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London Patient Choice Project Evaluation

A model of patients' choices of
hospital from stated and revealed
preference choice data

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Summary

Introduction

The London Patient Choice Project (LPCP) was established to improve choices for patients who are clinically eligible for treatment and who have been waiting for treatment at an NHS London hospital beyond some target waiting time (six months at the scheme's inception; this has subsequently been reduced). As the target waiting time approaches, patients are given an opportunity to choose from a range of alternative providers who have the capacity to offer earlier treatment.

The aim of this study is to investigate the following questions regarding patients' responses to the option of quicker treatment:

- ❖ What are the factors that patients consider when deciding whether to accept the alternatives they are offered?
- ❖ What *weight* do patients place on each factor when making their choices? What tradeoffs are patients prepared to make between time waited and other factors?
- ❖ Are there any systematic differences between sub-groups of patients (in terms of personal, health or socio-demographic characteristics) in terms of how they respond to choice? What are the characteristics of those who are more likely to opt for quicker treatment?

In this report, we present our analysis of these questions using stated preference data elicited from LPCP participants and revealed preference data that indicates the choices that were actually made by patients in the course of the project. These two sources of data complement each other, and a model has been estimated simultaneously on the two datasets.

Data on patients' choices

Data on hypothetical choices were obtained using a discrete choice experiment: participants were presented with a series of choices between pairs of scenarios from which their preferences for treatment are discerned. The design of the choice experiment was informed by a literature review, and refined following cognitive testing and piloting. The

respondents were recruited and mailed the surveys between September 2003 and January 2004.

The final study design examined the influence in the following factors on the choice between the home hospital and an alternative hospital:

- the **waiting time** at the home and the alternative hospital;
- the **travel time** to the alternative hospital, including whether the hospital is abroad;
- whether the **transport** was organised and paid for by the NHS or the patient;
- the **reputation** of the alternative hospital;
- the location of any **follow-up care**.

The results from the stated preference data indicate that 30% of the patients in our study would stay with their home hospital in all the scenarios offered; whereas, 5% consistently opted to take the treatment at the alternative hospital (with its shorter waiting time). 55% of patients 'switched' between choosing home and alternative treatment depending on the nature of the scenarios. The remaining 10% displayed choices where they would always choose to "opt out", i.e. decline treatment or seek treatment outside of the NHS, or always choose between one hospital alternative and the "opt out" option. In total 24% of the patients considered opting out in at least one of the scenarios presented.

The *revealed* preference data showed that, within the choices offered under the LPCP, 35% of patients chose to stay at their home hospital and 65% of patients chose to move to an alternative provider (with a shorter waiting time). An "opt out" option was not offered in practice to patients through the LPCP, whilst in practice patients may decide that they would not have wanted NHS treatment at this point, this information was not recorded so could not be incorporated in the models.

Modelling of choice behaviour

From the hypothetical choices offered in the questionnaire we found that patients were *less* likely to opt for quicker treatment at an alternative provider if:

- the reputation of the alternative hospital was worse than (or unknown) relative to the 'home' hospital;
- the travel time to the alternative provider increased relative to travel to the 'home' hospital;
- the alternative treatment offered was abroad;
- patients had to organise and pay for their transport to the alternative provider;
- follow-up care was delivered by the alternative rather than the home hospital.

Patients were also less likely to opt for quicker treatment at a hospital outside the UK if they had been on a waiting list for less than 6 months – thus, as waiting times fall in NHS hospitals overall, patients are less likely to opt for quicker treatment abroad.

More importantly, our model allows us to identify the *magnitude* of the influence these variables exert on patients' choices. From this we can also see the relative importance of each of the factors. In our analysis we have calculated the marginal rates of substitution between each of the factors and waiting time; this provides insight into the trade-offs made and the relative weight placed on each factor; we have also provided confidence intervals on these ratios to illustrate the extent of any uncertainty in the terms estimated within the model. While shorter waiting time is important to patients, our results suggest that whether patients opt for quicker treatment depends crucially on, for example, whether they can avoid travelling abroad, and whether they can avoid treatment at a hospital where the reputation is worse or unknown relative to their current hospital. These results have important implications for policy makers – for example, information about the quality and reputation of alternative providers is likely to play a key role in the uptake of choice.

Further, our results suggest there may be important implications of a choice policy for equity. With respect to the characteristics of those making the choice, patients are less likely to opt for quicker treatment at an alternative provider if:

- they are older (particularly if they are more than 60 years of age); or
- they have low education levels; if they have family commitments; or
- their income is < £10,000 p.a.

These factors interact with the 'choice' characteristics noted above: for example, while a poor or unknown reputation of the alternative hospital is associated with patients being less likely overall to opt for quicker treatment at an alternative hospital, the influence of reputation was much stronger for those with income >£10,000. Similarly, the influence of the transport arrangements for treatment at the alternative hospital was important overall, but much more so for parents or guardians of children.

The choices that patients stated they would make given the hypothetical scenarios they were presented with in our survey have been supplemented by information on the choices that have been made by patients in real choice situations.

