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**MASTER OF SCIENCE IN FINANCE**

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Title

Patient Choice and Choice Fees in the Portuguese  
National Health System

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National Health System**

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## **EXECUTIVE SUMMARY**

This work aims to assess the possibility of allowing patients the freedom of choice in the Portuguese National Health System (NHS). Patient choice has been promoted on several countries to reduce waiting times and to encourage competition between providers. This study also tries to identify the likelihood of implementing a fee associated with choice (choice fee) to generate an additional source of income, which would be an innovative measure. The research focuses on similar health systems such as the United Kingdom (UK) that recently implemented this choice policy, which effectively spurred competition and improved economic efficiency, quality and equity. Price-sensitivity and user fees are also studied to assess the applicability of the choice fees, since there are no studies comprising fees associated with patient choice. Therefore, the main objectives of this study were to explore patients' reactions to the offer of provider choice and to determine which factors influenced their decisions on where to have their treatment; to compare uptake of choice between different social groups; and to evaluate the feasibility of applying a fee in order to choose, as well as what would be the best-fit value for the choice fees. A questionnaire was created for such purposes, and was then made available online to target a wide set of patients, and printed for personal interviews in a health center. The results were processed statistically and econometric models were estimated using an ordered probit approach.

Important results include the fact that patients consider clinical outcomes such as waiting times the most important factors in providers and practical considerations such as distance and type of hospital as the least important, indicating that choice would create significant pressure for hospitals to improve outcomes if they want to be chosen. Also, the majority finds choice to be more important than the associated price, indicating willingness to pay and inexistence of a great asymmetry in social groups hence creating the necessary conditions for the choice fees. Concerning the best-fit value, the minimum proposed in this study would be the appropriate fee to be implemented for this sample, which represents a value that is equivalent to the user fee.

Although this study had as limitations the size and composition of the sample, it provides useful insights into how choices would be made due to the rich structure of the variables that contributed to the construction of the econometric models, and provides the basis for future research to be conducted on a much broader sample.

**Keywords:** competition, patient choice, health econometrics, Portuguese NHS

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## **LIST OF ABBREVIATIONS**

AMI	Acute myocardial infarction
DRG	Diagnosis-related group
EU	European Union
GP	General practitioner
HRA	Health Regulatory Agency
INE	National Statistics Institute
INSA	National Institute of Health Dr Ricardo Jorge
LOS	Length-of-Stay
NHS	National Health Service
OECD	Organisation for Economic Co-operation and Development
RHA	Regional Health Administration
UK	United Kingdom
US	United States
USF's	Family Health Units
VHI	Voluntary health insurance
WHO	World Health Organization

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## 1. INTRODUCTION

Patient choice has been promoted for a number of important reasons, in particular to reduce waiting times and to encourage competition between providers. Competition is expected to make care more responsive to patients' needs and, among other things, improve economic efficiency, quality, and equity of healthcare (Dixon et al., 2010; Grytten et al., 2009; Vrangbaek et al., 2012). Another goal for patient choice advocates has been the protection and promotion of the interests of patients in healthcare (Victoor et al., 2012).

Patient choice has already been implemented in several north European countries such as the United Kingdom (UK), and though this policy is still recent, several common facts have already emerged. Gaynor et al. (2010) found that choice spurred competition in a way that care seeking patterns had changed, with better quality hospitals being chosen more often. Cooper et al. (2012) found that hospitals improved their productivity by reducing their overall length-of-stay (LOS) without discharging patients quicker. Cooper et al. (2011) also found that hospitals improved their quality by reducing their mortality rates, especially those found in more competitive areas, indicating strong pressure from the ability to choose. Better management practices were also found to improve due to the pressure of competition (Bloom and Van Reenen, 2007). Additionally, they find that these management practices are associated with better NHS hospital outcomes, including lower deaths following emergency Acute Myocardial Infarctions (AMI) admissions, better financial performance, higher staff satisfaction and higher scores from the quality regulator. Another important finding is that choice was not exercised only by the better off (Dixon et al., 2009) and that it did not lead to an increase in inequality of treatment across patients from different areas (Cookson et al., 2010).

Following the success of this measure in the UK, patient choice could be adapted for the Portuguese NHS in order to improve economic efficiency, overall quality and equity. In the Portuguese NHS, providers are reimbursed according to the procedures effectively done to patients, by means of a standardized classification called Diagnosis-Related Groups (DRG's) (Decree no. 839-A/2009 of 31 July), and therefore costs are identical across all providers nationally. Intrinsically, if the money follows the patients, this selection process will encourage providers to compete for patients by improving their

quality and decreasing their costs (Burge et al., 2006), which eventually helps ensure the quality, efficiency and equity of healthcare. This study further investigates whether it would be possible to introduce a fee associated with choice (choice fees), meaning that whoever would like to employ its right to choose would be required to contribute with a fee, similar to the calculations based on the user fees maintaining the same exemptions/reductions. Choice fees could be an appropriate financing mechanism because they would be effective in raising additional funds (additional source of income), efficient by encouraging an efficient use of services, and equitable in benefiting poor people as long as exemptions are conserved.

As such, this research had as main objectives: 1) to explore patients' reactions to the offer of provider choice and to determine which factors influenced their decisions on where to have their treatment; 2) to compare uptake between different social groups; and 3) to evaluate the feasibility of applying a fee in order to choose.

More specifically, the objectives were:

1. To identify the determinants of choice to be able to predict the variation in demand for the services of particular providers on the basis of the relevant characteristics of the health care providers on offer.
2. To compare uptake of choice between different patients in terms of health, socio-economic, socio-demographic or other characteristics.
3. To gauge the likelihood of the uptake of choice when patients are confronted by a fee to exercise the choice and what would be the maximum value that patients would be willing to pay in order to choose.

This research addressed these aims and objectives by the means of a questionnaire made available online using stated preference discrete choice experiment techniques and statistical data concerning consumer preferences from rating exercises. The instruments used to collect data were developed in close consultation with previous studies, in order that information on providers was presented in a manner as close as possible to that which was being developed in other projects.

Workshops were used to test alternate means of presenting and formatting the information and choices, and qualitative investigations were conducted on the effect of

the instrument's design, and presentation of information. The instrument design was finalized in the light of results both from the workshops and from piloting.

The resulting data was used to construct two econometric models using an ordered probit estimation of patients' choices and to statistically define the sample and which factors are more important to patients, using the programs STATA v.12 and SPSS v.19. The modeling results provide insights into how patients value several aspects of health care providers and the willingness to pay a fee in order to choose, as well as allowing in identifying any differences between patients in terms of health, socio-demographic or other characteristics, into how these choices are made. Results indicate that choice is considered as very important, that providers' outcomes such as waiting times and success rates are the most important to patients and factors such as distance and type of hospital as the least important, that patients are willing to pay just the equivalent to the user fee, which was the minimum value proposed in this study, and that patients' degree of choice do not differ greatly in terms of socio-economic or socio-demographic characteristics.

All these results are for this sample and should be taken in consideration as such, as the average patient in this sample was found to be different from the average patient in the NHS. Further research comprising a national-level sample would be very interesting as models could be assessed that can predict patient flows providing the opportunity for the Health Department to plan capacity, and to predict the income that would be generated from the choice fees.

In Section 2 this work elucidates the drive for patient choice with the literature review from other countries, followed by a direct approach to the Portuguese context in Section 3. The research design, data, and modeling approach are described in more detail in Sections 4-5. Section 6 describes how the model results are to be interpreted and Section 7 concludes. Lastly, Section 8 presents this study's limitations and provides the basis for further research and analysis. Full disclosure of the questionnaire is contained in the Appendix B.

## **2. LITERATURE REVIEW**

### **2.1.WHY CHOICE?**

Patient choice has been promoted for a number of important reasons, in particular to reduce waiting times and to encourage competition between providers. Competition is expected to make care more responsive to patients' needs and, among other things, improve economic efficiency, quality, and equity of healthcare (Dixon et al., 2010a; Grytten et al., 2009; Vrangbaek et al., 2012). Another goal for patient choice advocates has been the protection and promotion of the interests of patients in healthcare (Victoor et al., 2012).

### **2.2.EVIDENCE ON CHOICE**

The assessment of the recent implemented choice policy is still ongoing on several countries such as the United Kingdom (UK), but several common facts seem to be already emerging.

#### **2.2.1. Did choice affect providers?**

There is evidence that GP's were skeptical about choice and did not offer it to all patients, slowing down the take-up of choice (Dixon et al., 2010). Nonetheless, there is also evidence that patterns of care seeking altered in a way that suggested that better quality hospitals were being chosen more often. A study from Gaynor et al. (2010) showed that hospitals with lower pre-policy mortality rates and waiting times had a greater upsurge in elective patient's post-policy than those with higher mortality and higher waiting times. Indeed, Seiler (2011) showed that sicker patients were more sensitive to mortality rates and chose better pre-policy providers more often.

#### **2.2.2. Quality and efficiency**

Gaynor et al. (2010) and Cooper et al. (2011) undertake a difference-in-difference analysis using the variation in location of hospitals pre-reform to derive a causal effect of competition post-reform. Together with Propper et al. (2008), they have exploited the fact that hospitals located in less concentrated areas are more exposed to the policy of competition post-reform. They found that Acute Myocardial Infarctions (AMI) death

rates fell post-policy more in hospitals located in competitive areas than in other hospitals. In addition, Gaynor et al. (2010) found that hospitals located in more competitive areas had a larger fall in mortality from all causes and reduced length of stay post policy more than other hospitals, and a study from Cooper et al. (2012) suggest that competition between public providers prompted public hospitals to improve their productivity by decreasing their pre-surgery, overall and post-surgery length of stay. Yet, they did not increase overall expenditure or experience differential changes in a crude measure of labor productivity (activity per staff member).

According to Propper (2012), these papers attempted to deal with a range of technical issues. Seiler (2011) worries about endogeneity of measures of quality and uses econometric techniques to deal with this. Cooper et al. (2011) test the robustness of various measures of market concentration. Gaynor et al. (2010) seek to move beyond a focus just on mortality from AMI. In addition, Gaynor et al. (2010) worry about other policies that were operating at the same period and undertake a series of robustness tests to ensure that these are not driving the results. The findings are robust to all these tests. The findings that quality has improved also fit with Dranove–Satterthwaite (Dranove and Satterthwaite, 1992) model of competition between hospitals. Buyers therefore care about quality, and competition should increase quality.

Nevertheless, the difference-in-difference approach remains open to the criticism that it does not account for what is happening within the ‘black box’—these papers do not present findings on how individual managers in hospitals and clinicians experienced the reforms (Propper, 2012).

One paper however sheds some light on what may be driving the results. Bloom et al. (2010) examine the relationship between the quality of hospital management practices, outcomes and competition. They use a cross-sectional study of around 100 NHS acute care hospitals in 2006. They measure management practices by a survey instrument that has been shown to predict better performance in other sectors of the economy in the UK and elsewhere (Bloom and Van Reenen, 2007). They find that these management practices are associated with better NHS hospital outcomes, including lower deaths following emergency AMI admission, better financial performance, higher staff satisfaction and higher scores from the quality regulator. In addition, exploiting the fact that hospitals located in marginal political constituencies are less likely to be closed,

they use political marginality to instrument the number of competitors a hospital faces. They find that competition appears to result in better management practices. As turnover of NHS managers is high, this may be one reason why hospitals located in competitive areas have better outcomes post the reforms—the quality of management in these hospitals is higher.

### **2.2.3. Equity**

Despite fears that poorer patients would be disadvantaged by increasing choice and competition, there seems to be little evidence that this is the case. Dixon et al. (2009) found that choice was not exercised only by the better off. Cookson et al. (2011) also found no increase in inequality of treatment across patients from different areas. Also, Seiler (2011) found that the individuals from poorer areas were more sensitive to waiting times post-reform.

## **2.3.KEY ISSUES**

Although choice might well increase quality, efficiency and equity and help in reducing waiting times, three major constraints have to be recognized from the outset.

First, there is an irreconcilable conflict in the context of a fixed health care budget, such as the case of Portugal, between allowing individual patients unconstrained choice of treatments that are free at the point of consumption, and the allocation of resources in a cost-effective manner. Individuals may choose treatments that are the most effective (and that best meet their preferences) but not the most cost-effective (or that reflect the preferences of a society as a whole) with corresponding opportunity costs in terms of health gain foregone by other patients (Appleby et al., 2003). One patient's choice may deny another's treatment.

The option for choice could work the same way as the recent policy adopted for the user fees in 2012 (Law Decree n. ° 113/2011). Patients are required to pay considerably more for emergencies, therefore selecting those who really need an emergency treatment, with exemption from payment for the poorer to address equity issues. According to the population studied in this paper, it would be possible to introduce a fee for the right to choose, which would allow for a better control of patient flows. Also, introducing

business risk continuity would create more incentives for providers to allocate resources in a much more cost-effective manner (*see* point 4.3. ahead for more information).

Second, the knowledge and the ability to make informed choices. For patients to be able to choose they need complete information, unrestricted cognitive abilities, consistent preferences, willpower and the ability to foresee their needs (Kooreman et al., 2010). However, several studies suggest that these conditions are rarely satisfied (Hibbard et al., 1997; Moser et al., 2010) and most patients are consequently unable to make a completely rational choice (Haynes et al., 2003; Kooreman et al., 2010; Foster et al., 2010; Fasolo et al., 2010).

According to several studies, the degree to which patients are capable of processing the information rationally is influenced by their health literacy and their numeracy (Faber et al., 2009; Fasolo et al., 2010; Peters et al., 2009). In summary, research indicates that explicitly giving or making patients aware of comparative information (Kolstad et al., 2009) and improving the presentation format (Hibbard et al., 2010; Damman et al., 2010) increases its use. It is therefore vital that the Portuguese Government promotes projects that develop a ranking system between providers, distinguishing performances by easily-digestible information for all patients to understand.

Third, the economic factors. Portugal is under strong pressure to reduce costs and rationalize funds, which could be a hazard to empower patient choice. There are still no evidences that choice will reduce costs (Propper, 2012). In fact, some studies have shown that consumer-directed healthcare does not control costs better than other healthcare systems (Parente et al., 2004) in the short-run, although there is evidence that patient choice improves quality and economic efficiency (Dixon et al., 2009; Cooper et al., 2011; Cooper et al., 2012; Gaynor et al., 2010), hence creating financial benefits in the long-run.

