LSE 'Europe in Question' Discussion Paper Series

Assessing Welfare Effects of the European Choice Agenda: The case of health care in the United Kingdom

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LEQS Paper No. 35/2011

May 2011

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Abstract

Choice and competition policies in public services are popular reform strategies in the member states of the European Union (EU). The European choice agenda is based on the view in the EU of 'social policy as a productive factor' and the need for 'modernisation' of the EU welfare states. This user-led, consumer oriented approach highlights the need to understand the effects of the choice and competition policies in public service. In conventional welfare economic the focus lies on analysis of efficiency, quality and equity effects and the current empirical evidence show varying results. This paper discusses choice policies in European countries and uses the case of choice in health care in the UK is to assess the welfare effects of choice and competition. The UK has a highly developed consumerist policy, and as it has served as a role model for other European countries implementing choice policies. The welfare effects are assessed using satisfaction with the NHS and subjective well-being as an indicator of individual welfare, gained from the introduction of choice of hospital in 2006. Further the equity aspect of choice is assessed by analysing variation in welfare effects between socio economic groups. The results indicate positive effects of choice, particularly for middle class individuals.

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Acknowledgements

The index of hospital competition extensively used in this paper was created by Zachary Cooper and Stephen Gibbons, and I would like to acknowledge their role in the analysis presented here. I also thank Joan Costa-Font, Vassilis Monastiriotis and Alison Johnston for comments on previous drafts.

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1. Introduction

In Europe, policies promoting individual choice in health care, often coupled with marketisation and increased competition in various quasi-market solutions, is seen both as a way to contain costs and increase efficiency and quality in public services (Le Grand 2007). Choice and competition is by an extensive literature argued to improve efficiency and quality, whereas political rhetoric promotes choice not only as a cost-saving, economically efficient organising principle of public services, but also as something *intrinsically* valuable in any democratic society. Choice policies have also been a common feature of most Western European countries, increasingly since the 1990's, but has in later years spread to the eastern European member states. The European Union (EU) broadly promotes choice and competition, which are seen as the essence of the Single Market project and the same ideas have increasingly been applied to the public services agenda. Recently, social policy is discussed as a productive factor and has become subject to a 'modernisation' agenda, as to which competition and user choice are inherent aspects (Huber, Maucher et al. 2008:16). The 'Modernisation' agenda is argued to be driven by, the changing social and economic reality of the member states of the EU (CEC 2008). The focus on, and promotion of, choice and competition in public services in the EU predicts a further expansion of this type of public sector reform, which highlights the need for further assessment and understanding choice and competition policies.

Following the broad expansion of choice and competition policies in member states of the EU, this paper examines the relations between individual welfare and increased choice and competition in public services and more particularly in health care provision. This question is particularly relevant as to date, the empirical evidence of improved efficiency and quality from the introduction of choice and competition policies in the health care sector is relatively weak (Propper, Wilson et al. 2006; Le Grand 2007b). This provides for an interesting starting point for an alternative approach to assessing welfare effects, and corresponds to the critique of the conventional outcome oriented approach of welfare economics, limiting our understanding of welfare effects (Hahn 1982; Ng 1988). In this paper I argue that the use of subjective measures can add to our understanding of welfare effects of choice policies. In general terms, extending the analysis beyond the economic outcome measures of welfare – commonly analysed through "willingness to pay" revealed preferences– is particularly important when analysing the welfare effects of procedures such as making a choice. In regards to the literature on the effects of choice policies, the main bulk of contributions concern efficiency or quality effects, measured through objective indicators such as length of stay, mortality or morbidity. The use of subjective indicators allows for the inclusion of both possible welfare effects of choice itself, and effects on service quality (through competition or otherwise). *Procedural utility* generated from the process of choosing (any benefit from choice that is not due to improved outcomes) which may also be interpreted as the commonly discussed "intrinsic value" of choice.

The welfare effects are assessed using the case of choice and competition policy in health care in the United Kingdom (UK), and more specifically the introduction of choice of hospital in England in 2006. The English case was selected due to the scope of reform; it has developed from a situation offering very little choice, through a gradual expansion of choice and competition elements into a broad quasi-market system, and as it is argued to have served as a role model for other European countries in reforming their health care policy. Cabiedes and Guillen argue that the UK is a country of inspiration for other European countries, partly due to the style of reform, including the production of white papers that outline that the broad

intentions of policies (2001: 1215). As discussed below, the UK exemplifies a trend in health system development common among Beveridgean type health care systems, including the Scandinavian countries and Spain, where user choice has continuously been extended since the early 1990s. Finally, the case of hospital choice in England benefits from the availability of detailed and reliable data which provides an opportunity for exploring of the effects of choice on individual welfare.

The potential effect of choice on equity is also explored, which is particularly relevant for the UK case as equity effects of choice policies have been a very much debated. I attempt to trace whether any welfare effects of choice is dependent on the socio-economic group membership. This examination is intended to provide indications in relation to the debate in the UK, both among academic commentators and politicians, who present opposing views on the question of who benefits from choice policies (Dixon, Grand et al. 2003 ; Dixon and Grand 2006; Barr, Fenton et al. 2008). Some argue that choice is socially exclusive and that its benefits are mostly felt by the middle-classes. Lower socio-economic groups, characterised by lower income and level of education, are said to benefit less from increased choice (Dixon and Grand 2006). Others argue that previous to the choice policies, only the relatively wealthy had choice (of private insurance), and hence with the general choice policy, all individuals now benefit from choice (Le Grand 2007b).

The paper continues with a brief literature review, followed by a discussion about choice reform in European countries and the relevance of the UK as a case study. The UK policy used for the empirical analysis, choice at referral in the English NHS, is then outlined. The empirical analysis is divided into two parts, a first part examining the relationship between choice and individual's satisfaction with the NHS followed by a second part analysing the effects of higher competitions on individual subjective wellbeing (SWB). Section five concludes with a discussion of the results and implications for further research.

2. Understanding Welfare Effects of Choice

This brief literature review further elaborates the relevance of choice polices in public services in the EU, with particular focus on health policies. The meaning of choice policies and the implications for the functioning of societies and the view on the state and the citizen are discussed. The literature on SWB and how it adds to the conventional approach to evaluating welfare policy is followed by brief empirical evidence on efficiency and quality in health care. Finally, the aspect of equity in access has been heavily debated both in the literature, among politicians and policy makers, with strong arguments both in favour of choice being equitable and of choice being socially exclusive.

