frontier economics

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JANUARY 2007

A healthy choice?

MANAGING DEMAND IN THE NEW NHS

The introduction of choice into the UK's National Health Service is intended to allow patients to move around the system, trading quality of care against convenience and waiting times. To manage this new "market" efficiently, the Government needs a clear understanding of its impact on demand and revenue. Will some hospitals become super-profitable while others face bankruptcy? Frontier has been working with a number of the players to devise ways of anticipating and avoiding such extreme outcomes.

In July 2004 the British Government published its improvement plan for the National Health Service (NHS), intended to make the health service more responsive to patients. The mechanism for achieving this is choice - enabling patients (largely through their GPs) to decide which hospital or doctor to use. Although some choice is already provided in the NHS, it is being greatly expanded. By 2008, NHS patients will have the right to go to any health care provider, subject to the provider's ability to meet standards set by the NHS, and willingness to accept the price the NHS will pay.

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The aim is both to empower patients and to use competition to drive improvements in healthcare (see bulletin *What am I bid?*). Allowing patients to choose will, it is hoped, divert demand from poor performing hospitals to good ones, leading to higher treatment standards and lower waiting times.

For patient choice to function as an effective incentive mechanism, it needs to have direct financial consequences. So choice will be accompanied by the introduction of payment by results (PbR). Hospitals and other providers will receive payments from Primary Care Trusts (local health bodies responsible for allocating much of the NHS budget) based primarily on patient numbers.

NOT AN EASY ANSWER

Choice brings uncertainty: which hospitals will gain patients, which lose, and to what extent? Will less popular hospitals enter a spiral of decline, or will their shorter waiting times act as an automatic stabiliser? Will demand become concentrated at regional or national "star" hospitals, or will the disadvantages of being treated a long way from your home maintain demand at local centres?

Monitoring the impact of choice is largely the responsibility of the 10 newly-amalgamated Strategic Health Authorities (SHAs). They will have to respond quickly to signs of change in hospitals' spending and revenues, if they are to avoid spiralling deficits and ensure investment is made where needed. Frontier's work focused on providing them with answers to some key questions.

- Will patients become more sensitive to perceived quality differences between hospitals, as compared with differences in waiting times?
- How will the entry of new providers affect the demand for existing services?
- How will the dynamics of choice affect capacity requirements at different hospitals? What are their future requirements likely to be?
- What can be done to decrease the risk of financial deficits?

The SHAs face two different but interconnected challenges:

1. **Financial issues.** To ensure that the healthcare institutions they oversee continue to be viable, SHAs need to:
    - identify the most useful financial indicators; and
    - use the information to decide on the appropriate response.
2. **Quality issues.** The SHAs must also ensure:
    - that they have the right systems in place to enable them to monitor a range of quality indicators; and
    - that providers have the right incentives to meet quality targets.

Frontier has developed the first detailed model that allows authorities to simulate the combined effects of choice and PbR in the UK, the Patient Choice Simulation (PCS) model. For any given set of key variables, the model simulates flows of patients between hospitals, producing both operational and financial outputs. A summary of the model's structure is set out in Figure 1.

A healthy choice?

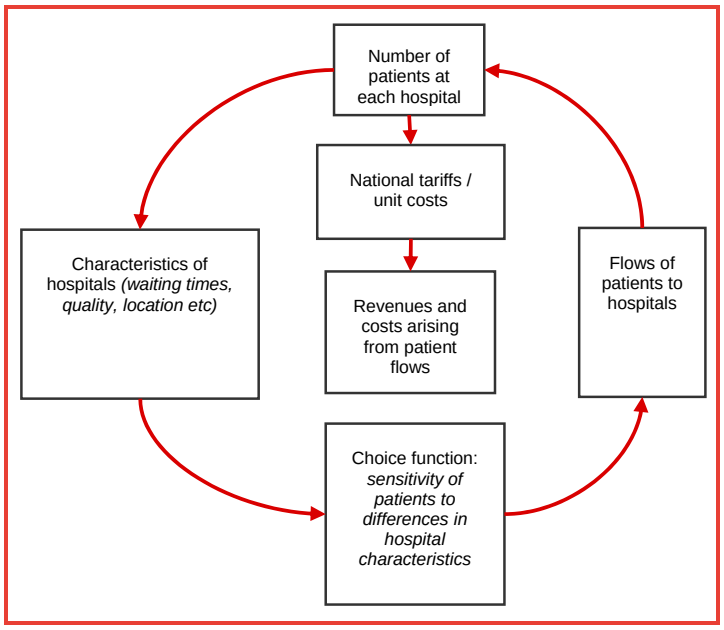

Figure 1: Overview of PCS model

Existing evidence supports the general presumption that the key variables affecting patients' choices between hospitals will be waiting times, the quality of treatment and location. But which will prove to be the most powerful influences? As illustrated in the bottom box of Figure 1, the PCS model allows assumptions about the relative importance of these three factors to be varied in order to explore the possible effects of introducing choice.