In this work, the possibility of introducing a fee in order to choose is studied to determine its application to atone for cost issues and to better control patient flows. It was included in the questionnaire a question where patients were required to choose the maximum value they were willing to pay if they wanted to choose. This also allows for determining the value that would best fit this sample. Considering that this value would represent just a small portion of the financing required for the NHS, it could still provide additional revenue.

As such, it is important to study the price-sensitivity in order to determine the applicability of the choice-fee.

#### **2.4.PRICE SENSITIVITY/COST SHARING**

A study from Chernew et al. (2008) has demonstrated that patients in low-income areas were more sensitive to copayment changes than patients in high or middle-income areas. Also, Buchmueller (2009) concluded that the elasticity of demand appears to vary with consumers' health risk, with younger, healthier individuals being more price sensitive; and Schut et al. (2003) also concluding that price elasticity is much lower for elderly than for non-elderly. Consistent with these findings, Strombom et al. (2002) concluded that younger and healthier employees are between two and four times more sensitive to price than employees who are older and who have been recently hospitalized. As such, it is determined that the demand for health care is price sensitive and that children and the poor are hurt more than the population in general by the introduction of user fees, as Gertler et al. (1990) have concluded.

However, Chernew et al. (2008) have noted that above the lowest income category, price responsiveness to copayment rates was not consistently related to income. The relationship between patients' adherence to health services and income may account for a portion of the observed disparities in health across socioeconomic groups. Rising copayments may worsen disparities and adversely affect health, particularly among patients living in low-income areas. Similarly, Eaddy et al. (2012) identified relatively clear relationships between cost sharing, adherence, and outcomes. They showed that an increasing patient share of medication costs was significantly associated with a decrease in adherence. For articles that investigated the relationship between adherence and outcomes, the majority noted that increased adherence was associated with a statistically significant improvement in outcomes (Eaddy et al., 2012).

As such, to raise revenue, adherence and to protect the poor simultaneously and to improve both the health care system and the chances of the poor to contribute to the economic development, studies suggest that the Government needs to shield vulnerable groups from the adverse effects of user fees (Gertler et al., 1990), which in the Portuguese context is already implemented: although user fees are applicable to a



considerable part of the NHS services, there are many exceptions/reductions to the payment of the fees and the groups that are exempt from those payments represent approximately 54% of the population (ACSS, 2012), addressing the equity issues, and supporting younger and poorer patients who are more price-sensitive.

Nonetheless, user fees did not act as a deterrent for the overuse of health services, which was the main purpose, possibly due to its low value (Deloitte, 2011). As such, the Government has recently increased significantly the fees. Unfortunately there are no published studies yet concerning the recent policy measures, which would be required in order to make assessments about the recent use of the services.

## **2.5.WHY CHOICE-FEES?**

Related to user fees, this work tries to evaluate the feasibility of applying a fee in order to choose. This fee would be associated with the exercise of choice, meaning that whoever would like to employ its right to choose would be required to contribute with a fee, similar to the calculations based on the user fees maintaining the same exemptions/reductions. This measure would allow for three main benefits, as Akin et al, (1987) have suggested. First, although user fees and the fees proposed by this study in order to choose are not intended to work as a source of income, it would generate additional revenue for the health sector. Second, fees would increase efficiency of government health services delivery by reducing frivolous demand for services and encouraging use of those with low charges and costs. This was previously mentioned on the first key issue about choice. Lastly, fees to exercise choice would improve access of poor people to health services because they would have exemptions/reductions from the payments. Thus, choice-fees would be an appropriate financing mechanism because they would be effective in raising additional funds, efficient by encouraging an efficient use of services, and equitable in benefiting poor people.

## 2.6.UNRESOLVED MATTERS ON CHOICE

The emerging evidence indicates that competition between hospitals can improve outcomes in an NHS setting. But what is known is only a small part of the picture. In terms of what is known about competition:

- There are no published costs of the cost of introducing competition (Propper, 2012);
- The outcomes that have been measured are only a small part of the whole activity of hospitals, and some would argue these are not well enough measured to base strong conclusions upon (Propper et al., 2008);
- The mechanisms by which these improvements have occurred are not well understood or researched (Cooper et al., 2011);

These are important factors that need to be taken in consideration when promoting patient choice, especially cost-related issues as it can be very prejudicial to the Portuguese NHS as it faces an economic crisis at the moment of writing. Further research with a much representative sample would be required to make the proper assessments concerning the predicted changes in patient flows on a national level and the predicted income that the choice-fees could generate. Also, choice must be preceded by a number of measures to increase and regulate competition in order to be successful. These measures will be discussed in the next chapter.

### **3. PATIENT CHOICE IN THE CONTEXT OF THE PORTUGUESE NHS**

The Portuguese health system, like its European counterparts, has been facing potential problems of financial unsustainability. That is, there is the possibility that in time the system might not be financially viable, unless new measures that lead to a slowdown in the rate of growth of the public expenditure on healthcare are introduced. It is worth pointing out that the National Health Service is defined as being universal, general and tendentiously free. However, it is increasingly clear that this approach does not allow it to meet adequately the important challenges of access, quality, effectiveness and efficiency that health systems are required to face in an increasingly acute way.

Within this perspective, patient choice in the Portuguese NHS could potentially help reduce costs in the long-run by increasing cost-efficiency and improving quality, as mentioned in the previous chapter.

#### **3.1. ISN'T CHOICE ALREADY POSSIBLE?**

Concerning the freedom of choice, a distinction must be made between freedom of choice in the NHS and freedom of choice in the Portuguese Health System.

There is already choice in the Portuguese Health System, as any citizen can go to any provider as long as the citizen directly pays (Barros et al., 2011). On the other hand, if the citizen is beneficiary of a subsystem or health insurance, freedom of choice also exists, although it is limited, as patients are encouraged to use a network of providers agreed in the plan (which does not include all the service providers in the country but only those that the health plan deems to be sufficient to cover the needs of its customers). Patients can also resort to a provider outside that network agreed, but they are deterred economically (they have to bear a larger proportion of the price) and financially (they have to pay directly, and are reimbursed later). In this sense, it was decided for the purposes of this study's model to gather information about the existence of a private insurance or not, and it was included as an explanatory variable.

With regards to the NHS, while legal documents do refer to the possibility of patients having choices in health care (Law n. ° 27/2002), the mechanisms needed for patients to acknowledge their possibilities are not developed (Barros et al., 2011). Patients in the

NHS must register with a GP and can only choose among the available providers within a geographical area based on their residence or the catchment area of the hospital; and secondary care is subject to a gatekeeping process, with strict rules for referral both in outpatient appointments and emergency room episodes.

### **3.2.HOW WILL CHOICE IMPROVE HEALTHCARE IN PORTUGAL?**

The principle through which patient choice is assumed to bring about competition between healthcare providers is ‘voting with your feet’ (Hirschman, 1970). This means that patients who are looking for high-quality care while minimizing costs will directly compare the prices and quality of different providers against each other and actively choose the provider that best fits their preferences and needs. In this context, ‘actively’ means that patients invest effort in acquiring information and making a conscious decision based on that information. In the Portuguese NHS, providers are reimbursed according to the procedures effectively done to patients, by means of a standardized classification called Diagnosis-Related Groups (DRG’s) (Portugal, Decree no. 839-A/2009 of 31 July), and therefore costs are identical across all providers nationally. Intrinsically, if the money follows the patients, this selection process will encourage providers to compete for patients by improving their quality and decreasing their costs (Burge et al., 2006), which eventually helps ensure the quality, efficiency and equity of healthcare. This line of reasoning applies not only to northwest European countries (Dixon et al., 2010; Grytten et al., 2009; Dixon et al., 2009; Fotaki et al., 2008) and Portugal, but also to the USA, where patient choice was already an important element in the healthcare system (Fung et al., 2005).

### **3.3.CREATING THE NECESSARY MECHANISMS FOR COMPETITION**

According to a study from Deloitte (2011), several factors contribute for the lack of competition in the Portuguese NHS:

1. The prescriber does not pay what it prescribes
2. The payer does not control what is prescribed nor what is consumed
3. There is a wide information asymmetry between providers and citizens

4. The supply offer of the NHS establishes zones of influence for each provider and includes a network of referral between providers
5. The citizen does not have complete freedom of choice
6. There is no business continuity risk for service providers in the NHS.

As the competition is distorted, providers do not have the appropriate incentives to the continuous improvement of services provided (higher quality, lower overall costs and reduced waiting times). To correct this inadequacy of incentives, it is essential to introduce mechanisms of competition in the health sector, taking into account the special characteristics of operation of this market.

In this work, only points 3, 4, 5 and 6 indicated above will be considered. Points number 1 and 2 although related, are beyond the scope of this study. For more information on those matters please *see* Deloitte (2011).

Regarding the asymmetry of information, in order for patients to be able to actively choose the best provider, they need to be informed about the quality of providers, whatever the health system. Without information on the performance of providers, patients do not have an important mechanism of pressure on the quality of services. Quality indicators are therefore always needed, but with particular relevance in the Portuguese context, where NHS users have reduced, relatively uniform costs across alternatives (DRG's). A quality indicator is a measurable aspect of care that gives an indication of the quality of care. Concerning this matter, it is relatively simple to correct the problem by obligating the providers to register and publicly disclose their performance in clinical terms, for each pathology. This information is already available today in the clinical processes of patients, although most is in paper form. With the proper treatment and the publication of such information, competition would be stimulated and care providers would have more incentives for continuous improvement (Deloitte, 2011). A government initiative comprising information services as a support for increasing choice is consequently imperative. In Portugal, there are already projects that are developing a ranking system for patients to compare several providers based on their performance, namely by the Health Regulatory Agency (HRA), as the English NHS did with the government-provided site 'Choose and Book' (National Health Service, 2006).

Concerning the NHS supply offer, the establishment of influence zones and the referral network have resulted in the isolation of competition for service providers, eliminating any incentives for differentiation either by quality, cost or waiting times. In this context, providers don't have to struggle for customer loyalty and there is a risk of patient selection, influenced by the level of the funding of the activity (depending on the patients' illness). In complement to the measure of patient choice in the NHS, the influence zone and the referral network should only work as guidelines, thus not limiting choice as they do now, so that GP's can advise and guide the choices of patients. This way, providers would have to compete in the NHS and, therefore, would have more incentives for continuous improvement (Deloitte, 2011).

Regarding the freedom of choice in the NHS, the measures mentioned above contribute to actually make possible the choice in the NHS, by effectively promoting the competition. However, there is a risk that costs might be increased in the NHS in cases where some services might no longer have a proper volume of activity and will be very expensive and very risky to maintain from a clinical point of view. To avoid this significant increase in the costs of the NHS, it is essential to introduce continuity risk, i.e., it is indispensable to create conditions to close services that lose competitiveness, removing installed capacity that is not used (Deloitte, 2011). This is opposed to the total and abrupt termination of all the activities of a provider. By creating these policies, in conjunction with the choice-fees, the implementation of patient choice combined with the reduction of the total costs of the NHS is possible, because the services with better clinical results are also the services with lower unit costs (Deloitte, 2011), and because the NHS would benefit from patient flows, while creating better conditions for its control.

As such, to create competition and to prevent the growth of the total costs of the NHS, the introduction of patient choice should be preceded by the creation of conditions to close services that are no longer competitive and by the elimination of information asymmetry between providers and patients.

As a transitional measure, before allowing full liberalization of choice, patients could be given freedom of choice only for some types of health care at the beginning and gradually extend its reach over time, similarly to what is happening in the UK.

## **4. SURVEY DESIGN AND DATA COLLECTED**

### **4.1. SURVEY DESIGN**

#### **4.1.1. Literature review on the questionnaire**

A number of studies were identified which examined a range of aspects of health care provision from the perspective of the patient with an aim to elicit information on their preferences. These include studies that developed a survey with Discrete Choice Experiments, which were thoroughly reviewed for the construction of this study's questionnaire (Burge et al., 2006; Burge et al., 2005).

These studies also allowed to identify the determinants of choice, which will be discussed further on this work.

#### **4.1.2. Design of the instrument**

In order to design a questionnaire that provides quantifications of the main drivers of demand, it is necessary to gain an insight into which factors are likely to be most relevant to those facing the possibility of choice. There was a large range of information that could have potentially been presented to patients, and there was also potential for the format in which this was presented to have significant impacts on the weight assigned to the information.

In practice, however, several studies in the UK already covered this subject concerning the sort of information that was made available to patients and the way it was presented. The papers that comprised such information from Choose and Book, the official online database made available for patients to choose online, were then selected as the base for the survey development (Burge et al., 2006; Burge et al., 2005).

The following (Table 1) are the elements which were considered important factors in patients' choice decisions and thus included in the model.

**Table 1**

#### **Important elements in patients' choice decisions included in the model**

Insurance Plan	Success rates of surgery
Age	Health expenditures

Gender	Distance of provider
Education	Provider reputation
Free transportation to and from provider	Waiting times
Costs	Influence of GP
Type of hospital	Close accommodation for friend/family
Having surgery in Portugal or abroad	

The questionnaire developed in this study is backed-up and supported by previous papers and research on other countries that were successful in its implementation, to the extent that it was decided to keep a similar formatting and look. Nonetheless, a number of meetings were undertaken to assess its adaptability to the Portuguese NHS.

#### **4.1.3. Field research**

As previously mentioned, although this survey is backed-up by studies that were successful in its implementation, several meetings were also undertaken with the investigation team from the Regional Health Administration to adapt several questions to the Portuguese reality. This was an essential part of the study as it:

- enabled the language used to describe patient choice to be assessed; this was imperative to ensure that terms used in the questionnaire were not ambiguous or difficult to understand as this could lead to the collection of erroneous information;
- enabled a greater understanding of the issues; this was required to ensure that the correct questions were asked and consequently that relevant information was collected; and
- ensured a cross section of socio-economic groups.

Overall, there were several key issues that arose concerning the Portuguese NHS. These issues included a lack of information available within the current system, a desire to know the reputations of the hospital and the consultant, hygiene information, the availability and reliability of health technology, and transport issues.



#### **4.1.4. Questionnaire structure**

A questionnaire structure was developed, drawing on the input from other papers and the workshops (Appendix B). This was designed to collect the data of interest for the modeling of choice behavior including questions to build the context for the respondents and to collect information on factors that could influence choice behavior, the willingness to pay a fee in order to choose, and to compare the uptake of choice between different socio-economic groups.

#### **4.1.5. Piloting of the survey**

Once the basic design for the survey and the discrete choice exercises had been developed, a pilot of 20 respondents were undertaken to test:

- the process of recruiting respondents;
- the implementation of the survey;
- the wording of the questions; and
- the ability of respondents to complete the questionnaire.