Political economy of choice policies

Choice policies are much debated in from a political economy point of view as they have clear implications for the relationship between individual state and the market. Oliver and Evans highlights how the promotion of choice align with the individualist view of the society rather than a more communitarist approach (Oliver and Evans 2005). Here the debate questions the individual's responsibility for his or her choice and the outcomes they produce, and what level of independence from the authorities is desirable. The citizen becomes a consumer of public services and even if the political science literature views choice as a basic democratic right, choice in public services raises the question of how to secure accountability and quality control in a quasi-market setting (Newman and Kuhlmann 2007). Burström even argues that the choice discourse can be seen as a move away from political accountability to a society of consumerist action (2009). The individualisation through choice policies in public services are further argued to affect the concept of citizenship as well as dynamics of welfare governance (Newman, Glendinning et al. 2008). Newman et al's point has implications for the welfare governance also on the European level, where the "choice agenda" concerns issues such as effects of cross-border mobility on health

care, long-term care and education. Choice policies are changing the way the welfare state is understood, on a national level, as well as on a European level.

Understanding and Measuring Welfare

Theoretically, the economic concepts of welfare and utility have continuously been the subject of debate and critique. The standard approach is to measure welfare effects in welfare economics is through one of the many versions of cost-benefit analysis, using revealed preferences or statements of willingness-to-pay to establish how the benefits can be valued. There are two issues with this approach; firstly, it is argued that the "willingness-to-pay" estimates are unreliable for public goods such as health care services (Costa-Font and Rovira 2005). Secondly, the understanding of human behaviour in standard economics is argued to be limited by the assumptions of rational preferences theory. In behavioural economics it is argued that utility and human behaviour should be approached in a setting of *bounded rationality*, due to imperfect information and cognitive limitations (Thaler 1991) and the possibility that individuals are "satisficing" rather than "optimising" when making choices (Schwartz, Ward et al. 2002). Further, Margolis questions the idea of individuals being governed by self-interest, arguing that there are other values determining behaviour, which should be incorporated into economic models (2007).[1]

The critique of welfare economics can be met by using subjective measures of welfare, and this has been the subject of a blossoming research field referred to as the happiness literature.[2] One of the core arguments is that subjective measures of well-being capture individual utility more accurately than the revealed preference approach, and that SWB capture the actual motivation for individual behaviour (Frijters 2000) Further, Frey, Stutzer and Benz argue that the procedure carries

[1] In understanding welfare effects of choice, a vital part is *how* the choice situation is perceived, how many choices were presented, and how well the options fulfilled the patient's needs. This requires experimental research or data on perceptions of the procedures of presenting choice. This is not available within the scope of this paper. Indicative secondary data is discussed in below. See Dixon (2007).

[2] For a recent review see Dolan el al. (2008)

important implications for individual welfare and should be incorporated into the utility concept (Frey and Stutzer 2000; 2002; 2004; Benz 2005). As this paper exemplifies, this is particularly relevant when assessing institutionalised processes of *welfare services* such as here; choice policies. The framework of procedural utility was initially created by Frey and Stutzer with the purpose to offer a new understanding for economic and political questions (2000).

Choice and Welfare Effects

The practical introduction of choice is generally promoted as an efficiency enhancing policy, cutting costs as well as creating incentives for improved quality and providing equal access for all. The aspects of *efficiency, quality and equity* are basic building blocks of conventional welfare economic evaluation of welfare effects of a policy (Barr 2001). The evidence of the effects of choice policies in public services provide varying results, with choice policy deemed to be efficiency and quality enhancing under certain conditions such as the correctly incentivising payments structures (Le Grand 2007). But regardless of the actual efficiency and quality effects, choice is promoted across the disciplines based on the idea that it is an intrinsic good- that more choice is positive in its own right (Dowding and John 2009). *Efficiency* effects of choice policies are not likely to directly affect individual welfare. However, following the argument of Krutilla the overall efficiency of the system may generate indirect effects on welfare, through the *existence value* of a well-functioning health care system (1967). Individuals perceiving that the health system is cost-efficient, i.e. makes the most of the taxpayers money, can possibly draw welfare from this conviction. Apart from the indirect effects on welfare, efficiency arguments are not the most important for the analysis of individual welfare.

Quality improvements instigated by choice policies are argued to be brought about as the policy give opportunity to "exit" rather than using "voice" as would be the status quo solution (Hirschman 1970). The traditional idea, that patients would influence service through complaints, either to the health care provider or responsible officials

idea, that is, relying on patient 'voice' alone may not be enough to raise quality. "Voice" in itself could also be a source of inequity as discussed below. Instead, patients should be given the ability to 'exit' in order to put pressure on providers to raise their performance. However, the nature of the health care market may lead to delay of improvements and the "exit" may not be noticed instantly. Propper et al. found small yet positive effects of choice on quality, measured as death rates after treatment following heart attacks (2004). Similar results were found by Cooper, Gibbons et al using AMI mortality as a quality indicator, finding that mortality fell more quickly (i.e. quality improved) for patients living in more competitive markets after the introduction of hospital competition in the UK, in January 2006. The results suggest that hospital competition in markets with fixed prices can lead to improvements in clinical quality (2010). In the US, which has a, compared to Europe, very privatised and choice oriented health care sector, it has been found that markets that are more competitive also bring more quality (Propper, Wilson et al. 2006).

Equity of Choice

Regardless of the possible negative effects on equity choice has, in the UK, been promoted extensively as an equity enhancing policy. This is highlighted in the following speech by John Reid, Health Secretary of the Labour government.

> These choices will be there for everybody…not just for a few who know their way around the system. Not just for those who know someone 'in the loop' – but for everybody with every referral. That's why our approach to increasing choice and increasing equity go hand in hand. We can only improve equity by equalising as far as possible the information and capacity to choose (Reid 2003).

The idea put forward by the UK government was that in the system where the "money follows the patient", patients are enabled to exit and switch providers, and, as a result, incentives for providers to treat all patients well, irrespective of a patient's ability to negotiate with their provider, voice their displeasure with their care, or somehow manage to game the health care system, are created (Department of Health

2003). Further, the UK government and academics associated with the government argued that even in systems without formalized choice mechanisms, choice still existed for middle and upper classes that have the ability to negotiate with their providers for better care or pay to enter the private sector. Creating formalized choice mechanisms, they argued, would give every patient the ability to choose irrespective of their socioeconomic status (Cooper and Le Grand 2008).

