics of professionals seems to explain payment satisfaction. So, the idea that in USF-As the professionals tend to be old, non-dynamic and risk averse individuals while those in USF-Bs are young and dynamic does not seem to be verified in our sample.

The third finding from this work that is worth mentioning is that perceived quality of health care also improves with the type of incentive offered. That is, the pay-for-performance influences the (self-perceived) quality offered in the USF. However, it cannot be concluded that there is a causal relationship between pay-for-performance and quality or improvement of quality.

One limitation of this work derives from the data gathering process, which involved an individual questionnaire, and answers may be biased in some way. Respondents might have biased their answers in the direction they thought they should answer; they might have given untruthful answers or they might have misunderstood the questions. However, the anonymity of the survey may overcome this problem.

A second limitation lies in the aggregation of answers to create index variables. The aggregation method is simple and it does not take the variation of the variables composing the aggregation into account. This may be open to question when using regression analysis, based on the variability of the independent variables to explain the variability of the dependent variable.

A third limitation could lie in the use of payment satisfaction as a proxy for the effort and commitment of health professionals to perform well. It could be argued that someone may be satisfied with their payment because they are well paid and yet they are not making any effort to perform well. However, first, the payment for performance depends on the results and therefore on the effort made to perform well; second, the incentives paid have a team component which encourages all members of the team to monitor each other and ensure the work is done well; third, for ethical reasons, it is believed that health professionals, doctors and nurses, would not shirk through laziness or luckiness.

## 5 I CONCLUSION

In spite of these limitations, this work contributes to the ongoing discussion about the effects of pay-for-performance schemes in primary health care.

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## REFERENCES

ACSS. Relatório de Atividade Cuidados de Saúde Primários - 2011 a 2013, 2013 Available at http://www.acss.min-saude.pt/Portals/0/f_381895_1.pdf. Accessed 14th April 2014.

Arrow, K.J. Uncertainty and the welfare economics of medical care. American Economic Review, v.53, n.5, p.941-973, 1963.

Campbell, S.M. et al. Effects of Pay-for-performance on the Quality of Primary Care in England. New England Journal of Medicine, v.361, n.4, p.368-378, 2009.

Campbell, S.M. et al. Quality of Primary Care in England with the introduction of Pay-for-performance. New England Journal of Medicine, v.357, n.2, p.181-190, 2007.

Cromwell, J., Smith, K.W. Evaluating Pay-for-performance Interventions. In: Cromwell, J., Trisolini, M.G., Pope, G.C., Mitchell, J.B., Greenwald, L.M.( Eds). Pay-for-performance in Health Care: Methods and Approaches. Research Triangle Park, NC: RTI Press, 2011.

Croxson, B. et al. Do doctors respond to financial incentives? UK family doctors and the GP fundholder scheme. Journal of Public Economics, n.70, v.2, p. 375-398, 2001.

Eijkennar, F. Pay-for-performance in Health Care: An International Overview of Initiatives, Medical Care Review, v.69, n.3, p.251-76, 2012.

Eijkennar, F. et al. Effects of pay for performance in health care: A systematic review of reviews systematic. Health Policy, v.110, p.115–130, 2013.

Ferreira, P.L., Raposo, V., Antunes, P.F. Cuidados em saúde primários: governança e inovação em saúde em Portugal. In: Jorge, S.B., Bezerra, I.C., Leitão, I.M.T.A. (Eds.), Pesquisa em Saúde no contexto do cuidado, redes de atenção, fluxos e avaliação: multiplicidades de olhares. Fortaleza: Universidade Estadual do Ceará, Editora UECE, p.458-499, 2017.

Gaynor, M. et al. Physician Incentives in Health Maintenance Organizations, Journal of Political Economy, v.112, n.4, p.915-931, 2004.

Gillam, S.J. et al. Pay-for-Performance in the United Kingdom: Impact of the Quality and Outcomes Framework—A Systematic Review. Annals of Family Medicine, v.10, n.5, p.461-468, 2012.