After the pilot there were no revisions to be made to the experiments, from which the questionnaire was then made available online and printed for the personal interviews.

#### **4.1.6. Sampling**

The questionnaire was made available online from the internet surveying site 'Qualtrics', which specializes in online survey software. From a specified link, the questionnaire was published in social networks to target a wide set of patients, therefore a broader set of opinions. However, obtaining large scale online response of such a detailed survey often becomes a challenge, particularly when considering time constraints. To complement the online survey, the questionnaire was also implemented in a health center, the Family Health Unity of St. André de Canidelo, with personal interviews.

Taking into account this is a master's thesis, a reasonable amount of responses were guaranteed. However, the aim and scope of this thesis is to develop a first approach and some conclusions about modeling and estimating determinants of patient choice in the Portuguese context. Future research will comprise a more extensive collection of data,

with less time constraints, and support from ARS, as a nationwide sample may provide key information of great value to the Health Department.

## **4.2.DATA COLLECTED**

### **4.2.1. Descriptive statistics**

From the combined sources, a total of 218 surveys were collected between the 2<sup>nd</sup> of August and the 2<sup>nd</sup> of September, totalizing one month. The data was then analyzed and processed statistically, as it can be observed in Table X overleaf.

This study comprised 123 female respondents (64%) and 70 male respondents (36%) with an average age of 40, ranging from 16 to 90 years. 126 respondents have health insurance (59%) and 119 (56%) already knew that the NHS doesn't provide the opportunity to choose under standard situations, although 144 respondents valued choice as being very important (68%). Nonetheless, only 81 valued choice as being very important when confronted by the possibility of having to pay a fee in order to choose (38%). As such, when asked what would be highest price one would be willing to pay to be able to choose, a total of 121 patients responded that they were willing to pay a fee to choose (61%), with 58 willing to pay the minimum fee (29%) and 28 willing to pay the maximum (14%). Only 5 patients responded that they would not pay any fee in order to choose (3%). Concerning the mode of transport, 195 patients use their car to get to their hospital (76%) followed by 34 that use public transports (13%), taking 16 minutes in average for all transport modes. When patients were asked if they would take the opportunity to choose an alternative provider, only 5 responded that they would not consider that option (2%), although this number rose to 24 when asked if they would consider the opportunity to go abroad (12%). Regarding education, 179 (92%) respondents have the equivalent to high school, with the majority being graduated from university (54%). As of working situation, 102 (52%) are in a paid job, and the average monthly income is 2697€, although the median which controls for the extremes is 1000€. Lastly, the average perception of the health state is approximately 8 out of 10 for the last 4 weeks and the last year, although for patients older than 65 the average lowered to approximately 6 out of 10.

**Table 2****Descriptive statistics of sample**

	N	Mean	Std. Error of Mean	Median	Std. Deviation	Minimum	Maximum
Health insurance	214	1.41	.034	1.00	.493	1	2
Choice awareness	213	1.44	.034	1.00	.498	1	2
Choice importance	213	4.48	.065	5.00	.950	1	6
Willingness to pay for choice	214	3.90	.077	4.00	1.124	1	6
Hospital Information on internet	214	1.20	.033	1.00	.486	1	4
Home hospital	213	3.23	.089	3.00	1.293	1	5
Travel time	206	16.80	.940	15.00	13.488	3	95
Choice consideration	207	1.32	.038	1.00	.546	1	4
Choice abroad consideration	207	1.77	.057	2.00	.819	1	4
Importance: Overall costs	205	3.77	.097	4.00	1.388	1	5
Importance: Distance	205	3.23	.090	3.00	1.285	1	5
Importance: Type of hospital	204	3.34	.090	3.00	1.290	1	5
Importance: Success rates	205	4.82	.040	5.00	.567	1	5
Importance: Staff friendliness	203	4.21	.060	4.00	.856	1	5
Importance: Hospital reputation	202	4.28	.062	5.00	.877	1	5
Importance: Quality of care	206	4.59	.049	5.00	.705	1	5
Importance: Cleanliness	205	4.64	.047	5.00	.675	1	5
Importance: Comfort	205	4.38	.055	5.00	.781	1	5
Importance: Food quality	203	3.81	.070	4.00	1.004	1	5
Importance: Visits schedule	203	3.55	.074	4.00	1.054	1	5
Importance: family/friend	204	3.97	.072	4.00	1.031	1	5
Choice fee best-fit value	199	3.53	.093	4.00	1.313	1	5
Discuss: GP	199	2.01	.083	2.00	1.176	1	5
Discuss: Doctor/home hospital	200	2.40	.070	2.00	.992	1	5
Discuss: Doctor alternative hospital	199	3.14	.069	3.00	.978	1	5
Discuss: Family/friends	199	2.90	.093	3.00	1.301	1	5
Discuss: Special telephonenumber	199	4.56	.080	5.00	1.126	1	5
If offered: Distance	196	3.34	.086	3.00	1.203	1	5
If offered: Private hospital	194	2.61	.083	3.00	1.161	1	5
If offered: Public hospital	196	2.89	.086	3.00	1.197	1	5
If offered: in Portugal	196	3.63	.080	4.00	1.118	1	5
If offered: Where family may visit	196	3.79	.075	4.00	1.044	1	5
If offered: Free accommodation	197	3.55	.088	4.00	1.234	1	5
If offered: Hospital reputation	198	4.30	.062	5.00	.871	1	5
If offered: Doctor reputation	199	4.55	.055	5.00	.769	1	5
If offered: Success rates for surgery	198	4.85	.032	5.00	.444	3	5
If offered: Waiting less	198	4.62	.045	5.00	.633	2	5
If offered: Free transportation	196	2.91	.088	3.00	1.235	1	5
If offered: Good communication between hospitals	194	4.24	.067	5.00	.932	1	5
If offered: Post-surgery close to home	198	4.40	.058	5.00	.823	1	5
Which hospital to choose	195	2.88	.035	3.00	.488	1	4
GP visits last year	192	1.85	.181	1.00	2.513	0	20
Health state last month	195	8.08	.129	8.00	1.796	1	10
Health state last year	195	7.98	.138	8.00	1.929	1	10
Health expenditures last month	171	68.59	35.372	10.00	462.550	0	6000
Health expenditures last year	175	350.82	52.786	130.00	698.297	0	6500
Gender	193	1.64	.035	2.00	.482	1	2
Age	195	39.04	1.270	31.00	17.737	16	90
Education	195	4.86	.070	5.00	.982	1	7
Employment status	194	3.40	.186	2.00	2.592	1	8
Monthly income	143	2697.13	677.970	1000.00	8107.337	0	75000

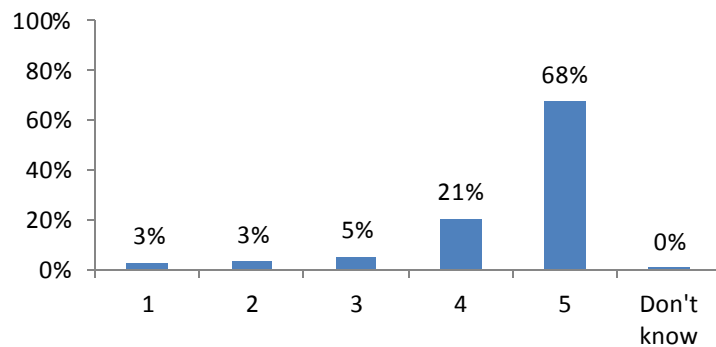
Concerning important statistical results that help in answering key questions of this study such as how patients regard choice, or if they would consider the option to choose, if a choice fee would be possible or what would be the value that would be willing to pay for, are described below.

## How do patients regard choice?

A simple representation of the frequency of responses is presented (Figure 1), with '1' representing "choice as not important at all" and '5' representing "choice as very important".

**Figure 1**

### How patients regard choice



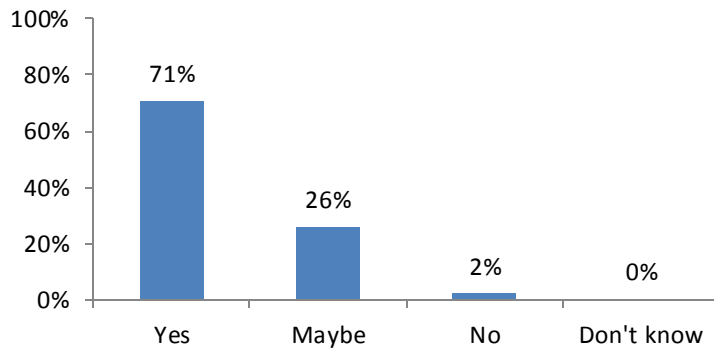
144 patients, slightly more than two-thirds of the sample (68%), consider choice as very important. This number is quite representative if we compare it to the opposite extreme, with only 6 patients (3%) reporting that choice is not at all important in any way. The average is 4.48 out of 5.

## Would patients take on the offer of choice and change providers?

Regarding the hypothetical event that patients would be offered a choice, a simple question such as "would you consider the option to choose and change providers" was made available to test the take-up of choice to assess the viability of such measure. In Figure 2 is described the frequency of the responses to this question.

**Figure 2**

**Would patients take on the offer of choice and change providers**



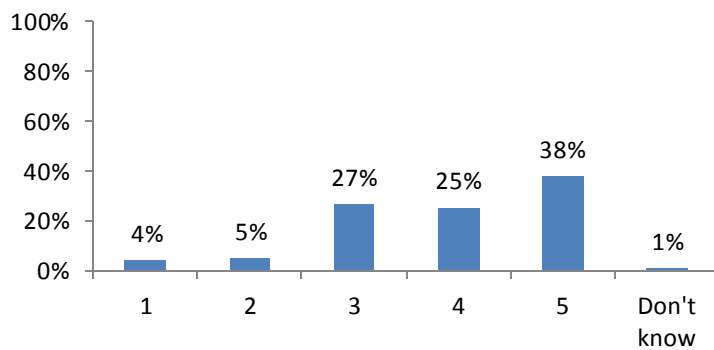
147 (71%) patients said they would take on the offer, and only 5 (2%) said they would not even consider the option. A representative fraction of 54 patients (26%) was not able to reach a decision, opting for the 'maybe' option, but only 1 (approximately 0%) chose the option 'Don't know'.

**Would it be possible to introduce a fee associated with choice (choice-fee)?**

One of the aims of this study was to assess the likelihood of introducing a fee associated with choice. For that purpose, a question was included in the questionnaire that would allow patients to directly compare the importance of choice with the importance of the costs. '1' represents the costs component meaning that price is more important than choice, and '5' the opposite, that choice is more important than the costs associated, indicating a strong willingness to pay in order to choose.

**Figure 3**

**Likelihood of introducing a choice-fee**



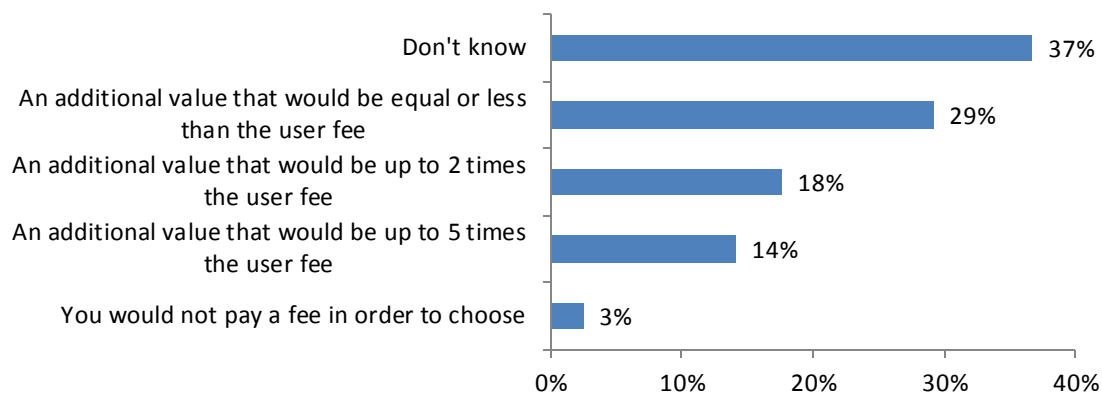
81 (38%) patients consider choice as being very important when associated with a cost. Only 20 (9%) patients would not be interested in paying a fee in order to choose, while 135 (63%) would be willing to pay a fee in order to be granted the right to choose. The average is 3.90 out of 5.

### **What is the maximum value that patients are willing to pay in order to choose?**

Another important goal of this study was to assess the best-fit value for the choice fee. A question including several values was comprised in the questionnaire that allowed for patients to choose the range of values that they were willing to pay to choose. These were related with the user fees for best understanding and because they would be possibly linked with user fees in the future (as proposed in this study) to assess equity problems and to simplify calculus.

**Figure 4**

#### **Best-fit value for the choice fee**



121 (61%) patients would be willing to pay a fee, although 73 (37%) did not want to answer. However, only 5 (3%) said they would prefer not having the right to choose if it would be required to pay a fee. Of the 121 patients that were willing to pay, 28 (14%) were willing to pay the maximum that was proposed in the questionnaire, which was a value up until 5 times the user fee required for their operation, 35 (18%) were willing to pay up until 2 times the user fee and 58 (29%) were willing to pay the minimum, the same value they would pay for the user fee or less.

#### 4.2.2. Average patient

The average patient in this sample versus the average patient in Portugal differs in several key aspects. The most extreme difference is related to education, in which 93% of the respondents in the sample compared to the 30% of patients in Portugal have at least the equivalent to a high school diploma, between the ages of 25 and 65 (OECD, 2012). Another major difference is regarding the monthly income, before taxes. In this study's sample the average patient earns 2697€ which is around the double compared to the 1300€ average in Portugal (OECD, 2012). Since this sample has great disparities between the extremes, in order to be more accurate, only 90% of the sample was considered by removing 5% from each extreme, which allowed for a much lower and accurate average income of 1135€ Also, there are some disparities concerning the insurance plans. In the sample, 60% of the respondents have a health insurance plan, while in Portugal only approximately 26% of the patients have health insurance (INSA, 2007).

These differences will probably influence the results in this sample to be different from the total population. Again, this study's purpose is to work as a reference for future research, and the results from this study should be taken in consideration of this sample only.