The effects of choice and quasi-market structures in welfare services on different segments of the population has been debated in the literature, questioning whether choice policies are as equitable as the politicians often argue. The emphasis on the potential of choice to improve care for the traditionally underserved ran contrary to the traditional notion that giving patients choice could harm equity (Cooper and LeGrand 2008). The government and academics associated with the government argued that even in systems without formalized choice mechanisms, choice still existed for middle and upper classes that have the ability to negotiate with their providers for better care or pay to enter the private sector. By extending choice to the whole population these gaps in opportunities for choice of care were intended to be closed.

There may however remain barriers for certain groups of the population, threatening equity of access to care; 'voice' problems such as communication difficulties, language, literacy, assertiveness, articulation, self-confidence and ability to deal with professionals, cultural and health beliefs and behaviour, transport difficulties and travel distance, as well as the time and financial costs of travel, family or work commitments (Dixon, Grand et al. 2003 ; 2006). The outcome may be that poorer individuals have longer waiting times because their travel and information costs are relatively higher. Dixon et al conclude that there are remaining barriers to access, connected with differences between social groups in respect of strength of 'voice' and in their health beliefs and health seeking behaviour (Dixon, Grand et al. 2003). Dixon and Le Grand argue that the reasons why extended user choice may not improve equity are unequal information, unequal capabilities and unequal flexibility/mobility

as well as the differing proportions of income spent, on for example, travelling costs (2006).

3. The consumer choice agenda and European reforms

Choice and competition policies represent a highly relevant issue across Europe particularly as the policies are closely intertwined with the agenda of the EU. Consumer choice in public services may not be an outright policy objective of the EU, but other EU policies such as the single market and the promotion of cross-border mobility indirectly enhance consumer choice in the EU in a noteworthy way. More specifically considering choice in health care, the Council Conclusions on Common values and principles in European Union Health Systems from 2006 highlighted the aim to increase patient participation and choice as well as competition in health care, with particular emphasis on the option of receiving health care in another member state, known as cross-border mobility. The work towards the goals is by the Council argued to contribute to a European choice agenda (2006).

In practice, choice policies are widespread in European health care systems, albeit with clearly disperse reform trajectory depending on underlying model of health system. As table 1 illuminates, the health care systems in European countries tend to follow two main archetypal trajectories of development with considerably different approaches to choice. The Beveridge model is found in the United Kingdom, the Scandinavian countries and in Spain, which however was relatively late in introducing choice reforms. The health care systems in these countries are denoted by a single payer, financed by national taxation, and the use of a National Health Service of generally publicly owned hospitals. Access to hospital specialists is typically by referral via a general practitioner (GP), and overall limited choice has been offered to patients, while relying on GP's as gatekeepers, guides and coordinators of health care. The emphasis however recently been on increasing choice of hospital for elective care (Bevan and Van De Ven 2010). Even though Sweden introduced choice policies early in the 1990s, the policies have been was later

reversed when a social-democratic government came to power (Blomqvist 2004). On the other hand, in the Bismarck model countries, exemplified by Germany, France and the Netherlands, the reform trajectory is moving in the opposite direction, with traditionally free choice being constricted for cost-containment issues. The model is denoted by multiple-insurer financing, employer-based schemes supplemented by the state, a mixed public and private provision in which and patients have direct access to specialists. Controlling total expenditure has partly been done by reducing choice of specialists by types of 'soft' gate keeping (Or, Cases et al. 2010). Further, the Bismarckian countries have newly introduced choice and competition also in financing of health care to alleviate the expenditure problems.

Table 1: Overview of health care reform in European countries

		Reform trajectory	Expenditure % of GDP	Public expenditure, % total expenditure on health, THE	Private expenditure, % total expenditure on health, THE	Private insurance, % total expenditure on health, THE	% confidence in national health care system
Bismarckian type health care systems	Belgium	Traditional choice. Introducing competition in 1990s	11.1	66.8	25.3	4.3	88
	Germany	Traditional choice. Introducing competition in 1990s	10.5	76.8	23.2	9.2	54
	France	Traditional choice. Little competition	11.2	77.8	22.2	13.2	83
	The Netherlands	Traditional choice. 2006 competition in financing	9.9	75.3	16.5	17.7	77
Beveridge type health care systems	UK	Choice introduced in 1990s. Choice of hospital 2006	8.7	82.6	17.4	1.4	73
	Denmark	Choice in 1990s. Choice of hospital 1992.	9.7	84.5	15.5	1.6	77
	Spain	Choice of GP, pilot areas with hospital choice (Madrid 2006)	9.0	72.5	27.5	5.9	77
	Sweden	Choice in 1990s. Choice of hospital 1991.	9.4	81.9	18.1	0.1	79

(1) All data from 2008, except for Denmark from 2007
Sources: OECD Health Data 2010 Version: October 2010, and Gallup World Poll (% confidence in national health care system)

As the discussion above illustrates, the EU choice agenda is currently very topical in the Beveridge model countries, which are continuously are expanding user choice and introducing managed competition. In Bismarckian type health care systems the issue is less pressing as choice has been a traditional characteristic of health care

provision. Analysing choice policy in the UK is particularly valuable in terms of lessons for other countries as it is argued to be a role model for Southern European countries such as Italy and Spain when debating health care reform (Cabiedes and Guilleen 2001). Cabiedes and Guillen argue that the UK became the role model partly as a result the policy-making style of producing white papers setting out the direction of policy and the overall design. This approach facilitates policy diffusion, which is further facilitated by the English language having become a 'lingua franca'. It is further argued that Southern European countries in particular tend to look to more advanced EU member states for inspiration rather than other, more similar, Southern European countries (2001).

4. Empirical Application: Choice in the English NHS

The policy here used for the empirical assessment of welfare effects is the choice of hospital reform in the English National Health Service (NHS), introduced in 2006. The policy was introduced as part of the wave of market-based reforms to the NHS enacted by the Labour party from 2003 to 2008. The reforms focused on increasing patient choice and hospital competition and were accompanied by significant institutional changes to support a market for hospital care for NHS-funded patients. The purpose of the reforms was to improve quality whilst containing costs and to provide equitable care to all. On January 1, 2006, every patient in England became eligible to choose their secondary care[3] provider as well as where they receive surgical care. Along with giving patients a formal choice of where they could receive secondary care, the government also introduced a new information system, known as 'Choose and Book', which enabled paperless referrals and appointment bookings and which provided information on quality to help patients make more informed choices (Department of Health 2009). The booking interface gives the person booking the appointment the ability to search for hospitals based on geographic distance. It

[3] Excluded patient groups are those in need of emergency and urgent services, patients with cancer, maternity care and mental health services.

also allows them to see estimates of each hospital's waiting times based on their last 20 appointments. The difference in systems between the countries of the UK as outlined provides for an interesting natural experiment in assessing the effects of the different structures of health care provision.