Grossbart, S. What's the Return? Assessing the Effect of "Pay-for-Performance" Initiatives on the Quality of Care Delivery, Medical Care Research Review, n.63, v. (1), suppl: p.29S-48S, 2006.

Hausman, D., Le Grand, J. Incentives and health policy: primary and secondary care in the British National Health Service. Social Science Medicine, v.49, n.10, p.1299.307, 1999.

Holmström, B. Moral Hazard and Observability. Bell Journal of Economics, n.10, v.1, p.74-91, 1979.

Houle, S.K.D. et al. Does Performance-Based Remuneration for Individual Health Care Practitioners Affect Patient Care? A Systematic Review. Annals of Internal Medicine, v.157, n.12, p.889-899, 2012.

Hughes, D. General practitioners and the new contract: promoting better health through financial incentives. Health Policy, v.25, n.1-2, p.39-50, 1993.

Lazear, E. Performance pay and productivity. American Economic Review, v.90, n.5, p.1346-1361, 2000.

Lazear, E. Personnel Economics. Cambridge: MIT Press Books, 1995.

Li, J. et al. Physician response to pay-for-performance: evidence from a natural experiment. Health Economics, v.23, n.8, p.962-978, 2014.

Maynard, A. The power and pitfalls of payment for performance. Health Economics, v.21, p.3-12, 2012.

Maynard, A. Incentives in healthcare: the shift in emphasis from the implicit to the explicit. In: Dubois, Carl-Ardy et al. (Eds) Human Resources for Health in Europe. Berkshire: Open University Press, 2006.

Mullen, K.J., et al. Can you get what you pay for? Pay-for-performance and the quality of healthcare providers. Rand Journal of Economics, v.41, n1, p.64-91, 2010.

Nelson, E., et al. The physician and employee judgement system: reliability and validity of a hospital quality measurement method. Quality Review Bulletin, v.18, n.9, p.284-292,1992.

Paulo, G. Satisfação dos profissionais de saúde – avaliação em dois modelos de gestão hospitalar. Adaptação e validação cultural do hospital employee judgment system. Master thesis in Health Management and Economics. Coimbra: Faculdade de Economia da Universidade de Coimbra, Portugal, 2003.

Pearson, S.D. et al. The impact of pay-for-performance on health care quality in Massachusetts, 2001-2003. Health Affairs, v.27, n.4, p.1167-1176, 2008.

Pope, G.C. (2011) Overview of Pay-for-performance Models and Issues. In: Cromwell, J., Trisolini, M. G., Pope, G. C., Mitchell, J. B., Greenwald, L. M., Eds. Pay-for-performance in Health Care: Methods and Approaches. Research Triangle Park, NC: RTI Press, 2011.

Scott, A. et al. The effect of financial incentives on the quality of health care provided by primary care physicians. Cochrane Database of Systematic Reviews, v.9: p.CD008451, 2011.

Trisolini, M.G. (2011) Theoretical Perspectives on Pay-for-performance, in Cromwell, J., Trisolini, M. G., Pope, G. C., Mitchell, J. B., Greenwald, L. M., (Eds). Pay-for-performance in Health Care: Methods and Approaches. Research Triangle Park, NC: RTI Press, 2011.

Unutzer, J. et al. Quality Improvement With Pay-for-Performance Incentives inIntegrated Behavioral Health Care. American Journal of Public Health, v.102, n.6, p. e41-5, 2012.

Van Herck, P. et al. Systematic review: Effects, design choices, and context of pay-for-performance in health care. BMC Health Services Research, v.10, p. 247- 260, 2010.

Young, G.J. et al. Effects of Paying Physicians Based on their Relative Performance for Quality. Journal of General Internal Medicine, v.22, n.6, p.872-876, 2007.

OECD. OECD Reviews of Health Care Quality: Portugal 2015: Raising Standards. Paris: OECD Publishing, 2015.

## ÍNDICE REMISSIVO

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