**Table 3**

#### Average patient in sample versus average in Portugal

	Sample	Portugal	Observations
Health status	78%	49% <sup>a</sup>	Health rated as 'good' or 'very good'
Female (% of total)	64%	51.6% <sup>b</sup>	
Age (years)	39	40 <sup>b</sup>	
Education (with at least 12 years of study)			
Age 25-65	93%	30% <sup>a</sup>	That have at least high school
Age 25-34	98%	48% <sup>a</sup>	That have at least high school
Employment status	53%	66% <sup>a</sup>	Working-age population with a paid job
Monthly income	1135€ <sup>c</sup>	1300€ <sup>a</sup>	Average income before tax
Insurance	60%	26% <sup>b,c</sup>	Comprising health subsystems and VHI

a. OECD, 2012

b. Barros et al., 2011

c. INSA, 2007

\*Average without 5% from the minimum and 5% from the maximum values

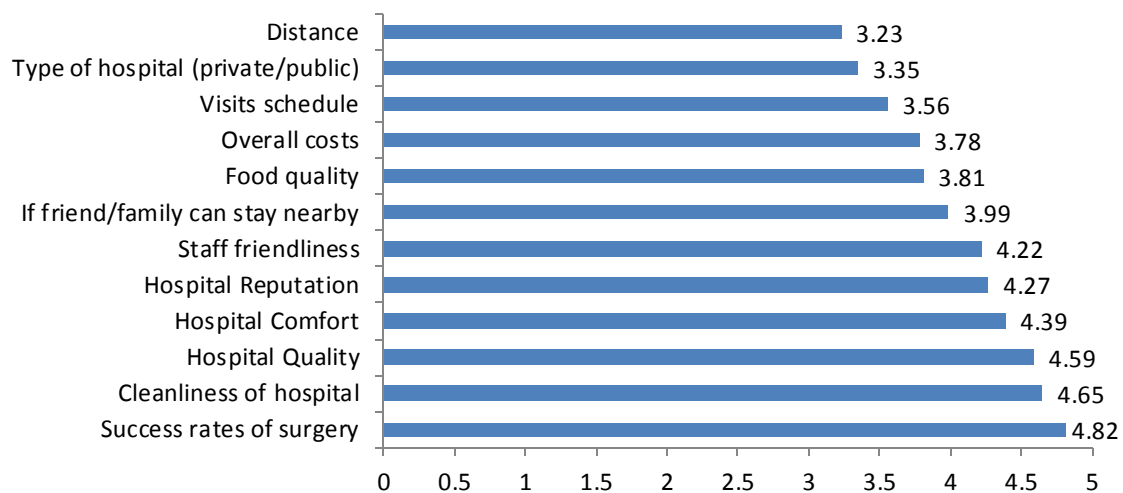
### 4.2.3. Factors influencing response to hypothetical choices

Respondents were asked to rate the importance of various factors that might influence their choice. These factors were ranked by assigning a score ranging from 0 to 5, not important to very important, respectively. Table 2 shows the proportion of respondents indicating their opinion on the importance of the information they would like to have about the alternative provider, and Table 3 shows the importance that patients attribute to the different factors presented if the choice was already available, alongside the average scores for each factor.

Concerning what patients' rate as most significant in what they would like to know about the alternative provider, greater importance was accorded to good clinical outcomes, a clean environment, reputation of hospital and its comfort. Practical considerations were also important to the survey respondents, but the distance and type of hospital were ranked the lowest.

**Figure 5**

**Importance of information on several factors regarding alternative provider**

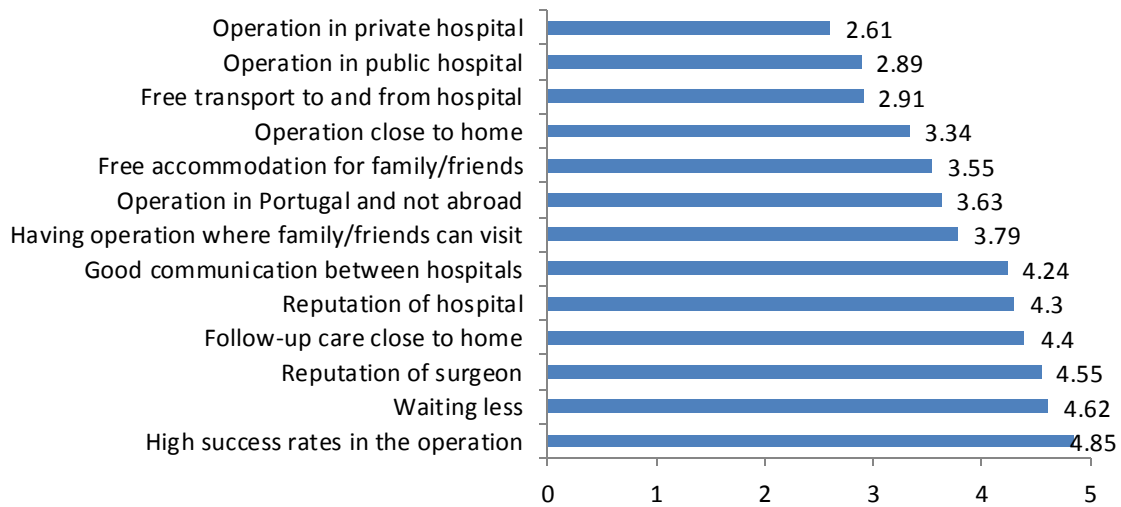


Regarding Table 3 about the importance patients attribute to the different factors presented, greater importance was accorded to good clinical outcomes as well, shorter waiting times, reputation of the surgeon as well as the hospital, and continuity of care. Practical considerations were once more also less important to the survey respondents, and the type of hospital was ranked the least important of the factors.



**Figure 6**

**Importance regarding several factors if choice was offered**



**4.2.4. Correlations**

The most relevant correlations found in this sample concern several socio-economic factors such as gender, age and education; and factors such as the willingness to pay a fee in order to choose and also the GP opinion. They were obtained using the SPSS v.19.

**Table 4**

**Correlations on this sample**

	Insurance	Choice importance	Choice consideration	Distance	Surgery in Private Hospital	Surgery close to home	Surgery in Portugal	GP visits	Health state last year	Health expenditures last year	Monthly income
<b>Gender</b>				.187**							
<b>Age</b>		.146*	-.214**			.218**	.214**	.342**	-.428**	.240**	
<b>Education</b>	-.205**				-.346**		-.189**	-.273**	.164*		.202*
<b>Willingness to pay for choice</b>	-.139*	.327**						-.172*			
<b>GP opinion</b>					.158*		-.165*	-.209**			
<b>Best-fit value for choice</b>	-.286**										

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

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

#### **4.2.4.1. Gender**

According to the correlations calculated using the Pierce Method, male respondents considered that choice is more important when associated with a fee. Women in general tend to care more about distances.

#### **4.2.4.2. Age**

Older patients tend to regard choice as being more important. Correspondingly, when confronted by the possibility of choice, older patients are more prone to accept it. Nonetheless, younger patients are more susceptible to accept treatments outside Portugal. As such, there is a positive correlation between age and distance and to be treated preferentially in Portugal. Also, older patients tend to visit more often their GP, have a worsened overview about their health state and tend to spend more in health-related issues.

#### **4.2.4.3. Education**

There is a positive correlation concerning education and having a health insurance. Also, more educated patients are more prone to go outside of Portugal for treatment, have a better perception of their health state and tend to visit less their GP.

#### **4.2.4.4. Willingness to pay in order to choose**

Patients that have health insurance are more likely to be willing to pay in order to choose.

#### **4.2.4.5. GP opinion**

Patients who prefer to discuss their options with their GP are less likely to choose a private hospital. They are also more prone to prefer to be treated in Portugal. The patients that tend to seek more often the GP opinion are older patients, and their loyalty increases in proportion with their visits. However, more educated patients tend to disregard more the GP opinion.

#### **4.2.4.6. Best-fit value for choice**

Those who are willing to pay higher prices are those with insurance.

## 5. METHODOLOGY & MODEL SPECIFICATION

A large body of literature recognizes that linear regression is inappropriate when the dependent variable is categorical, especially if it is qualitative (Greene, 2000), which is the case of this study with the two dependent variables ‘willingness to pay in order to choose’ and ‘choice fees’. The appropriate theoretical model in such a situation is the ordered probit model (Greene, 2000). Over the last three decades or so these models have been widely used as a methodological framework for analyzing ordered data since the pioneering work of McKelvey and Zavoina (1975).

We considered the following Ordered Probit Model, which is built around a latent regression:

$$y^* = x'\beta + \varepsilon \quad (1)$$

Where  $y^*$  is unobserved. What is observable is:

$$\begin{aligned} y &= 0 \text{ if } y^* \leq 0 \\ y &= 1 \text{ if } 0 < y^* \leq \mu_1 \\ y &= 2 \text{ if } \mu_1 < y^* \leq \mu_2 \\ &\dots \\ y &= J \text{ if } y^* \geq \mu_{J-1} \end{aligned} \quad (2)$$

The  $\mu$ 's are unknown threshold parameters to be estimated with  $\beta$ . Threshold parameters determine the estimations for different observed value of  $y$ . These threshold parameters can be interpreted as intercepts in equation (1).

We shall consider two ordinal category dependent variables, in which respondents express their intensity of feeling that depend on some factors that can be measured and a few unobservable factors represented by  $\varepsilon$ . An ordinal scale of say 1-5 represents a spectrum of subjective feeling with 1 implying worst (or strong disagreement) and 5 proxying for best (or strong agreement). The respondents are likely to choose the option most closely representing their feeling or perception on a certain question. It is assumed that  $\varepsilon$  is normally distributed with an expected value of zero and variance of unity.

## 5.1. EXPLANATORY VARIABLES

Several factors were taken in consideration from the literature review, which allowed for the construction of this study's model. This section tries to define the reason for applying the factors shown previously in Section 4.1.2.

It is a common fact from the literature that the importance patients attach to choice differs between patient groups. According to several studies, more highly educated and younger patients (Exworthy et al., 2010; Lako et al., 2009; Rademakers et al., 2011; Burge et al., 2004; Kiiskinen et al., 2010), patients with higher incomes (Exworthy et al., 2010; Burge et al., 2004; Kiiskinen et al., 2010), and patients without an existing or satisfactory relationship with a provider (Harris, 2003; Robertson et al., 2011) make an active choice more often.

In line with these findings, patients' perceived degree of choice or ability to choose were found to be influenced positively by family income (Fotaki et al., 2008; Lambrew, 2005; Hoerger et al., 1995), health status (Lambrew, 2005) and willingness and ability to travel (Fotaki et al., 2008); and negatively by restrictions imposed by health insurers (Lambrew, 2005; Hoerger et al., 1995), age and female gender (Fotaki et al., 2008).

Despite these characteristics, findings also demonstrated that while there are some patients that actively search for providers, patients generally rely on their GP to choose for them (Dixon et al., 2010; De Groot et al., 2011; Schwartz et al., 2005; Merle et al., 2009; Plunkett et al., 2002; Lako et al., 2009; Rademakers et al., 2011) or go to the nearest provider (Exworthy et al., 2010; Varkevisser et al., 2009).

It is then important to include factors such as age, education or income (to control for heterogeneity since the two are a proxy of each other), distance, insurance, gender, GP opinion and health status.

How active patients are depends on the characteristics mentioned above, with older (Comber et al., 2004; Harris, 2003) and less highly educated patients (Groenewoud, 2008) being more likely to follow the advice of their GP. Concerning the distance of provider, studies found a positive relationship between age and the importance of distance, easy access by transport and parking facilities (Dijks-Elsinga et al., 2010; Haynes et al., 2003; Finlayson et al., 1999; Burge et al., 2004; Tai et al., 2004; Varkevisser et al., 2007), and that the specific disease (health status) also influences the

importance attached to distance (Dijns-Elsinga et al., 2010; Exworthy et al., 2010; Varkevisser et al., 2009; Damman et al., 2010; Roh et al., 2008; Roh et al., 2005). Furthermore, being more highly educated (Dijns-Elsinga et al., 2010; Robertson et al., 2011; Finlayson et al., 1999; Burge et al., 2004; Tai et al., 2004; Damman et al., 2010) and being willing to travel (Robertson et al., 2011; Exworthy et al., 2010; Magee et al., 2003) negatively influence the importance attached to distance and positively influences the decision to go abroad.

Studies also found that social influence such as the provider's general reputation and the perceived success rates (since information concerning this factor is still not widely available), the influence of someone's referring GP or the recommendations of friends and acquaintances, is an important information source (Marang-Van-De Mheen et al., 2010; Exworthy et al., 2010; Orr et al., 1998; Merle et al., 2009; McGlone et al., 2002; Shah et al., 2010), that waiting times negatively influence providers in which patients have to spend longer on waiting lists (Cheraghi-Sohi et al., 2008; Dijns-Elsinga et al., 2010; Marang-Van-De Mheen et al., 2010; Exworthy et al., 2010; Ringard et al., 2011), and that the type of institution also influences choice as well the facilities nearby for friend or family accommodation (Laamanen et al., 2010; Hirth et al., 2003; Roh et al., 2008; Roh et al., 2005; Varkevisser et al., 2010).

From the literature above, factors such as the provider's reputation, the success rates of the surgery, waiting times, distance of provider concerning treatment abroad, family/friend opinion and type of institution as well as the vicinities (accommodation) were also considered important and were included in the model.

However, concerning costs, its evidence on choice is mixed (Cheraghi-Sohi et al., 2008; Combier et al., 2004; Cooper et al., 1996; Hoerger et al., 1995; Groenewoud, 2008). Differences may be caused by whether the care provided by a certain provider is insured or not, as the cost of treatment generally only influences choice when patients also have to make payments themselves, and the transportation to and from the provider. For example, Combier et al. (2004) found that women do not take costs into account when choosing a maternity hospital because they do not have any out-of-pocket expenses, whereas research by Kiiskinen et al. (2010) indicates that patients do take out-of-pocket costs into account when choosing a dentist. On the other hand, patients' health expenditures demonstrate that while age may significantly affect costs, these cost

changes are small compared to the tripling of costs that occurs with approaching death in the last year of life (Seshamani et al., 2004).

As a result and to conclude, factors such as costs, insurance and transport were also included in the model.

## 6. RESULTS

### 6.1. WILLINGNESS TO PAY FOR CHOICE

An ordered probit estimation was conducted and the results are shown in Table 5.