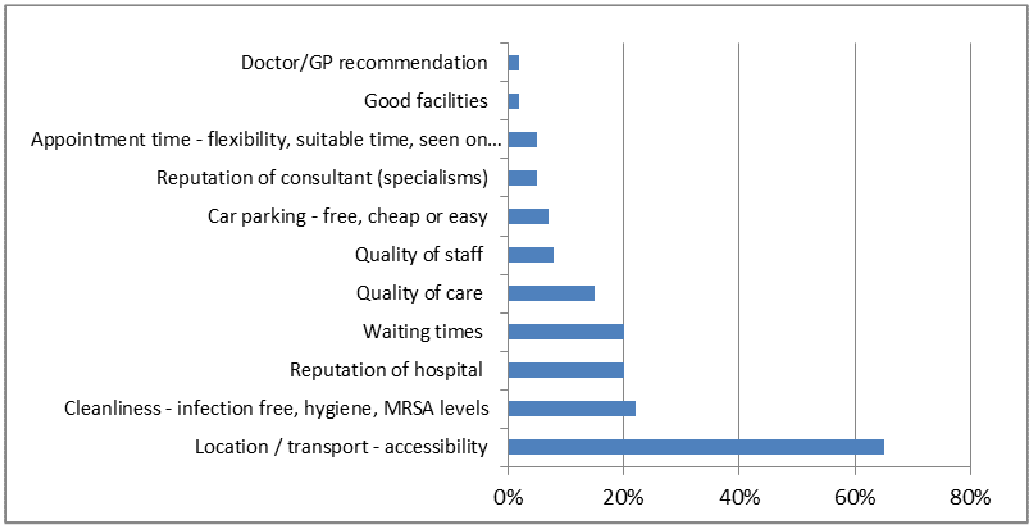
The empirical modelling to assess the welfare effects of choice is divided into two parts, both concerning the Choice at referral policy introduced into the English NHS in 2006. The first part is concerned with the satisfaction with the NHS as an institution and how choice affects the self-reported satisfaction with the NHS. The regressions and descriptive statistics provide an understanding of the effects of choice but also the underlying dynamics of why and how people choose. Further analysis in this respect would be useful but not within the scope of this paper. The first part utilises the British Social Attitudes survey from 2007. The second part assesses the effects of choice on individual welfare, measured as life satisfaction. Choice in this part is instrumented through a measure of competition in the local area. The second part uses the British Household Panel Survey, also from 2007.

4.1 Choice and satisfaction with the NHS

The purpose of this section is to explore the views on choice in the English NHS, after the introduction of the choice of hospital policy (1st January 2006) by utilising the British Social Attitudes survey from September 2007[4] (see appendix I for further details).

[4] It would have been beneficial to include further waves of data (2008 and onwards) but due to the extensive changes in the economic climate of 2008, which is not unlikely to influence the subjective evaluations of public services, this study primarily focuses on data from 2007.

Figure 1: Factors mentioned when as determining when choosing hospital



Source: National Patient Choice Survey 2007

Interestingly, and to a certain extent against the assumptions of the literature on choice, the highest rated consideration is the location of the hospital. 65% of individuals mentioned location and transport possibilities as a consideration when choosing a hospital. The literature concluding that choice should generate quality improvements depends on patients "voting with their feet" and avoiding, or telling others to avoid, hospitals with perceived poor quality. Reputation of hospital is mentioned as a consideration by 20% of patients in the survey, but whether this implies an effect on hospitals is questionable. Marshall et al. for instance, question how much individuals take hospital ratings into account when choosing a hospital (2000).

As discussed above, procedural utility is argued to arise from procedures perceived as positive by the individual. NHS patients overall are rather satisfied with the procedure of choosing, where 79% in the National Patient Choice Survey claims to be "very satisfied" or "fairly satisfied" with the process of choosing. In this paper the procedural value of choice is an inherent part of the analysis, albeit difficult to distinguish whether welfare improvements stem from changes in outcome or changed in the procedure. Identifying procedural utility from choice poses considerable methodological challenges, but is clearly an interesting point.

Awareness of the policy and possible distortions in who actually gets offered a choice by the GP is a possible distortion to the exploration of the data. The implementation of the choice policy seem to be slow, as by 2007, 45% of the sample in the National Patient Choice Survey can recall that they had been offered a choice by their GP when being referred for elective surgery. Noteworthy is that 39% state that they were aware of the choice before seeing the GP. Hence the introduction of the choice policy is clearly challenged by an information deficiency which clearly will affect the results in this first part of the analysis. Noteworthy is that the analysis here is driven by perceptions and not necessarily by facts. Unfortunately it is in the current data not possible to identify who was offered a choice and who was not. The regression analysis has the goal of assess the welfare effects of having choice of various aspects to the interaction with the NHS. First I discuss the dependent variables before outlining the model and discussing the results.

Dependent variable

The dependent variable is satisfaction with the NHS, the question being posed "*How satisfied you are with how nhs runs nowadays?*" with answers ranging from "very satisfied" to "very dissatisfied" (on a 1-5 scale).[5] The "NHS satisfaction" variable corresponds to what the happiness literature refers to as a variable of domain satisfaction (Ferrer-i-Carbonell 2002). Common examples of this type of survey question are; satisfaction with accommodation and job satisfaction, and they provide a measure of the individual satisfaction (i.e. well-being) generated from the relevant domain. Hence, the measure "satisfaction with the NHS" can be understood as the wellbeing an individual draws from the NHS as an institution. The domain satisfaction can be contrasted with global measures of subjective wellbeing, such as happiness or life satisfaction, which tend to be less clearly related to narrow policy issues. As we shall see in section 4.2 life satisfaction is affected by level of

[5] In the BSA "very satisfied" is coded as "1" on the scale of 1-5. For the purpose of this analysis I have recoded "very satisfied" as 5 and less satisfaction corresponds with a lower number.

competition. Using domain satisfaction circumvents the common critique of happiness or life satisfaction being too broad measures (Ferrer-i-Carbonell 2002).