The revealed preference data showed that when facing a real choice, patients tended to act to minimise their waiting and travel time, whilst trying to obtain treatment at a hospital that is perceived as offering a high quality of care. There are also discernable patterns of choices, however. For example:

- patients' age is positively associated with a tendency to stay at their local hospital to which they had originally been referred;
- men are more likely to decide to move to an alternative provider than women;

- large numbers of patients will opt for treatment at an alternative provider for procedures within the ophthalmology specialty, whilst those requiring gynaecological procedures will stay at their local provider in larger numbers.

In order to draw maximum information from the stated and revealed preference data, a model has been estimated using both sets of data within a common modelling framework. This has been achieved by using the variables that are common between both sources of data, namely: the remaining waiting time, the travel time, the patient's age and their gender. This model corrects the overall sensitivity of the stated preference model in predicting choices between alternatives and creates a model where the terms estimated through the hypothetical choices can be related to the observed choice behaviour. As such, it provides a model that can be used to inform how patients may respond to different policies that offer quicker choice of treatment for those on existing waiting lists.

Policy Implications

Our analysis concentrates on the way that patients may respond to choice. The behaviour of patients will clearly have impacts on waiting times, although the extent of these impacts is hard to ascertain directly from the results we present as we focus on the drivers of demand and at present there are no corresponding models of supply. The LPCP evaluation strand being conducted by the group from the University of York examines the system wide impacts of patient choice and provides a detailed analysis of how the LPCP may or may not have reduced waiting times within the hospitals participating in the project.

During the lifetime of the LPCP (and this evaluation), national policy on patient choice in the English NHS has been evolving. In particular, in August 2004, the Department of Health published guidance on the introduction of choice for patients at the time of GP referral. This new 'Choose and Book' policy differs from the LPCP choice model in that it is essentially a choice of outpatient department (and associated inpatient care if needed), not inpatient care per se. Given these changes, we examine the findings from this strand of the LPCP evaluation in the wider policy context of patient choice and its ongoing development.

Our results suggest that while some patients are probably willing to spend a significant time travelling to go to the hospital of their choice, on average, waiting times at the more distant alternative hospital would have to be considerably shorter than the local provider to persuade patients to travel. In general, while patients prefer not to travel abroad, having their travel paid for them by the NHS can significantly ameliorate their negative valuations.

Our findings also indicate that patients place a positive value on the NHS organising transport (rather than the patients having to do this themselves) even if transport costs have to be met by patients. However, current guidance on transport arrangements for choice at point of referral state that the NHS will not arrange or pay for transport except for patients currently eligible for free transport either as a result of low incomes or on the basis of their medical condition. Our findings suggest that this decision will reduce the

potential take up of choice in cases where patients have to organise and pay for their own transport.

As might be expected, reputation emerges as a very important factor in patients' decisions about whether or not to take up an offer of quicker treatment at an alternative hospital. Our analysis suggests that where the reputation of the alternative (shorter wait) hospital is either worse than the existing (longer wait) hospital or simply unknown, patients place a relatively high negative valuation on the choice. In particular, better off patients (with household incomes over £10,000 per annum) have a negative valuation for a worse reputation which is over one third higher than those with incomes below £10,000. There are potential equity implications here.

Our use of a comparative reputation factor (i.e. worse, or the same, or better than the home hospital, and unknown) begs the question as to what actual measures of reputation patients might find useful to inform their choices in a real situation. Current guidance under Choose and Book indicates that, together with waiting times and location of hospitals, patients will need information on (other) patients' experience of hospitals and data on clinical quality to support their choice of hospital. However, although there is information from national patient experience surveys on which to draw, there is a dearth of information on clinical quality, and in particular, information on health outcomes.

Current policy for choice at the point of referral notes that while aftercare will be provided at the provider originally chosen, any exceptions - for example, providing aftercare locally, needs to be managed through local processes. Our research suggests that patients place a negative value on follow-up care provided either at the alternative hospital or the patient's own home (rather than at the home hospital). However, relative to the other factors influencing choice, patients place lower values on follow-up care.

Given that all the attributes we have discussed are to an extent amenable to policy change (at a cost), this means that it is possible for policy makers to model the size of the take-up of choice under different policy scenarios. If a goal is to maximise the take-up of choice, then our results suggest, for example, that the NHS should not only arrange transport to alternative hospitals, but for parents in particular, the NHS should also pay for transport. In fact, current policy, as we noted above, is not to organise or pay for transport. In addition, follow-up care should be provided at the home hospital (rather than the alternative hospital) if the negative valuations patients' place on these arrangements is to be minimised.

An important issue that our analysis helps to explore is whether, and to what extent, different patient groups react differently in terms of the values they place on factors affecting the choice decision. For example, our results show that patients who are older, female, with low education levels, or who are parents/guardians of an under 18-year old are less likely to select faster treatment at an alternative hospital. Of course, the presence of differences does not automatically mean that patients' different choices should be deemed inequitable (or, for that matter, that every - or indeed any - effort should then be made to correct for the inequity, given that such correction will have an opportunity cost). Value judgements need to be brought to bear on these issues which go beyond this current analysis. However, we would point out that different patient groups do place different values (both positive and negative) on various attributes (under various policy scenarios)

and that while such inequalities may not be interpreted as inequities, differences may be of some concern.