**Table 5**

#### Estimation results for 'Willingness to pay for choice'

Variables	Coef.	Std. Err.
Age 16-25	-0.657	(0.380) *
Age 26-35	-0.422	(0.389)
Age 36-60	-0.440	(0.346)
Education until 9th year	1.169	(0.537) *
Education until 12th year	0.770	(0.677)
Education above 12th year	0.600	(0.538)
Gender	-0.388	(0.197) **
Health expenditures last month 0-25€	0.206	(0.367)
Health expenditures last month 25-50€	-0.206	(0.390)
Health expenditures last month 50-100€	1.242	(0.599) **
Health expenditures last month 100-150€	-0.999	(0.609)
GP opinion	0.107	(0.083)
Family/friends opinion	-0.129	(0.071) *
Time to hospital	-0.016	(0.006) **
Offered waiting less	0.270	(0.150) *
Type of hospital	0.183	(0.076) **
Insurance	-0.369	(0.198) *
Employment status	0.059	(0.059)
/cut1	-1.275	1.078
/cut2	-0.805	1.071
/cut3	0.441	1.069
/cut4	1.216	1.070

\*Significant to the 10%

\*\*Significant to the 5%

All others are insignificant

Notes: the baseline interval considered for this model dummy's' are 60+ years concerning age, higher than high school diploma for the education variable, and health expenditures above 150€ per month.

As the coefficients in the ordered probit cannot be interpreted, average marginal effects were computed. The results for the marginal effects after estimation of the model are shown in Table 6.

**Table 6****Margin effects after estimation for ‘Willingness to pay for choice’**

Variables	Price as the most important	Price as more important	Indifferent	Choice as more important	Choice as the most important
Age 16-25	-0.040 (0.026)	-0.036 (0.024)	-0.132 (0.077) *	-0.012 (0.014)	0.220 (0.126) *
Age 26-35	-0.026 (0.025)	-0.023 (0.022)	-0.085 (0.078)	-0.008 (0.010)	0.142 (0.130)
Age 36-60	-0.027 (0.023)	-0.024 (0.020)	-0.089 (0.070)	-0.008 (0.010)	0.148 (0.115)
Education until 9th year	0.071 (0.035)	0.064 (0.032)	0.236 (0.110) *	0.021 (0.018)	-0.392 (0.180) *
Education until 12th year	0.047 (0.034)	0.042 (0.031)	0.155 (0.110)	0.014 (0.015)	-0.258 (0.181)
Education above 12th year	0.037 (0.046)	0.033 (0.043)	0.121 (0.138)	0.011 (0.025)	-0.201 (0.225)
Gender	-0.024 (0.014) *	-0.021 (0.013) *	-0.078 (0.039) **	-0.007 (0.008)	0.130 (0.065) **
Health expenditures last month 0-25€	0.013 (0.023)	0.011 (0.021)	0.042 (0.074)	0.004 (0.008)	-0.069 (0.123)
Health expenditures last month 25-50€	-0.013 (0.024)	-0.011 (0.022)	-0.041 (0.079)	-0.004 (0.008)	0.069 (0.131)
Health expenditures last month 50-100€	0.076 (0.042) *	0.068 (0.039) *	0.250 (0.123) **	0.023 (0.026)	-0.417 (0.199) **
Health expenditures last month 100-150€	-0.061 (0.041)	-0.055 (0.037)	-0.201 (0.124)	-0.018 (0.022)	0.335 (0.203)
GP opinion	0.007 (0.005)	0.006 (0.005)	0.022 (0.017)	0.002 (0.002)	-0.036 (0.027)
Family/friends opinion	-0.008 (0.005)	-0.007 (0.005)	-0.026 (0.014) *	-0.002 (0.003)	0.043 (0.023) *
Time to hospital	-0.001 (0.000) **	-0.001 (0.000) **	-0.003 (0.001) **	0.000 (0.000)	0.005 (0.002) **
Offered waiting less	0.016 (0.011)	0.015 (0.010)	0.054 (0.030) *	0.005 (0.005)	-0.091 (0.049) *
Type of hospital	0.011 (0.006) *	0.010 (0.005) *	0.037 (0.015) **	0.003 (0.004)	-0.061 (0.025) **
Insurance	-0.023 (0.014)	-0.020 (0.013)	-0.074 (0.039) *	-0.007 (0.007)	0.124 (0.065) *
Employment status	0.004 (0.004)	0.003 (0.003)	0.012 (0.012)	0.001 (0.002)	-0.020 (0.020)
Probabilities	0.37%	1.64%	3.50%	20.77%	73.72%

\*Significant to the 10%

\*\*Significant to the 5%

All others are insignificant

Notes: the baseline interval considered for this model dummy's' are 60+ years concerning age, higher than high school diploma for the education variable, and health expenditures above 150€ per month.

Patients ranging from 16 to 25 years have a 22% probability of falling in the highest category for choice versus the baseline age interval, which means that choice is very important for younger patients and that these are willing to pay for choice, which is consistent with previous findings (Exworthy et al., 2010; Lako et al., 2009; Rademakers et al., 2011; Burge et al., 2004; K iskinen et al., 2010). Concerning the level of education, having at least 9 years of education means a 39.2% probability of not falling in the highest category compared to the baseline education interval, indicating strong sensibility to price for less educated patients and hence being less willing to pay to for choice. Nonetheless, there is also evidence that patients with at least 9 years of education do not resign on choice since there is a 23.6% chance that they would only be indifferent. This is also consistent with the literature (Exworthy et al., 2010; Lako et al., 2009; Rademakers et al., 2011; Burge et al., 2004; K iskinen et al., 2010). Education also works as a proxy for income due to collinearity (Conlisk, 1971), and because there



were fewer data concerning patients' income, which after estimation of several alternative models became evident that education was more fit in the model. Female patients, on the contrary, are more willing to pay as they have a 13% probability of falling into the highest category for choice, indicating that males are the ones that are less willing to pay. Concerning health expenditures, which are a good proxy for health status, for the 3<sup>rd</sup> level out of 5 representing expenditures from 50€ to 100€ per month (maximum of 150€ to 200€, the baseline interval), there is strong indication (41.7%) that for this intermediate category of expenditure patients are severely concerned with prices, meaning that when patients spend from 50€ to 100€ in a month, they are 42% less likely to consider choice as the most important, compared to the baseline interval, as consistent with findings by Lambrew (2005). Health expenditures have been used in contrast to health state itself due to more significant results in the model. Regarding the family or friend opinion, patients that regard this factor as important are more likely to fall into the highest category with 4.3%, meaning that when patients care about their family or friends' opinion, they are more willing to pay for choice. This emphasizes the importance of references and generalized perceived quality, as previously found by Groenwoud (2008) and Dealey (2005). Similarly, as the time to get to their hospital increases, patients are more willing to pay and value choice as the most important factor. However, they still value price as important. Concerning the waiting times, patients are willing to pay in order to wait less, although there is evidence that price is more important with a 9.1% probability of not considering choice as the most important factor. The same is observable for the type of hospital, indicating willingness to pay for choice when type of hospital is important but also considering price as an important factor with a 6.1% probability of not falling into the highest category for choice. However, the impact that waiting times, distance and type of hospital produce is quite small compared to age, education and gender. Concerning health insurance, those who have some kind of insurance are more likely to consider choice as more important, as there is a 12.4% probability of falling in the highest category, meaning that patients that have some type of insurance are more willing to pay to choose.

## 6.2.CHOICE FEE BEST-FIT VALUE

An ordered probit estimation was conducted and the results are shown in Table 7.

**Table 7**

### Estimation results for ‘Choice fee best-fit value’

Variables	Coef.	Std. Err.	
Age 16-25	0.584	(0.331)	*
Age 36-60	0.453	(0.334)	
Education until 4th year	-1.730	(0.837)	**
Education until 9th year	1.248	(0.685)	*
Female	-0.450	(0.258)	*
Health expenditures last year 0-50€	1.017	(0.329)	***
Health expenditures last year 200-500€	1.789	(0.365)	***
Health expenditures last year 500-1000€	1.194	(0.426)	***
Time to hospital	-0.019	(0.011)	*
Offered waiting less	-0.411	(0.239)	*
Overall costs	0.254	(0.095)	***
Insurance	-0.685	(0.262)	***
Type of hospital	-0.253	(0.112)	**
GP opinion	0.241	(0.117)	**
Free transportation to and from provider	-0.479	(0.125)	***
High success rate for surgery	-1.005	(0.357)	***
Treatment in Portugal	0.224	(0.114)	*
Close accommodation for family/friend	0.285	(0.137)	**
/cut1	-9.654	(2.230)	
/cut2	-6.630	(2.015)	
/cut3	-5.415	(1.994)	

\*Significant to the 10%

\*\*Significant to the 5%

\*\*\*Significant to the 1%

Note: some variables (e.g. ages from 60 plus years or higher education levels) were not included in the final estimation, after several alternative models were estimated and they were found to be insignificant. Too many variables would compromise the degrees of freedom for relatively small samples. Nonetheless, all the variables that were significant were included in the estimation procedure.

As the coefficients in the ordered probit cannot be interpreted, an average marginal effects estimation was computed. The results for the marginal effects after estimation of the model are shown in Table 8.

**Table 8****Marginal effects after estimation for ‘Choice fee best-fit value’**

Variables	No choice			Minimum fee			Medium fee			Maximum fee		
Age 16-25	0.026	(0.016)	*	0.124	(0.071)	*	-0.035	(0.024)	-0.115	(0.064)	*	
Age 36-60	0.020	(0.016)		0.096	(0.070)		-0.027	(0.022)	-0.089	(0.065)		
Education until 4th year	-0.077	(0.040)	*	-0.366	(0.179)	**	0.103	(0.058)	*	0.340	(0.163)	**
Education until 9th year	0.055	(0.034)		0.264	(0.143)	*	-0.074	(0.047)		-0.245	(0.133)	*
Female	-0.020	(0.013)		-0.095	(0.053)	*	0.027	(0.017)		0.088	(0.051)	*
Health expenditures last year 0-50€	0.045	(0.019)	**	0.215	(0.067)	***	-0.060	(0.025)	**	-0.200	(0.064)	***
Health expenditures last year 200-500€	0.079	(0.028)	***	0.378	(0.067)	***	-0.106	(0.039)	***	-0.351	(0.063)	***
Health expenditures last year 500-1000€	0.053	(0.023)	**	0.253	(0.090)	***	-0.071	(0.034)	**	-0.235	(0.081)	***
Time to hospital	-0.001	(0.001)		-0.004	(0.002)	*	0.001	(0.001)	*	0.004	(0.002)	*
Offered waiting less	-0.018	(0.011)		-0.087	(0.050)	*	0.024	(0.015)		0.081	(0.047)	*
Overall costs	0.011	(0.005)	**	0.054	(0.020)	***	-0.015	(0.007)	**	-0.050	(0.018)	***
Insurance	-0.030	(0.014)	**	-0.145	(0.053)	***	0.041	(0.019)	**	0.135	(0.051)	***
Type of hospital	-0.011	(0.006)	**	-0.053	(0.024)	**	0.015	(0.009)	*	0.050	(0.021)	*
GP opinion	0.011	(0.006)	*	0.051	(0.024)	**	-0.014	(0.008)	*	-0.047	(0.023)	*
Free transportation to and from provider	-0.021	(0.008)	***	-0.101	(0.025)	***	0.028	(0.011)	**	0.094	(0.023)	***
High success rate for surgery	-0.045	(0.020)	**	-0.213	(0.074)	***	0.060	(0.028)	**	0.197	(0.068)	***
Treatment in Portugal	0.010	(0.006)	*	0.047	(0.024)	**	-0.013	(0.008)	*	-0.044	(0.022)	**
Close accommodation for family/friend	0.013	(0.006)	*	0.060	(0.030)	**	-0.017	(0.010)	*	-0.056	(0.027)	**
Probabilities	0.13%			50.08%			38.68%			11.11%		

\*Significant to the 10%

\*\*Significant to the 5%

\*\*\*Significant to the 1%

All others are insignificant

Note: some variables (e.g. ages from 60 plus years or higher education levels) were not included in the final estimation, after several alternative models were estimated and they were found to be insignificant. Too many variables would compromise the degrees of freedom for relatively small samples. Nonetheless, all the variables that were significant were included in the estimation procedure.

Younger patients from 16 to 25 years are 12.4% more inclined towards paying the minimum price compared to older patients. As expected though from the literature (Lambrew, 2005), as the choice fee increases, younger patients who are more price-sensitive are 11.5% less prone to accept to pay the highest price. Concerning the level of education, patients who didn't attend school or that have a maximum of 4 years of education are 34% more willing to pay the highest fee. As the level of education rises though, patients tend to be less inclined towards paying higher prices. Having at least 9 years of education means a 26.4% probability of fitting in the minimum value of choice fee, and a negative probability of 24.5% to pay the maximum value. In relation to gender, being female increases the probability by 8.8% of paying the highest price. On

the contrary, the probability of paying the maximum value decreases as health expenditures increase, but generally healthier patients are less likely to be willing to pay higher prices, although the probabilities are similar to each level of expenditures. Concerning distance, as the time to get to the hospital increases, so does the willingness to pay the maximum value, although by almost insignificant values of 0.4% per minute. Also, as expected (Exworthy et al., 2010; Ringard et al., 2011), as the waiting times for surgery increase, so does the willingness to pay the maximum value by 8.1%. Also expected (Käiskinen et al., 2010) are the overall costs, as the willingness to pay higher prices decreases as overall costs increase. In relation to insurance though, those who have some type of insurance are more prone to accept to pay higher prices, with a 13.5% probability of choosing to pay the maximum value. Type of hospital also influences the willingness to pay as its importance increases, meaning that those who don't care about the type of hospital are less inclined towards paying higher prices. GP opinion, on the contrary, is less important for patients who are willing to pay higher prices. Concerning the importance attached to the free transport provided to and from the provider, as the importance increases the willingness to pay higher prices increases as well, meaning that patients are willing to pay higher prices provided that they have free transport. Also as expected (Cheraghi-Sohi et al., 2008; Dijs-Elsinga et al., 2010; De Groot et al., 2011; Groenwoud, 2008b; Groenwoud, 2008d; Damman et al., 2010), the success rates of the surgery are also important since patients are willing to pay the maximum value for higher success rates by 19.7%. When patients are offered treatment abroad, they are more inclined towards paying higher prices for that end, meaning that as the willingness to go abroad increases, so does the willingness to pay. Lastly, patients that attach less importance to the provider's vicinities for close accommodation of a family member or friend are also more willing to pay, which means that patients that care about the vicinities are less likely to accept higher fees.