Table 2 Satisfaction with the NHS and views on choice, per cent.

How satisfied are you with NHS?	2004	2007
very satisfied	7.72	10.88
quite satisfied	36.67	40.68
neither satisfied nor dissatisfied	19.04	18.39
quite dissatisfied	22.51	20.21
very dissatisfied	13.75	9.32
don't know	0.28	0.52
NHS patient should have hospital choice?	2004	2007
a great deal	21.82	30.73
quite a lot	41.11	45.29
a little	27.23	19.36
none at all	8.85	3.96
don't know	0.94	0.65
Nr of observations	4,124	

Source: British Social Attitudes survey 2004 and 2007.

Noteworthy is that satisfaction with the NHS, as well as the preferences for more choice, seem to have increased from before the introduction of the choice of hospital policy in 2006 as indicated in table 2. This speaks in favour of positive effects of choice policy; however more careful analysis is necessary.[6] In order to more closely trace the relationship between choice and satisfaction I estimate an ordered probit regression, to account for the categorical nature of the dependent variable, according to the following equation:

$$NHS_{sat\,i} = \alpha + \beta_1 C_i + \beta_2 X_i + \varepsilon_i$$

Where satisfaction with the NHS is regressed on a set of demographic covariates X_i, and various combinations of choice indicators C_i. The coefficients of an ordered

[6] Regrettably it has, due to lack of appropriate data not yet been possible to establish a causal relationship between choice and satisfaction by tracing the development over time and across groups with more or less choice.

probit model cannot be directly interpreted; only the sign and significance is relevant in the tables below.[7]

In table 3, the results of the ordered probit are reported on a sample of all English individuals, regardless of whether they have been in the hospital and in effect been subject to the policy. This group may still benefit from the policy through what Krutilla discusses as an *existence* value. It implies that the welfare effect should be stronger for individuals who have been *directly* subject to the policy but it is also likely that the policy *indirectly* affects other individuals, regardless of whether they have been subject to the choice policy, through the experiences of family and friends (1967).

The results show an interesting relation between individual's desired level of choice, and how much choice they feel that they get in the NHS. A higher level of desired choice corresponds to a lower level of satisfaction with the NHS. Further, a higher level of perceived choice is associated with a higher level of satisfaction with the NHS. The signs are robust to changes in the specification; the table shows one example where only the "desired level of choice" variable is entered in specification I. The same relationship applies to the level of choice of treatment desired, and the corresponding perceived amount of choice available. When both sets of variables are entered jointly, only the desired level of choice of hospital is no longer significant, and all signs remain the same.

[7] In order to generate relevant coefficients, marginal effects of each category of the dependent variable must be calculated. For the illustrative purposes of this paper the sign and significance provides sufficient information. Marginal effects tables are available from the author.

Table 3: Views on choice and the effects on satisfaction with the NHS. BSA 2007. Sample: all English individuals.

Dependent variable: satisfaction with the NHS

	I	II	III	IV
How much choice of hospital:				
Desired?	-0.0864*	-0.1316***		-0.0677
Actually have?		0.2845***		0.1982***
How much choice of treatment:				
Desired?			-0.1763***	-0.1493**
Actually have?			0.3037***	0.2001***
Demographic covariates	Yes	Yes	Yes	Yes
Household income	-0.0224**	-0.0210*	-0.0188*	-0.0181*
Education level	0.1437	0.1005	0.0834	0.0659
cut 1 _cons	-0.5012	-0.2406	-0.171	-0.2521
cut2 _cons	0.3599	0.6391*	0.7092*	0.6351
cut3 _cons	0.8633**	1.1470***	1.2228***	1.1529***
cut4 _cons	2.2405***	2.5376***	2.6289***	2.5673***
Observations	811	788	786	774
R-square (pseudo)	0.0174	0.0278	0.0278	0.0325

*** 1%, ** 5%, * 10% significance level. Source: British Social Attitudes survey 2007.

Interestingly, when considering individuals who have actually been hospitalised or had a close family member in hospital, all signs stay the same, but it is now only the variables denoting who much choice the individual perceives to have that are significant. This may indicate less negative effects of having a preference for a high level of choice of hospital, when having a recent experience of hospitalisation. Clearly, this is not a causal relationship, but the results may point towards a positive effect of the choice of hospital policy. Individuals in this narrow sample do not display a negative relationship between satisfaction with the NHS and the desired level of choice of hospital.

Table 4: Views on choice and the effects on satisfaction with the NHS. BSA 2007.
Sample: individuals who have been in hospital after June 2006 .
Dependent variable: Satisfaction with NHS

	I	II	III	IV
How much choice of hospital:				
Desired?	0.0513	0.0224		0.0704
Actually have?		0.2336**		0.1429
How much choice of treatment:				
Desired?			-0.1033	-0.1674*
Actually have?			0.3399***	0.2638**
Demographic covariates	Yes	Yes	Yes	Yes
Household income	-0.0083	-0.0078	-0.0132	-0.0096
Education level	0.0106	0.0015	0.0095	0.0106
cut 1 _cons	0.2914	0.4391	0.3314	0.3349
cut2 _cons	1.0853*	1.2312**	1.1292*	1.1308*
cut3 _cons	1.5460***	1.6981***	1.5961***	1.6058***
cut4 _cons	2.9139***	3.0868***	3.0142***	3.0323***
Observations	305	299	299	295
R-square (pseudo)	0.0186	0.0256	0.0292	0.0315

*** 1%, ** 5%, * 10% significance level. Source: British Social Attitudes survey 2007.

Overall the models have a low explanatory power, which is to be expected from this type of regression on a subjective variable. As discussed below, individual unobservables determine a large part of the variance in this kind of satisfaction measures. What this examination of the data on choice preferences in relation to the NHS indicates is that choice seems to matter for individual satisfaction, and that people increasingly welcome choice in health care.

4.2 Competition and Welfare

This section investigates whether a higher number of hospitals within the local authority, indicating both that the individual has a larger "feasible" choice set, and that the hospitals are subject to more competition and possibly better quality, have an effect on individual wellbeing. This analysis is makes use of British Household

Panel Survey data from 2007 and a measure of the intensity of competition the hospitals within each local authority area faces.