These assumptions then drive the flows of patients (illustrated on the right-hand side), which in turn determine hospitals' costs and revenues (illustrated in the centre column). Finally, some characteristics of hospitals (notably waiting times) are themselves, to a certain extent, the outcome of patient choice. If more patients choose to go to hospitals with shorter waiting times, so these will increase, at least until such hospitals invest in additional capacity. As shown in the left-hand segment of Figure 1, the PCS model captures these dynamic effects.

SHOULD WE EXPECT THE WORST, DOCTOR?

There has been speculation that these reforms will lead to significant, unpredictable and damaging fluctuations in revenues and patient numbers. The PCS model however suggests that in the right circumstances, patient choice will lead to convergence and stability, as illustrated in Figure 2.

This shows the waiting times (in months) for ear, nose and throat treatments at a hypothetical set of five hospitals. In the first year, Hospital 5 has a six-month waiting list, whereas there is no wait at all at the others. The impact of patient choice is that patients begin to substitute away from Hospital 5; waiting times there begin to fall, while elsewhere they begin to increase. This trend continues as patients switch, until the expected waiting times start to converge. A steady state is eventually reached, in which smaller but still significant differences in waiting times persist, reflecting the overall ranking of those hospitals by patients.

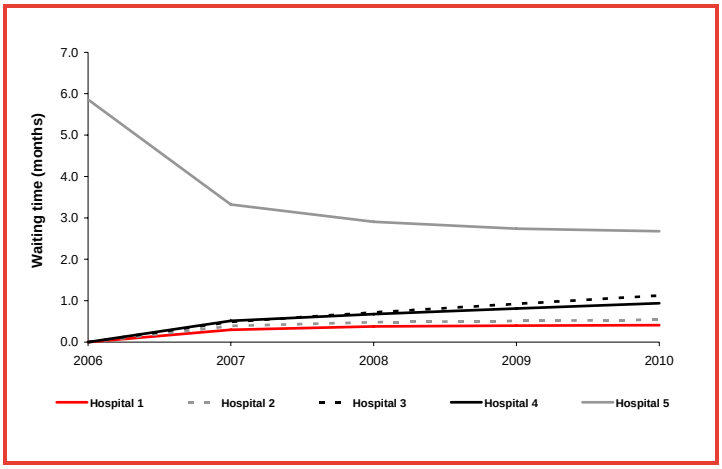

Figure 2: Projected waiting times for ear, nose and throat operations at six hypothetical hospitals

Source: Frontier analysis

Of course, the PCS model also allows us to explore situations in which convergence does not occur, resulting in instability for hospitals. Suppose, for example, that in the case illustrated above, Hospital 1 is seen as much worse than Hospitals 2-4, let alone Hospital 5. Then choice may result in an increase in waiting times at Hospitals 2-4 but a decline in demand for care at Hospital 1, to the point where it is in serious financial trouble. Other problems may arise where knowledge of waiting times may be imperfect and lag reality: then demand may oscillate, complicating hospital management and investment decisions.

The PCS model tells us that the pace of change depends critically on the extent of perceived differences between hospitals and the sensitivity of patients to these differences. The more powerful each of these factors proves to be, the quicker and greater an impact patient choice will have. The model can be used to identify the possible consequences for each hospital and treatment type. It is sufficiently flexible to be adapted to other health systems: we have, for example, used it for a client involved in healthcare reform in another European country. Here it is being used to help analyse not just patient flows but also the interaction between hospitals, the regulator and the private healthcare insurance market.

CONCLUSION

In the rapidly changing world of patient choice, the SHAs need to understand how the pattern of demand will evolve. Which hospitals are vulnerable? Which patients will gain, and which may suffer? Frontier's work for UK and other European healthcare bodies illustrates how we are able to combine economic insight, sector experience and technical skills to provide bespoke models and consulting solutions for clients, helping them to predict and prevent problems.

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