## 7. CONCLUSIONS

This study had three main objectives:

Objective 1 was *'to identify the determinants of choice to be able to predict the variation in demand for the services of particular providers on the basis of the relevant characteristics of the health care providers on offer'*.

Understanding the determinants of patients' choice of provider is crucial for two reasons.

First, the willingness of patients to choose non-local providers with lower waiting times or higher quality will be a key factor behind the success of this measure by increasing providers' efficiency. Understanding what factors are more important to patients in opting for alternative providers will help the Department of Health to better understand ways to increase providers' efficiency and quality. Second, understanding how patients respond to specific hospital characteristics will enable the demand for specific hospitals, and patient flows between providers, to be predicted. That is, in the real world, while providers will experience changes in the flows of patients as a result of choice, such changes do not help in understanding why patients have made their choices, and hence indicate what providers can or cannot do in order to respond efficiently to the crude switching signal. This is information both of key interest to individual providers, and also to the Health Department in planning capacity.

The principal information to address these issues derives from the statistical results. It is important to first discuss the patients' 'views on choice'. In Figure 1, about how patients regard choice, it is clearly noticeable that choice is mostly considered in this sample as very important. Another interesting evidence from the statistics alone is that, as observable in Figure 2, according to this sample, most patients would take on the offer to change providers if granted that opportunity. However, this is only hypothetical and it should not be regarded as guaranteed, as it has been proven that stated preferences may differ from reality (Victoor et al., 2012). It means, though, that patients are open to the possibility of choosing another provider. Concerning the determinant factors on choice, the rating exercises on the questionnaire proved to be quite useful. From Figures 5 and 6, we are able to observe the most important features on patients' views. As expected, clinical outcomes and shorter waiting times are amongst the most important

determinants, and surprisingly distance is one of the least important, indicating willingness to travel hence creating better conditions for choice itself. This could potentially lead to better outcomes in providers if they take these ratings in consideration, and work on improving such features to be chosen in the future. Also from Figures 5 and 6, it is observable that practical considerations were less important to the survey respondents, and that the type of hospital was ranked the least important of the factors.

According to Objective 2, we intended to provide the basis *'to compare uptake of choice between different patients in terms of health, socio-economic, socio-demographic or other characteristics.'*

If there are differences between different types of patients in their willingness to choose higher quality or shorter wait providers, it may affect the equity of outcomes from patient choice policies.

To assess if there are differences in the willingness to choose, some graphics may be obtained from the sample that illustrate these variances, observable in Appendix A. Concerning the Willingness to pay for choice, comparing the effect of price with the importance of choice, one can find that differences in age do not produce significant changes in the willingness to pay (Figure 7); that education can influence decision in the lowest levels, as price is more important for those than for the 'better-off' (Figure 8); that healthier patients tend to regard choice as more important (Figure 9); that as the health expenditures increase, the willingness to pay decreases (Figure 10); that patients with a higher income are generally more willing to pay to choose (Figure 11); and that employed patients are also more willing to pay (Figure 12).

Also from the econometric models it is possible to observe that age and education are factors that can influence decision, as older and less educated patients are less likely to choose, although more willing to pay higher prices.

It is then concluded that for this sample there are some differences, although small, regarding socio-economic characteristics. Nonetheless, these differences may be mitigated by applying the same method used for the user fees as previously mentioned in this study.

Regarding Objective 3, concerning the willingness to pay, this work tried to assess and *'gauge the likelihood of the uptake of choice when patients are confronted by a fee to exercise the choice and what would be the maximum value that patients would be willing to pay in order to choose.'*

In this sample, the majority is willing to pay a fee as observable in Figure 3, since 61% said that they would be willing to pay an extra payment to be able to choose, whereas only 3% said that they would prefer not having the possibility of choice. Also from the statistics only and in Figure 4, it is perceptible that the majority would be willing to pay a price in order to choose. That price varies consistently: the higher the price, the fewer are the patients that are willing to pay. In order to define the best-fit value, econometric models had to be resorted.

The final models provided the best 'fit' to explain the results obtained from the survey, with Table 5 relating to the 'Willingness to pay for choice' to address the first issue and Table 7 relating to the 'Best-fit value for the choice fee' to assess the best fee for this sample.

Although the two models differ slightly in the composition of the variable groups, these included factors that relate to the particular characteristics of the hospitals and patients, the travel modes and costs, the GP or family/friends advice and a group of outcome and structural parameters (such as success rates or type of hospital). Patient characteristics included factors such as age, education, gender and employment and health status.

Below we examine and interpret the model's findings for each of these variable groups.

For the dependent variable 'Willingness to pay for choice', the significant variables in the model were the patient's age from 16 to 25 years, patients who had at least 9 years of school, gender (female), health expenditures as a proxy for health status, family or friends opinion, the time to get to the hospital, waiting times, type of hospital and health insurance. The results were as expected from the literature review, in which patients were found to value choice as very important, but also to consider price as an important factor. The most influential factors in determining the willingness to pay are age, education level, gender, health status, waiting times, and health insurance. Patients that are between the ages of 16 to 25, are female, that consider factors such as the opinion of family or friends and distance to be important and that are insured, are the ones that

consider choice as the most important compared to price and hence are more willing to pay in order to choose. Those who spend from 50€ to 100€ monthly in health-related issues and consider type of hospital as important are the ones that consider price as the most important feature and hence are less willing to pay.

For the dependent variable 'Best-fit value for the choice fee', the significant variables in the model are the patients' age from 16 to 25 years, all education levels until 9 years of school, gender (female), health expenditures from 0€ to 1000€ on an annual basis, distance, waiting times, overall costs, health insurance, type of hospital, GP opinion, free transportation to and from the provider, success rates of the surgery, treatment in Portugal or abroad and the provider's vicinities for close accommodation of friends or family. The results were once more as expected from the literature review. The most influential variables are age, education, health expenditures (as proxy for health status), insurance and success rates (as proxy for hospital reputation). From this model, it is concluded that the best-fit value would be the minimum proposed in the questionnaire, as the highest probability falls into this category (50.1%), which represents an additional value that is less than or equal to the user fee. The ones that are more willing to pay the highest price are patients older than 25 years, that are less educated, females, that take more time to get to their home hospital, that want to wait less, are insured, and that consider type of hospital, free transport and the success rates as important. As such, to increase the probability of raising the choice fees, the Government would have to provide free transport to and from the hospital and provide information concerning waiting times and success rates.



## **8. STUDY LIMITATIONS AND FURTHER RESEARCH**

This research project has provided considerable insights into the individual choice behavior that may result from increased patient choice and the Willingness to pay for choice. However, the sample of 220 respondents with a complete set of answers of 194 is rather small and may not correctly predict such behaviors or willingness to pay on a national level. As such, through the course of this research a number of additional areas have been identified that would benefit from further research, and potential extensions to the current model that could provide additional insights for the Health Department.

### **8.1. DEVELOPMENT OF A FORECASTING APPLICATION**

The demand models that has been developed illustrate the value that people place on different types of information (distance, waiting times, type of hospital, etc.), and how different groups of patients may behave under increased choice. By increasing the data set and getting data on a national level it is possible to apply this model to produce forecasts of the underlying demand for different hospitals under a range of assumptions.

The model could be implemented within an Excel environment to provide the Department of Health, or local trusts with a user-friendly forecasting tool, since Government Authorities involved in the pilot study have demonstrated interest in such a project implementation. Such a tool could be set up to allow the user to define the base situation assumptions and forecasting scenarios which they wished to test, outputting graphs and tables of the predicted demand under each scenario. Such interfaces have previously proved to be useful as they allow a policy maker to obtain illustrative forecasts to compare a range of policy interventions (Burge et al., 2006). As well as aggregate level forecasts, it would be possible to present breakdowns to illustrate the likely behavior of different demographic groups and their willingness to pay considering a range of values to choose the best-fit and more appropriate price set. It is important to note that the current model is based entirely on stated preference data. Should the department wish to use such model for producing robust forecasts, it would be of outmost value to collect revealed preference data, although that would require that patient choice would be implemented. An initial screening study could be assessed for a set of patients waiting for more than 6 months for a given surgery for example, and conduct the research with the revealed preferences from that study. Below we examine further possibilities from revealed preferences.

## **8.2.COLLECTION AND INTEGRATION OF REVEALED PREFERENCE DATA**

Whilst stated preferences are a valid approach, and informative, it would be beneficial to collect real-world revealed preference data on choice behavior. Such data would complement the stated preference data used within the existing model and would provide further insights into how patients made their choices when faced with real choices between providers, and provide real data to be used in assessing the best-fit value for the choice fees.

As recommended in section 3.3. it would be possible to introduce choice for a given set of patients that meet certain requirements, instead of making choice available for every patient at the beginning. For example, introducing choice for hip replacement surgeries when patients have to wait for 6 or more months. This would also allow for a better capacity planning and controlled patient flows.

Revealed preference data is therefore strongly recommend, with the recording of information both on the alternatives offered and the choices made. Such data could then be integrated into the same discrete choice framework as the stated preference data and used to estimate an improved choice model. This is particularly important if the model is to be used for forecasting as at present the sensitivity of switching between the local and alternative providers is based solely on hypothetical choice data, and the model would certainly benefit from the incorporation of observations of the choices that patients exercise in real choice scenarios.

## **8.3.FURTHER EXAMINATION OF SOCIAL GRADIENT OF CHOICE**

There are two approaches that could be used to further investigate this issue. The first approach would be to take the existing model with a greater data set and apply it in a forecasting mode, whilst identifying each individual within the sample enumeration procedure by socioeconomic group. This approach utilizes the fact that there is correlation between the variables of interest within the sample, such as income or level of education. The outputs from these forecasts could be used to illustrate how the various factors within the model (e.g. level of education, rating of health) add up to influence the overall likelihood of individuals in different social groups choosing to stay

at the local hospital or move to an alternative provider under a range of scenarios, as well as their willingness to pay.

The second approach would be to revisit the model estimation. Here it would be possible to create composite terms that identify particular groups of respondents of interest within the sample by applying several different characteristics simultaneously. The fit of the model for these groups could then be re-examined, and if appropriate, additional terms could be added to explain particular differences in valuation or choice behavior observed. Either of these approaches would provide additional insight into the existence of a social gradient, and could be used to provide a first estimate from stated preference data of the likely magnitude of any effect.

## REFERENCES

ACSS. 2012. **User fees**. Available in [www.acss.min-saude.pt](http://www.acss.min-saude.pt) (2012/11/11; 15H 05M).

Akin J, Birdsall N, de Ferranti D. 1987. **Financing health services in developing countries: an agenda for reform**. World Bank Policy Study. Washington, DC: the World Bank, 1987.

Appleby J, Harrison A, Devlin N. 2003. **What is the Real Cost of More Patient Choice**. The King's Fund

Barros, P., Machado, S., Simões, J. 2011. **Portugal: Health system review**. Health Systems in Transition, 13(4):1–156.

Bloom, N. and Van Reenen, J. 2007. **Measuring and explaining management practices across firms and nations**. Quarterly Journal of Economics, 122(4):1351{1408.

Bloom, N., Propper, C., Seiler, S., Van Reenen, J. 2010. **Management practices in the NHS**. CentrePiece, winter 2009/10.

Buchmueller T. 2009. **Consumer-Oriented Health Care Reform Strategies: A Review of the Evidence on Managed Competition and Consumer-Directed Health Insurance**. Milbank Quarterly Volume 87, Issue 4, pages 820–841.

Burge P, Devlin N, Appleby J, Gallo F, Nason E, Ling T. 2006. **Understanding Patients' Choices at the Point of Referral**. Cambridge: Rand Europe

Burge P, Devlin N, Appleby J, Rohr C, Grant J. 2004. **London Patient Choice Project: A model of patients' choices of hospital from stated and revealed preference choice data**. RAND Corporation, the King's Fund, and City University

Burge P, Devlin N, Appleby J, Rohr C, Grant J. 2005. **Do patients always prefer quicker treatment? A discrete choice analysis of patients' stated preferences in the London Patient Choice Project**. Appl Health Econ Health Policy, 3:183–194.

Cameron A, Trivedi P. 2009. **Microeconometric Using Stata**. A Stata Press Publication. Stata Corp LP. College Station, Texas.

Cheraghi-Sohi S, Hole A, Mead N, McDonald R, Whalley D, Bower P, et al. 2008. **What patients want from primary care consultations: a discrete choice experiment to identify patients' priorities**. Annals of Family Medicine, 6:107–115.

Chernew M, Shah M, Wegh A, Rosenberg S, Juster I, Rosen A, Sokol M, Yu-Isenberg K, Fenrick A. 2008. **Impact Of Decreasing Copayments On Medication Adherence Within A Disease Management Environment**. Health Aff January vol. 27 no. 1 103-112

Combiér E, Zeitlin J, de Courcel N, Vasseur S, Lalouf A, Amat-Roze J, et al. 2004. **Choosing where to deliver: decision criteria among women with low-risk pregnancies in France**. Soc Sci Med, 58:2279–2289.

Cookson R, Laudicella M, Li Donni P. 2011. **Did increased competition undermine socio-economic equity in hospital care in the English National Health Service from**

**2003 to 2008? Panel analysis of small area administrative data.** Paper presented at Health Economists Study Group Meeting, York, 5–7 January 2011.

Conslik , J. 1971. **A bit of evidence on the Income-Education-Ability interrelation.**The Journal of Human Resources. Vol. 6, No. 3 pp. 358-362.

Cooper PF, Nichols LM, Taylor AK. 1996. **Patient choice of physician: do health insurance and physician characteristics matter?** Inquiry, **33**:237–246.

Cooper, Z., Gibbons, S., Jones, S., and McGuire, A. 2011. **Does hospital competition save lives: Evidence from the English NHS patient choice reforms.** Economic Journal 121,228-260

Cooper, Z., Gibbons, S., Jones, S., and McGuire, A. 2012. **Does Competition Improve Public Hospitals' Efficiency? Evidence from a Quasi-Experiment in the English National Health Service.** CEP Discussion Paper No 1125

Damman O, Hendriks M, Rademakers J, Spreeuwenberg P, Delnoij D, Groenewegen P. 2010. **Consumers' interpretation and use of comparative information on the quality of healthcare: the effect of presentation approaches.** In Public reporting about healthcare users' experiences. Edited by. Utrecht: NIVEL; 2010:109–128.

De Groot I, Otten W, Smeets H, Marang-van de Mheen P. 2011. **Is the impact of hospital performance data greater in patients who have compared hospitals?** BMC Health Serv Res, **11**:214–224.