The Dependent variable is in this part is self-reported life satisfaction. The data was collected for the BHPS through the question "*How dissatisfied or satisfied are you with your life overall?*" using a seven point scale where one equals "not satisfied at all" and seven "completely satisfied".[8]

The *policy variable* is here a measure of differences in *provision*, a large or smaller feasible choice set, measured as the level of competition within each local authority in England, captures welfare effects of the character of choice. The feasible choice set is measured through an competition index created by Cooper and Gibbons (2010) that defines market areas based on a variable radius derived from patient flows from GPs to hospitals. The index captures differences in market concentration and increases with competition, zero corresponding to monopoly and one to perfect competition. A higher number of hospitals in a travelable proximity provide a larger choice set for the individual. The index available is a measure of competition per hospital site (based on the level of competition within a fixed radius area) which has been matched onto the BHPS and aggregated to local authority level (see appendix for details on the competition measure and matching procedure).

The regressions are estimated in accordance with the following equation:

$$SWB_{it} = \alpha + \beta_1 nlhhi_j + \beta_2 X_{it} + \varepsilon_{it} \qquad (1)$$

Where $nlhhi_j$ represents the competition index by Cooper et al (2010), ranging from 0-1 where 1 equals perfect competition and 0 monopoly (see appendix for further discussion on the calibration of the measure).

X_{it} is a vector of demographic determinants of SWB: *sex, age, marital status, employment status, income, level of education, household size, health variables.* Varieties of further controls are introduced in the individual models.

[8] This section has been replicated on the BSA survey used in the previous section, however with insignificant results.

The models are estimated under the assumption that the SWB measure is cardinal[9], and hence the SWB can be estimated as a continuous variable rather than a categorical variable. The cardinality assumption is common in psychological research, whereas in economics it is common to only assume ordinality. Ferrer-i-Carbonell and Frijters tested the different approaches finding that the cardinal versus ordinal assumption makes no real difference (2004). All regressions have been run using OLS, ordered probit and ordered logit. As the results proved consistent the OLS regression are shown, as the coefficients of an OLS are more convenient to interpret and ordered regressions require further calculations to interpret the marginal effects of the coefficients.[10]

Firstly, table 5 shows a set of regression specifications of common demographic and socio-economic covariates of life satisfaction, by now well-known from the happiness literature, and how these interact with the competition measure. The competition index is consistently positive and significant, but becomes insignificant (just above the 10% level) when income is subtracted from the regression. We know from the literature that income is a strong determinant of life satisfaction, and in this incompletely specified regression the effect of income slightly outweighs the effect of the competition index. This problem disappears when introducing further controls in the specifications below.

[9] Meaning that the difference between 2 and 3 is the same as between 6 and 7 and hence it is possible to say that an individual with a score of 4 is twice as satisfied as an individual with 2.
[10] Regression tables of all regression varieties are available upon request from the author.

Table 5: Covariate regressions, analysing the interactions between demographic control variables, income and the competition index. Dependent variable: Life satisfaction

Regression specification	I	II	III	IV	V	VI	VII
Competition index	0.345*	0.3613*	0.3317*	0.3570*	0.3461*	0.3717*	0.318
male		-0.234	-0.2486*	-0.2893*	-0.220	-0.247	-0.244
Age	0.000		0.000	0.000	0.000	0.000	0.000
Household size	-0.2310***	-0.2252***		-0.1083*	-0.2443***	-0.2358***	-0.1559**
Number of children	0.328***	0.3100***	0.1334**		0.3236***	0.3173***	0.2473***
Education level	-0.156	-0.158	-0.247	-0.182		-0.154	-0.240
Unemployed	-0.8920**	-0.8418**	-0.9571***	-0.9285**	-0.8251**		-1.0456***
Household income	0.0001***	0.0001***	0.0001*	0.0001**	0.0001***	0.0001***	
Constant	4.9505***	4.9975***	4.5818***	5.0463***	4.9774***	4.9636***	5.2603***
Observations	402	402	402	402	418	402	402
R-square (adjusted)	0.0556	0.0616	0.0361	0.0381	0.0602	0.054	0.044

*** 1%, ** 5%, * 10% significance level. Source: BHPS for 2007, all individuals

To examine the relationship between the competition index and life satisfaction I run four specifications throughout this section, with the main sample being English individuals who had been in hospital after 1st of September 2006, and a set of subsamples; consisting of various calibrations of social groups. The results are shown in tables 6-, and all tables include a standard regression with common covariates of life satisfaction, and various sets of control variables. We see that when introducing health status into the equations the r-square increases considerably (table with full coefficients is available in appendix). A higher self-rated health status is strongly positive and significant whereas being disabled is strongly negative, and again significant. The importance of health variables for the individual life satisfaction highlights the likelihood that differences in health care would influence SWB (the measure of welfare).

The overall explanatory power of the models, the r-square, ranges between 0.05 and 0.20 which is coherent with what is to be expected from SWB models. Full models with observable covariates of SWB explain between 8 and 20% of the variation, the rest is explained by unobservable variables such as personality traits and individual conditions influencing the SWB rating.

Table 6: Competition index OLS analysis. Sample: English individuals who had been in hospital after 1st September 2006. BHPS 2007.

Dependent variable "life satisfaction" (scale 1-7)

Regression specifications	I	II	III	IV
Competition index	0.3676*	0.3622**	0.6275***	0.5783***
Demographic covariates	Yes	Yes	Yes	Yes
Income	Yes	Yes	Yes	Yes
Health covariates	No	Yes	No	Yes
Local authority characteristics (LA)	No	No	Yes	Yes
Implementation rate in LA	Yes	Yes	Yes	Yes
Constant	3.8730***	2.5523***	3.1814***	2.0377***
Observations	401	401	401	401
R-square (adjusted)	0.124	0.201	0.134	0.208

*** 1%, ** 5%, * 10% significance level. Source: BHPS for 2007, all individuals

In table 6 the competition index is positive and significant throughout, controlling for demographic covariates, individual income, health covariates (health status and disability), local authority (LA) characteristics (average house price, unemployment rate), and implementation rate in the LA (what percentage can recall being offered a choice of hospital by GP). The results indicate a positive effect of a larger feasible choice set, and a higher competition between hospitals for individual wellbeing.