Decree Law n.º 113/2011 (2011.Nov.29) **DIÁRIO DA REPÚBLICA:** 1ª série n.º 229 pp 5108-5110

Deloitte. 2011. **Saúde em Análise: Uma Visão para o Futuro.**Public Sector, Life Sciences & Healthcare 2011

Dijs-Elsinga J, Otten W, Versluijs M, Smeets H, Kievit J, Vree R, et al. 2010. **Choosing a hospital for surgery: the importance of information on quality of care.** Med Decis Making, 30:544.

Dixon A, Robertson R, Appleby J, Burge P, Devlin N, Magee H. 2010. **Patient Choice: How Patients Choose and How Providers Respond.** Kings Fund: London.

Dixon A, Robertson R, Baal R. 2009. **The experience of implementing choice at point of referral: a comparison of the Netherlands and England.** Health Economics, Policy and Law.

Dranove, D., D. and Satterthwaite., M.A. 1992. **Monopolistic competition when price and quality are imperfectly observable.** Rand Journal of Economics, 23(4):518{534.

Eaddy M, Cook C, O'Day K, Burch S, Cantrell C. 2012. **How Patient Cost-Sharing Trends Affect Adherence and Outcomes.** P T. 2012 January; 37(1): 45–55. PMID: PMC3278192

Exworthy M, Peckham S. 2010. **Access, Choice and Travel: Implications for Health Policy.** Social Policy & Administration, **40**:267–287.

Faber M, Bosch M, Wollersheim H, Leatherman S, Grol R. 2009. **Public reporting in health care: How do consumers use quality-of-care information? A systematic review.** *Med care*, **47**:1–8.

Fasolo B, Reutskaja E, Dixon A, Boyce T. 2010. **Helping patients choose: How to improve the design of comparative scorecards of hospital quality.** *Patient Educ Couns*, **78**:344–349.

Finlayson S, Birkmeyer J, Tosteson A, Nease R. 1999. **Patient preferences for location of care, implications for regionalization.** *Med Care*, **37**:204–209.

Foster MM, Earl PE, Haines TP, Mitchell GK. 2010. **Unravelling the concept of consumer preference: implications for health policy and optimal planning in primary care.** *Health Policy*, **97**:105–112.

Fotaki M, Roland M, Boyd A, McDonald R, Scheaff R, Smith L. 2008. **What benefits will choice bring to patients? Literature review and assessment of implications.** *J Health Serv Res Policy*, **13**:178–184.

Fung C, Elliott M, Hays R, Kahn K, Kanouse D, McGlynn E, et al. 2005. **Patients' preferences for technical versus interpersonal quality when selecting a primary care physician.** *Health Serv Res*, **40**:957–977.

Gaynor, M., Moreno-Serra, R., and Propper, C. 2010. **Death by market power: Reform, competition and patient outcomes in the British National Health Service.** Unpublished manuscript, Carnegie Mellon University, Imperial College.

Gertler, P.; Gaag, J. van der. 1990. **The willingness to pay for medical care: evidence from two developing countries.** ISBN 0-8018-4146-1. Record Number 19911888496

Greene, W. 2002. **Econometric Analysis.** New York University

Groenewoud AS. 2008. **What Influences Patients' Decisions when Choosing a Health Care Provider? Measuring Preferences of Patients with Knee Arthrosis, Chronic Depression or Alzheimer's Disease, using Discrete Choice Experiments.** Rotterdam: Erasmus Universiteit Rotterdam; 2008:217–244. PhD thesis.

Grytten J, Sorensen RJ. 2009. **Patient choice and access to primary physician services in Norway.** *Health Economics, Policy and Law* 2009, **4**:11–27.

Harris KM. 2003. **How do patients choose physicians? Evidence from a national survey of enrollees in employment-related health plans.** *BMC Health serv res*, **38**:711–732.

Haynes R, Lovett A, Sünnerberg G. 2003. **Potential accessibility, travel time and consumer choice: geographical variations in general medical practice registrations in Eastern England.** *Environment and Planning A*, **35**:1733–1750.

Hibbard J, Greene J, Daniel D. 2010. **What is quality anyway? Performance reports that clearly communicate to consumers the meaning of quality of care.** *Med Care Res Rev*, **67**:275–293.

Hibbard J, Slovic P, Jewett J. 1997. **Informing consumer decisions in health care:**

**implications from decision making research.** *Milbank Q*, 75:395–414.

Hirschman AO. 1970. **Exit, Voice, and Loyalty: Responses to Decline in Firms, Organizations, and States.** Cambridge, MA: Harvard University Press.

Hirth RA, Banaszak-Holl JC, Fries BE, Turenne MN. 2003. **Does Quality Influence Consumer Choice of Nursing Homes? Evidence from Nursing Home to Nursing Home Transfers.** *Inquiry*, 40:343–361.

Hoerger T, Howard L. 1995. **Search behavior and choice of physician in the market for prenatal care.** *Med Care*, 33:332–349.

INE. 2010. **Conta satélite da saúde [National health accounts].** Lisbon, National Statistics Institute.

INSA. 2007. **4th National Health Survey – 2005/2006.** Lisbon, National Institute of Health Dr Ricardo Jorge.

Kiiskinen U, Suominen-Taipale AL, Cairns J. 2010. **Think twice before you book? Modelling the choice of public vs private dentist in a choice experiment.** *Health Econ*, 19:670–682.

Kolstad JT, Chernew ME. 2009. **Quality and consumer decision making in the market for health insurance and health care services.** *Med Care Res Rev*, 66:28S–52S.

Kooreman P, Prast H. 2010. **What does behavioral economics mean for policy? Challenges to savings and health policies in the Netherlands.** *The Economist*, 158:101–122.

Laamanen R, Simonsen-Rehn N, Suominen S, Brommels M. 2010. **Does patients' choice of health centre doctor depend on the organization? A comparative study of four municipalities with different forms of service provision in Finland.** *Scand J Public Health*, 38:715–723.

Lako CJ, Rosenau P. 2009. **Demand-Driven Care and Hospital Choice. Dutch Health Policy Toward Demand-Driven Care: Results from a Survey into Hospital Choice.** *Health Care Anal*, 17:20–35.

Lambrew JM. 2005. **"Choice" in health care: what do people really want?** Issue Brief (Commonw Fund), 853:1–12.

Law n.º 27/2002 (2002.Nov.08) **DIÁRIO DA REPÚBLICA:** 1ª SÉRIE-A n.º 258 pp 7150-7154

Magee H, Davis LJ, Coulter A. 2003. **Public views on healthcare performance indicators and patient choice.** *J R Soc Med*, 96:338–342.

Marang-Van-De Mheen PJ, Dijks-Elsinga J, Otten W, Versluijs M, Smeets HJ, Van der Made WJ, et al. 2010. **The importance of experienced adverse outcomes on patients' future choice of a hospital for surgery.** *Qual Saf Health Care*, 19:1–6.

Marang-Van-De-Mheen P, Dijks-Elsinga J, Otten W, Versluijs M, Smeets H, Vree R, et al. 2010. **The relative importance of quality of care information when choosing a hospital**

**for surgical treatment: a hospital choice experiment.** Med Decis Making, Epub ahead of print.

Mavis B, Vasilenko P, Schnuth R, Marshall J, Jeffs MC. 2005. **Female patients' preferences related to interpersonal communications, clinical competence, and gender when selecting a physician.** Acad Med, **80**:1159–1165.

McGlone TA, Butler ES, McGlone VL. 2002. **Factors influencing consumers' selection of a primary care physician.** Health Mark Q, **19**:21–37.

McKelvey, R. and W. Zavoina, 1975. **A Statistical Model for the Analysis of Ordered Level Dependent Variables.** Journal of Mathematical Sociology, **4**, 103-20

Merle V, Germain JM, Tavolacci MP, Brocard C, Chefson C, Cyvoct C, et al. 2009. **Influence of infection control report cards on patients' choice of hospital: pilot survey.** J Hosp Infect, **71**:263–268.

Moser A, Korstjens I, van der Weijden T, Tange H. 2010. **Themes affecting health-care consumers' choice of a hospital for elective surgery when receiving web-based comparative consumer information.** Patient Educ Couns, **78**:365–371.

National Health Service. 2006. **NHS Choose and Book website:**  
<http://www.chooseandbook.nhs.uk>

OECD, 2010. **OECD Health Data 2012** [online database]. Paris, Organisation for Economic Co-operation and Development.

Orr D, Sidiki SS, McGhee CN. 1998. **Factors that influence patient choice of an excimer laser treatment center.** J Cataract Refract Surg, **24**:335–340.

Parente ST, Feldman R, Christianson JB. 2004. **Evaluation of the Effect of a Consumer-Driven Health Plan on Medical Care Expenditures and Utilization.** BMC Health Serv Res, **39**:1189–1210.

Peters E, Dieckmann NF, Västfjäll D, Mertz C, Slovic P, Hibbard J. 2009. **Bringing meaning to numbers: the impact of evaluative categories on decisions.** J Exp Psychol Appl, **15**:213–227.

Plunkett B, Kohli P, Milad M. 2002. **The importance of physician gender in the selection of an obstetrician or a gynecologist.** Am J Obstet Gynecol, **186**:926–928.

Propper, C. 2012. **Competition, Incentives and The English NHS.** Health Economics, **21**:33-40

Propper, C., Burgess, S., Gossage, D. 2008. **Competition and quality: evidence from the NHS internal market 1991–9.** The Economic Journal, vol 118, no 525, pp 138–70.

Rademakers J, Delnoij D, de Boer D. 2011. **Structure, process or outcome: which contributes most to patients' overall assessment of healthcare quality?** BMJ Quality and Safety, **20**:326–331.

Ringard A, Hagen TP. 2011. **Are waiting times for hospital admissions affected by patients' choices and mobility?** BMC Health Serv Res, **11**:170–178.



- Robertson R, Burge P. 2011. **The impact of patient choice of provider on equity: Analysis of a patient survey.** *J Health Serv Res Policy*, **16**:22–28.
- Roh C, Moon M. 2005. **Nearby, but not wanted? the bypassing of rural hospitals and policy implications for rural health care systems.** *The Policy Studies Journal*, **33**:377–394.
- Roh CY, Lee KH, Fottler MD. 2008. **Determinants of hospital choice of rural hospital patients: The impact of networks, service scopes, and market competition.** *J Med Syst*, **32**:343–353.
- Schut F, Greß S, Wasem J. 2003. **Consumer Price Sensitivity and Social Health Insurer Choice in Germany and the Netherlands.** *International Journal of Health Care Finance and Economics* Volume 3, Number 2 (2003), 117-138, DOI: 10.1023/A:1023369231291
- Schwartz L, Woloshin S, Birkmeyer J. 2005. **How do elderly patients decide where to go for major surgery? Telephone interview survey.** *BMJ*, **331**:821–827.
- Seiler, S. 2011. **Essays in Industrial Organization and Health Economics.** London School of Economics, Department of Economics, PhD dissertation, August 2011
- Seshamani M, Gray A. 2004. **Ageing and health-care expenditure: the red herring argument revisited.** *Health Economics*. Volume 13, Issue 4, pages 303–314. DOI: 10.1002/hec.826.
- Shah J, Dickinson CL. 2010. **Establishing which factors patients value when selecting urology outpatient care.** *British Journal of Medical and Surgical Urology*, **3**:25–29.
- Strombom BA, Buchmueller TC, Feldstein PJ. 2002. **Switching costs, price sensitivity and health plan choice.** *Journal of Health Economics*, **21**(1):89-116.
- Tai W, Porell F, Adams E. 2004. **Hospital choice of rural Medicare beneficiaries: patient, hospital attributes, and the patient-physician relationship.** *BMC Health Serv Res*, **39**:1903–1922.
- Varkevisser M, van der Geest S, Schut F. 2009. **Quality competition in regulated hospital markets: consumer information and patient choice for angioplasty.** In *Patient choice, competition and antitrust enforcement in Dutch hospital markets*. Rotterdam: Erasmus Universiteit Rotterdam; 2009:117–149.
- Varkevisser M, van der Geest S. 2007. **Why do patients bypass the nearest hospital? An empirical analysis for orthopaedic care and neurosurgery in the Netherlands.** *Eur J Health Econ*, **8**:287–295.
- Varkevisser M, van der Geest SA, Schut FT. 2010. **Assessing hospital competition when prices don't matter to patients: the use of time-elasticities.** *Int J Health Care Finance Econ*, **10**:43–60.
- Victoor A, Delnoij D, Friele R, Rademakers J. 2012. **Determinants of patient choice of healthcare providers: a scoping review.** *BMC Health Services Research* 2012, **12**:272 doi:10.1186/1472-6963-12-272

Vrangbaek K, Robertson R, Winblad U, Van de Bovenkamp H, Dixon A. 2012. **Choice policies in Northern European health systems**. Health Econ Policy Law, 7:47–71.