More choice and competition seem to be positive overall, however, on this follows the question of whether the results are consistent for all social groups as has been strongly argued as discussed above. In brief, the debate concerns issues such as the fact that prior to the introduction of the broad choice in health care policies of the 2000s, income was a strong determinant of the availability of choice, with only the relatively wealthy in a position to choose private care. The introduction of broad choice policies has therefore been described as equitable since they extend choice to all income groups. This may imply that lower income groups should gain relatively more well-being from the option to choose than higher income groups who already had a degree of choice. Level of education, meanwhile, is argued to play an

important role in the propensity to use and appreciate choice in health care as individuals with higher education are more likely to be IT literate, better able to grasp the presented choice set, more capable of making informed choices and more confident in their discussions with doctors (Dixon, Grand et al. 2003). Hence it is likely that individuals with a higher level of education will enjoy relatively more well-being from being offered a choice of hospital.

Here the welfare effects of choice on various social groups are based on a selection of groups identified with the purpose of assessing the equity effects of choice. There are several imputed social group variables available in the BHPS such as Goldthorpe's class schema, but the pre-calibrated variables imputed from other questions in the BHPS have the problematic drawback of reducing the sample size beyond feasibility for the regressions. This is also the reason for using only individual indicators such as income and education, rather than creating composite indicators of social groups. I use individual indicators to replicated the following groups: firstly, the “middle class” group that has been argued to be the target group of choice policies though “middle class electoral politics, identified through "above median income", "high education" and "skilled worker". According to this literature, the middle class group benefits most from choice policies and in health care this is argued to be a result of superior capabilities to make optimal use of the choice offered. The “working class” group is argued to be less able to make use and benefit from the policy, due to lower level of education and funds to travel to other hospitals than the local, here analysed as "below median income", "low education" and "unskilled workers".

The results are reported in table 7, and in order to avoid collinearity the demographic control variables, income and health controls have been removed. These are strongly correlated with social group, for example poor health is highly overrepresented in lower social groups (the regression have also been run with the controls included, an example can be found in table 8). The effect of competition is only positive and significant for individuals with above median income and high education whereas

the sub-samples of below median income earners, low education, skilled and low-skilled workers are all insignificant.[11]

Table 7: Competition index, OLS analysis of English individuals who were in hospital after April 2006, data from year 2007, by socio-economic characteristics
Dependent variable "life satisfaction" (scale 1-7)

Social group[12]	Below median income	Above median income	High education	Low education	Skilled worker	Low-skilled worker
Competition index	0.2265	0.5337**	0.7172**	0.2045	0.2419	0.274
Demografic covariates	No	No	No	No	No	No
Income	No	No	No	No	No	No
Health covariates	No	No	No	No	No	No
Local authority characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Implementation rate in LA	Yes	Yes	Yes	Yes	Yes	Yes
Constant	4.0192***	4.1662***	3.4339***	4.5634***	4.2852***	5.8651***
Observations	205	245	162	288	142	73
R-square (adj)	0.1478	0.2327	0.0158	-0.0108	-0.005	0.0487

*** 1%, ** 5%, * 10% significance level. Source: BHPS for 2007, individuals in hospital

As discussed above, choice is often argued to be a "middle class policy" primarily benefiting the more affluent and of higher education, and the results in table 7 is consistent with this argument. Individuals with higher than median income, and individuals with high education (defined as further education beyond a-levels, see appendix for data and variable specification) are the only groups that are significantly benefited by higher competition, and hence more choice in their local authority. Table 8 illustrates the robustness of the results for these groups when adding demographic covariates, health variables and household income.

[11] Some of the specifications have negative r-square which is explained by overall misspecification. They are only included for illustrative purposes, and the results are consistent when, if possible due to sample size, extending the specification with further controls.
[12] Further indicators that represent an insufficient sample size in the BHPS data was private health insurance

Table 8: Competition index, OLS analysis of English individuals who were in hospital after April 2006, data from year 2007, sub-samples "middle class" income and education

	Above median income	High education	Above median income	High education	Above median income	High education	Above median income	High education
Competition index	0.7642***	0.8695***	0.6143**	0.5973*	0.4417*	0.5873*	0.5337**	0.7172**
Demografic covariates	Yes	Yes	No	No	No	No	No	No
Income	Yes	Yes	Yes	Yes	No	No	No	No
Health covariates	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Local authority characteristics (LA)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Implementation rate in LA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	3.0107***	1.7875	3.1217***	2.5017***	3.1217***	2.5017***	4.1662***	3.4339***
Observations	202	162	212	162	205	245	245	162
R-square (adj)	0.303	0.237	0.1866	0.1475	0.1744	0.1511	0.2327	0.0158

*** 1%, ** 5%, * 10% significance level. Source: BHPS for 2007, individuals in hospital

The effect for individuals with above median income, 0.76 (full specification), and for highly educated individuals, 0.87, is considerably higher than the coefficient of 0.57 for the whole sample. This implies that the two sub-groups gain 20-30% more than the average individual and the results are consistent with the argument that choice policies are not primarily equitable as they benefit the already well off more. This may be due to higher level of education, and more capability to make use of the choice in a way that generates welfare. This speaks in favour of the argument in the literature that an important aspect of choice policies is to understand the capability on the part of the individual to actually make the choice.

5. Conclusions

The analysis above has provided insights into the welfare effects of choice policies in health care. The use of subjective indicators allowed for the identification of welfare effects, and is here argued to provide a more accurate account of individual welfare compared to the standard approach in welfare economics. The analysis considered satisfaction with the NHS and life satisfaction as subjective indicators of the welfare derived from interaction with the health services.

The results show an interesting relation between individual's desired level of choice, and how much choice they feel that they get in the NHS. A higher level of desired choice corresponds to a lower level of satisfaction with the NHS. Further, a higher level of perceived choice is associated with a higher level of satisfaction with the NHS. Interestingly, when considering individuals who have actually been hospitalised or had a close family member in hospital, but the results point towards a positive effect of the choice of hospital policy. Individuals in this narrow sample do not display a negative relationship between satisfaction with the NHS and the desired level of choice of hospital. The examination of the data on choice preferences in relation to the NHS indicates is that choice seem to matter for individual satisfaction, and that people increasingly welcome choice in health care

Further, the effect of competition on life satisfaction is positive overall, which indicates the more choice and competition improves welfare. However, this effect only holds for what is here defined as "middle class" individuals with a good income and high education. Hence, the argument that the “new” choice policies in health care are equitable is not supported by the present analysis. Rather, the results point towards the often made argument that choice is a middle class policy, mainly benefiting well educated, high income individuals who are able to make optimal use of the available choice.

The overall positive effects of choice indicated by the results of the empirical analysis has implications for the choice agenda of the EU, which has received critique for being overly neo-liberal and detrimental to the status of European welfare states. The

results indicate positive welfare effects, which is likely to be applicable to other countries carrying out similar policies. However, when discussing the equity issue the results are less transferable due to the highly diverse social structures in other European countries carrying out choice policies.

The positive effect for the middle class is particularly interesting in the political context of the UK, where the political system is highly polarised and the middle class is a strong and important electorate. Noteworthy is that both Labour and the Conservative party has emphasised the choice policies over time, which corresponds to the idea that choice is a middle class issue. However, the policy has very much been presented as an equitable policy, and the results of this paper questions the validity of the claims in practice. Potentially the results will change over time as the perception of choice as an institution for all individuals, regardless of social group may be established.

The results presented in this paper suggest a number of new directions for further research. Based on the "feasible choice-set" analysis at the provision level it would be possible to further investigate the possibilities to identify an optimal size of the choice set as well as effects of character of the choice provided. Such an analysis would test key arguments about social choice; that is, that it matters what kind of choice is presented, not simply more choice, but it may be welfare enhancing with fewer options but more diverse (Dowding John 2009). The same applies to the arguments of the libertarian paternalists that how much choice matters and that too much choice may be counterproductive. It has also been argued that it may be welfare enhancing to offer default options (Thaler and Sunstein 2003). Furthermore, assessing welfare effects on other choice policies such as choice of education and choice in long-term care would provide further insights.

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Appendix

Full table 3: Views on choice and the effects on satisfaction with the NHS. BSA 2007. Sample: all English individuals.

Dependent variable: satisfaction with the NHS

	I	II	III	IV
Female	0.0232	0.0106	0.0329	0.0193
Age	0.0080**	0.0063	0.0075**	0.0059
Health status	0.1497***	0.1309***	0.1381***	0.1291***
married/living as married	0.0973	0.0453	0.0757	0.0175
widowed	0.0208	0.0318	-0.0035	-0.0294
never married	0.0773	0.0495	0.0898	0.0359
Household income	-0.0224**	-0.0210*	-0.0188*	-0.0181*
Education level	0.1437	0.1005	0.0834	0.0659
in work, waiting to take up work	0.1995	0.2593	0.2591	0.2882
unemployed	0.3061	0.3514	0.4378	0.443
retired	0.325	0.3978	0.3817	0.4521
	-0.0864*	-0.1316***		-0.0677
How much choice of hospital should have?		0.2845***		0.1982***
How much choice have?			-0.1763***	-0.1493**
How much choice of treatment should have?			0.3037***	0.2001***
How much choice have?			0.3531***	
cut 1 _cons	-0.5012	-0.2406	-0.171	-0.2521
cut2 _cons	0.3599	0.6391*	0.7092*	0.6351
cut3 _cons	0.8633**	1.1470***	1.2228***	1.1529***
cut4 _cons	2.2405***	2.5376***	2.6289***	2.5673***
Observations	811	788	786	774
R-square (pseudo)	0.0174	0.0278	0.0278	0.0325

*** 1%, ** 5%, * 10% significance level.

Description of data

- British Household Panel Survey (BHPS). The BHPS covers the years 1991–2007 and follows and interviews adults (aged 16 and above) from a sample of about 5,500 households, collecting information about their incomes, labour market status, housing tenure and conditions, household composition, education, health and many other aspects of people's lives.
- British Social Attitudes Survey 2007. (Dixon 2008)
  Fieldwork between 15th June and 24th November 2007.
  Observations: England 2430
- National Patient Choice Survey conducted by Ipsos MORI on behalf of the Department of Health, July 2007 England. Fieldwork 16 to 29 July 2007. 62,264 Observations.

Item	Variable	Question/definition		Data (variable)
Choice variables from BSA	How much choice of hospital desired?	How much choice nhs patients should have about which hospital for treatment?		British Social Attitudes survey (chohosp)
	How much choice actually have?	How much choice nhs patients do have about which hospital for treatment?		British Social Attitudes survey (chohosp2)
	How much choice of treatment desired?	How much choice nhs patients should have about kinds of treatment?		British Social Attitudes survey (chotreat)
	How much choice actually have?	How much choice nhs patients actually have about kinds of treatment?		British Social Attitudes survey (chotrea2)
LA level controls for competition index regressions	Local authority characteristics (LA)	Average housing cost (average price of all sold poroperties during 2007)	Unemployment rate (Average unemployment rate per LA in 2007)	(ONS neighbourhood statistics)
	Implementation rate in LA	National Patient Choice Survey, % of indivudals recalling having been offered a choice by GP.		
Social group indicators	High education	higher degree, first degree, teaching qf, other higher qf		BHPS (qfedhi)
	Low education	gce a levels, gce o levels or eq, commercial qf, no o levels, cse grade 2-5, scot grade 4-5, apprenticeship, other qf, no qf		BHPS (qfedhi)
	Skilled worker	professional occ, managerial & technical occ, skilled non-manual		BHPS (jbrgsc)
	Low-skilled worker	Skilled manual, partly skilled occ, unskilled occ, armed forces		BHPS (jbrgsc)

Hospital competition index

Within this market area, to measure the degree of market concentration, the negative natural logarithm of an HHI (Hirschman-Herfindahl index of market concentration) based on hospitals' patient shares. This negative log transformation of the HHI is convenient because it increases with competition, with zero corresponding to monopoly and infinity to perfect competition. For given market area j, the competition index is given by:

$$nlhhi_j = -\ln \sum_{k=1}^{N} \left(\frac{n_k}{N_j} \right)^2$$

Here, nk is the number of procedures carried out at hospital site k within market area j and Nj is the total number of procedures carried out in market area j.

Matching of hospital competition index and BHPS by local authority

The hospital competition index is a number between 0 and 1 for each hospital. As lowest geographical aggregation in the BHPS is local authority code, the competition index had to be aggregated by local authority area. In … of the cases there was more than one hospital per local authority and in those cases the average value of the individual competition index for each hospital was calculated. In most of the cases with more than one hospital the competition index was very close between the present hospitals, but in a small number of cases the difference was considerable. In these cases an individual judgement was made of the size of the local authority and the localisation of the hospitals to assess the appropriate competition level for the local authority. The index for each local authority was then merged onto the BHPS so that each individual was assigned a value for the local authority of residence.

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