## **APPENDIX A: SOCIAL GRADIENT IN CHOICE**

Figure 7

Choice vs. age

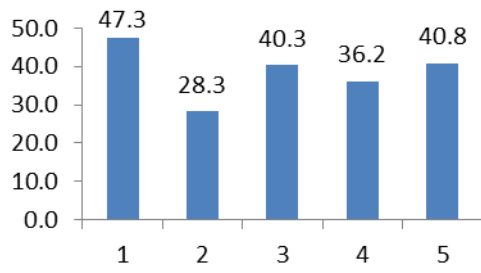


Figure 8

Choice vs. education

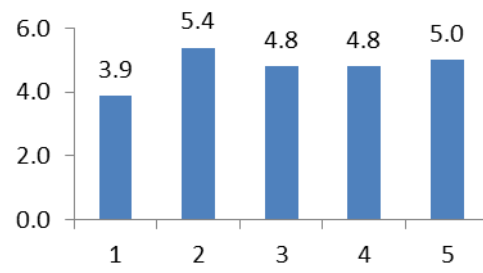


Figure 9

Choice vs. health state

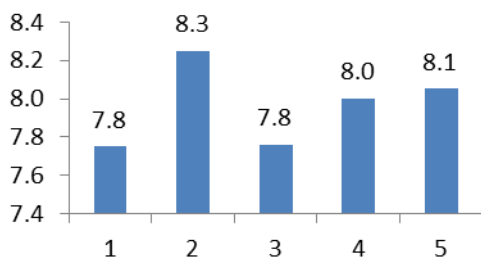


Figure 10

Choice vs. health expenditures

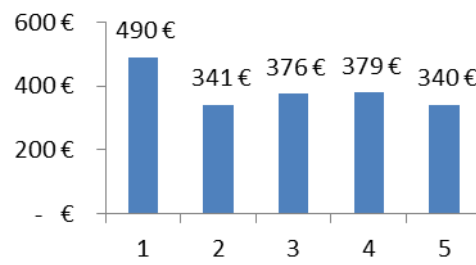


Figure 11

Choice vs. monthly income

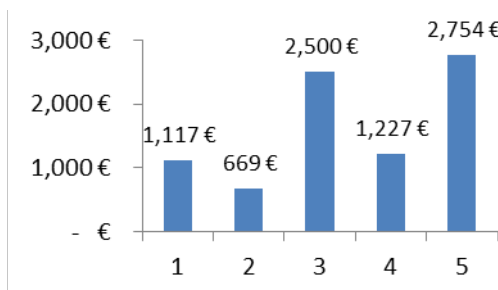
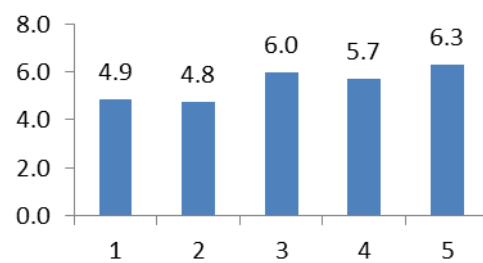


Figure 12

Choice vs. employment



## **APPENDIX B: PATIENT CHOICE QUESTIONNAIRE**

# Escolha do Hospital

Este questionário tem como objectivo compreender a sua opinião sobre a possibilidade de ter um Serviço Nacional de Saúde livre do ponto de vista da escolha do hospital onde quer realizar a sua operação ou consulta. Para melhor compreensão deste objectivo, é de salientar que actualmente não tem a possibilidade de escolha, salvo se for possuidor de um seguro ou subsistema de saúde que providencie a escolha do hospital. Se não for possuidor de um destes seguros ou subsistemas de saúde, a sua utilização dos serviços de saúde hospitalares está restrita à unidade de saúde hospitalar da sua área de residência, excepto em casos de urgência.

Agradecemos desde já a sua colaboração.

## A escolha em geral

1. Tem seguro privado ou faz parte de um subsistema de saúde?

Sim

Não

2. Sabia, antes deste questionário, que se não tiver um seguro de saúde ou não fizer parte de um subsistema de saúde, não tem direito a escolher o hospital onde quer realizar a sua operação ou consulta?

Nota: pode, no entanto, ir a qualquer hospital em casos de urgência

Sim

Não

3. Qual é a importância que dá ao direito de escolher o hospital que quer?

**5 é muito importante, 1 é menos importante**

	5	4	3	2	1	Não sabe
O direito à escolha, na sua opinião, é:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. Se essa escolha implicar um custo/preço, qual é a importância, para si, de ter o direito à escolha?

**5 dá maior importância à escolha, 1 dá maior importância ao custo/preço**

	5	4	3	2	1	Não sabe
O direito à escolha, se tiver um custo/preço, na sua opinião, é:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. Já se informou sobre o desempenho dos hospitais por alguma destas formas?

**Selecione todas as opções que se aplicarem**

Experiência pessoal	<input type="checkbox"/>	Médico de família	<input type="checkbox"/>
Experiência de familiares ou amigos	<input type="checkbox"/>	Relatórios oficiais de desempenho	<input type="checkbox"/>
Internet	<input type="checkbox"/>	Outra	<input type="checkbox"/>
Jornais	<input type="checkbox"/>		

6. Seria útil, na sua opinião, se houvesse um sítio na internet onde pudesse ver e comparar informações sobre os diversos hospitais?

Sim	<input type="checkbox"/>
Talvez	<input type="checkbox"/>
Não	<input type="checkbox"/>
Não sabe	<input type="checkbox"/>

### Sobre o seu hospital de referência

**Nota: o hospital de referência é o hospital que lhe está atribuído pela sua área de residência.**

7. Qual é o seu hospital de referência?

- Centro Hospitalar de São João
- Hospital Geral de Santo António (Centro Hospitalar do Porto)
- Centro Hospitalar de Vila Nova de Gaia/Espinho
- Hospital Pedro Hispano (Unidade Local de Saúde de Matosinhos)
- Nenhum dos hospitais mencionados

8. Encontra-se neste momento em lista de espera para alguma cirurgia?

- Sim
- Não

9. Se sim, pode indicar para que cirurgia se encontra actualmente em lista de espera?

- |                                    |                          |                                  |                          |
|------------------------------------|--------------------------|----------------------------------|--------------------------|
| Cirurgia Cardiorácica              | <input type="checkbox"/> | Obstetrícia                      | <input type="checkbox"/> |
| Cirurgia Geral                     | <input type="checkbox"/> | Oftalmologia                     | <input type="checkbox"/> |
| Cirurgia Maxilofacial              | <input type="checkbox"/> | Oncologia Cirúrgica              | <input type="checkbox"/> |
| Cirurgia Pediátrica                | <input type="checkbox"/> | Ortopedia                        | <input type="checkbox"/> |
| Cirurgia Plástica e Reconstructiva | <input type="checkbox"/> | Otorrinolaringologia             | <input type="checkbox"/> |
| Cirurgia Vasculuar                 | <input type="checkbox"/> | Urologia                         | <input type="checkbox"/> |
| Ginecologia                        | <input type="checkbox"/> | Outras especialidades cirúrgicas | <input type="checkbox"/> |
| Neurocirurgia                      | <input type="checkbox"/> |                                  |                          |

10. Se se encontra em lista de espera, há quanto tempo se encontra na lista e quanto tempo falta para fazer a sua cirurgia?

Tempo na lista de espera, em meses e/ou dias	
Tempo que falta para fazer a sua cirurgia, em meses e/ou dias	



11. Como é que habitualmente se dirige para o seu hospital?

**Pode seleccionar mais que uma opção**

- |                    |                          |            |                          |
|--------------------|--------------------------|------------|--------------------------|
| De carro           | <input type="checkbox"/> | A pé       | <input type="checkbox"/> |
| Transporte público | <input type="checkbox"/> | Ambulância | <input type="checkbox"/> |
| Táxi               | <input type="checkbox"/> | Outro      | <input type="checkbox"/> |

12. Quanto tempo demora habitualmente a chegar ao seu hospital de referência?

Tempo em minutos, aproximadamente

### Escolha do hospital

**Nota: o hospital alternativo ao da sua referência pode ser um hospital no Porto, um hospital em Portugal ou um hospital no estrangeiro.**

13. Se lhe fosse dada a hipótese de poder escolher ter a sua operação noutra hospital que não o seu hospital de referência, considerava a escolha?

- |          |                          |
|----------|--------------------------|
| Sim      | <input type="checkbox"/> |
| Talvez   | <input type="checkbox"/> |
| Não      | <input type="checkbox"/> |
| Não sabe | <input type="checkbox"/> |

14. Punha a hipótese de fazer a sua cirurgia no estrangeiro?

- |          |                          |
|----------|--------------------------|
| Sim      | <input type="checkbox"/> |
| Talvez   | <input type="checkbox"/> |
| Não      | <input type="checkbox"/> |
| Não sabe | <input type="checkbox"/> |

15. Se lhe fosse oferecida a hipótese de ter a sua operação noutra hospital que não o seu hospital de referência, o que é que gostaria de saber sobre esse hospital?

**5 é mais importante, 1 é menos importante**

	5	4	3	2	1	Não sabe
Custo geral (taxa moderadora, deslocação, etc)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A distância	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tipo de hospital (hospital privado ou público)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A taxa de sucesso da cirurgia que vai fazer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A simpatia dos profissionais	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
O “bom nome” do hospital	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Qualidade do Internamento	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A limpeza das instalações	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
O conforto das instalações	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A qualidade da alimentação	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
O horário das visitas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Se um familiar ou amigo(a) o(a) pode acompanhar, ou ficar alojado perto do hospital	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

16. Que mais gostaria de saber sobre o hospital? (se não há mais nada que gostaria de saber, pode deixar em branco)

17. Se tivesse a hipótese de ter a sua operação num outro hospital, e isso implicasse um custo adicional, qual seria o valor máximo que estaria disposto a pagar?

- Não estaria disposto a pagar, e não teria direito a escolher
- Um valor adicional menor ou igual à taxa moderadora
- Um valor adicional até 2 vezes a taxa moderadora
- Um valor adicional até 5 vezes a taxa moderadora
- Não sabe

18. Se lhe fosse dada a hipótese de escolher ter a sua cirurgia num hospital alternativo ao da sua referência, quão importante seria, na sua opinião:

**5 é mais importante, 1 é menos importante**

	5	4	3	2	1	Não sabe
Fazer a cirurgia perto de sua casa	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fazer a cirurgia num hospital privado	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fazer a cirurgia num hospital público	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fazer a cirurgia em Portugal e não no estrangeiro	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fazer a cirurgia num hospital onde a família e os amigos possam facilmente visitar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alojamento sem custos para um familiar ou amigo(a) perto do hospital	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
O “bom nome” do hospital	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
O “bom nome” do médico que irá fazer a cirurgia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fazer a cirurgia num hospital com grandes taxas de sucesso na operação que vai fazer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Esperar menos para fazer a cirurgia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Não pagar pelo transporte para o hospital	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Boa comunicação entre o hospital alternativo e o hospital de referência	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Possibilidade de receber o tratamento pós-operatório perto de sua casa	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

19. Com quem gostaria de discutir as suas opções? Enumere, utilizando uma escala de 1 a 5, sendo 1 a opção que dá **mais** importância e 5 a opção que dá **menos** importância.

Com o seu médico de família	
Um médico no seu hospital de referência	
Um médico no hospital alternativo	
Famíliares ou amigos	
Uma linha telefónica especial de ajuda	

### **Que hospital escolheria?**

Imagine que estava numa situação em que podia escolher o hospital para onde queria ir. Nesta secção vai ter a hipótese de escolher entre três hospitais diferentes, tendo em conta toda a informação fornecida sobre cada hospital.

Um dos hospitais é o seu hospital de referência, ou seja, o hospital que lhe está associado pela sua área de residência. No entanto, neste exercício de escolha, as informações sobre os hospitais podem não corresponder à realidade, o que significa que o seu hospital de referência pode ser melhor ou pior do que é apresentado aqui.

Lembre-se, utilize as informações fornecidas para cada hospital para fazer a sua escolha e marque apenas uma caixa em cada questão. Não existem respostas certas ou erradas para estas escolhas; só estamos interessados nas suas opiniões.

20. Que hospital escolheria?

	Hospital de referência	Hospital alternativo 1	Hospital alternativo 2
<b>Localização</b>			
Tempo de viagem de carro	20 mins	2h 30 mins	3h 30 mins
Custo da viagem de carro	3,00€	31,50€	23,60€
Tempo de viagem em transportes públicos	25 mins	2h 30 mins	2h 5 mins
Custo da viagem em transportes públicos	4,00€	16,80€	10,00€
<b>Informação</b>			
A. Comodidade e eficiência de serviços	★★★★☆	★★★★☆	★★★★☆
B. Instalações do hospital, limpeza e alimentação	★★★★☆	★★★★★	★★★★★
C. Experiência pessoal ou familiares e amigos	★★★★☆	★★★★★	★★★★☆
D. Impacto na saúde (baseado no desempenho do hospital)	★★★★☆	★★★★☆	★★★★☆
E. Tempo de espera (desde o encaminhamento até ao tratamento)	20 semanas	22 semanas	8 semanas
<b>Opinião do seu médico de família</b>	<input type="checkbox"/>	Recomendado <input type="checkbox"/>	<input type="checkbox"/>

**O seu estado de saúde actual**

21. Quantas vezes visitou o seu médico de família nos últimos **12 meses**?

**Escreva apenas um número (por exemplo 4, se tiver ido 4 vezes)**

Número de vezes

22. Para si, o seu estado de saúde nestas últimas **4 semanas** foi:

**10 é muito bom, 1 é muito mau**

O seu estado de saúde foi:  10  9  8  7  6  5  4  3  2  1  Não sabe

23. Para si, o seu estado de saúde há **12 meses** era:

**10 é muito bom, 1 é muito mau**

O seu estado de saúde foi:      **10**   **9**   **8**   **7**   **6**   **5**   **4**   **3**   **2**   **1**   Não sabe  
                             

24. As suas despesas totais em saúde, nestas últimas **4 semanas**, foram (considere todos os serviços de saúde incluindo consultas, cirurgias e medicamentos, mas excluindo os custos relacionados com questões apenas estéticas):

Valor, em €     

25. As suas despesas totais em saúde, nestes últimos **12 meses**, foram (considere todos os serviços de saúde incluindo consultas, cirurgias e medicamentos, mas excluindo os custos relacionados com questões apenas estéticas):

Valor, em €     

### Sobre si

26. Género

Masculino  

Feminino  

27. Qual é a sua idade?

Idade, em anos

28. Qual é o seu nível de escolaridade?

- |                 |                          |              |                          |
|-----------------|--------------------------|--------------|--------------------------|
| Não teve escola | <input type="checkbox"/> | Licenciatura | <input type="checkbox"/> |
| Até ao 4º ano   | <input type="checkbox"/> | Mestrado     | <input type="checkbox"/> |
| Até ao 9º ano   | <input type="checkbox"/> | Doutoramento | <input type="checkbox"/> |
| Até ao 12º ano  | <input type="checkbox"/> | Não sabe     | <input type="checkbox"/> |

29. Qual é a sua situação actual em relação ao trabalho?

- |   |                          |   |                          |
|---|--------------------------|---|--------------------------|
| A trabalhar (por conta de outrem)       | <input type="checkbox"/> | Reformado(a)                              | <input type="checkbox"/> |
| A trabalhar (por conta própria)         | <input type="checkbox"/> | Doméstico(a) / a cuidar da casa ou alguém | <input type="checkbox"/> |
| Desempregado(a)                         | <input type="checkbox"/> | Estudante                                 | <input type="checkbox"/> |
| Incapacidade temporária para o trabalho | <input type="checkbox"/> | Outro                                     | <input type="checkbox"/> |

30. O seu rendimento mensal bruto é:

Nota: lembre-se que este estudo respeita as regras do anonimato e não pede o seu nome em qualquer parte do questionário. Tudo o que escrever aqui será usado apenas para fins estatísticos.

Valor, em €