

# CHOICE

Will More Choice Improve  
Outcomes in Education and  
Health Care? The Evidence  
from Economic Research



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Carol Propper and  
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The Centre for Market and Public Organisation

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Choice isn't an end in itself. It is one important mechanism to ensure that citizens can indeed secure good schools and health services in their communities. Choice puts the levers in the hands of parents and patients so that they as citizens and consumers can be a driving force for improvement in their public services.

*Tony Blair, 2004*

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# Will More Choice Improve Outcomes in Education and Health Care?

## The Evidence from Economic Research



Extending choice in public services is currently a popular policy. For education it is proposed by both Labour and the Conservatives. For health care it is proposed in some form by all parties. In this report, we provide a summary of the evidence from economic research on whether more choice will improve outcomes in these two key public services.

### Why more choice?

Why does enhancing choice seem so attractive to policy-makers? The expectation is that it will improve education and health outcomes. Competitive pressure helps make private firms more efficient. They cut costs and improve their goods and services in order to attract consumers, and this continual drive for improvement is good for the economy. Consumer choice acts as a major driver for efficiency.

It seems easy to transfer this logic to the provision of public services. Giving service users the ability to choose applies competitive pressure to providers (schools and hospitals) and, analogously with private markets, they will raise their game to attract business.

Despite the simple appeal of 'choice', the term is used in many different ways. We describe what choice actually means in education in Box 1 (on page 5) and in health care in Box 3 (on page 11). There are three important dimensions of choice:

#### *Who chooses?*

In education, the starting point is that parents choose schools. But what happens when a school is full and there is insufficient flexibility or spare capacity in the system? Schools have to ration the scarce places and this necessarily involves rules for deciding who will be chosen.

Decisions in health care require more specialised knowledge, and so the choice is delegated to an agent, typically in England a general practitioner (GP).

#### *What do they choose?*

Parents are likely to care about the quality of education, perhaps judged by a school's previous results. They may

also care about the peer group for their child, both in terms of the impact on education outcomes and in a broader social context.

In health care, while patients are often fully insured against the price, the body responsible for buying care will be interested in both price and quality.

#### *What are the constraints on choice?*

For parents, the most obvious constraint is that their school of choice is full. Transport time and costs may be a constraint on choosing other schools, and house prices may be a constraint on moving.

In health care, the chief constraints are lack of information on the quality of care, travel costs and the other costs of using care.

#### *Choice in England*

We describe the current (January 2005) policies of the major political parties on choice in education and health on pages 12 and 13.

Our own research indicates that most secondary schools have a number of alternative schools within a short drive (see Figure 2 on page 8). Similarly, our research indicates that most hospital trusts have close alternatives (see Figure 1 on page 7).

### **The impact of extending choice in education**

From the economic evidence, we draw the following conclusions:

1. A successful choice policy would improve standards for most school students. On top of that, increasing school choice may mean that the working class gain and the middle class lose, as the house price premium from living near a good school is reduced.
2. The key to a successful school choice policy is flexibility in the supply of school places. If greater choice is to be universal and systemic, then it should not increase the

'sorting' or segregation of students, which currently comes about by neighbourhood (based on residence) or ability (selection into grammar schools). To prevent more sorting, policy needs to make it possible for existing schools to expand or contract, for new schools to start and for poor schools to close.

3. The role of children's peer groups is important in determining the effects of school choice. The quality of peer groups may influence parents' choices and the capacity of a school to generate good exam results.

### **The impact of extending choice in health care**

From the economic evidence, we draw the following conclusions:

1. Choice will increase competition between hospitals. Hospitals may react to this pressure by merging, making an appeal to the fact they are not-for-profit and that they serve local communities. But by decreasing the number of providers in a market, mergers can reduce the benefits of competition. Proposed mergers will therefore need to be subject to more rigorous evaluation, such as the standard pro-competitive market tests.
2. Policies that increase choice among hospitals will lead to changes in patterns of treatment. Certain activities will become more profitable while others will be loss-making. Hospitals may specialise in some treatments and stop doing others. Certain patients may be more profitable to treat than others. Differences between patients in the treatment they receive are likely to emerge. The exercise of choice may also be more costly for some patients than others.



# Justification for our conclusions on choice in education

## 1 Increasing school choice creates losers as well as winners

- A successful choice policy will make most students winners as the competitive pressure introduced by choice pushes up standards. Within the winners, an important group will be students from poorer backgrounds who will be able to attend schools they could not afford to live near.
- But the policy will also necessarily create significant losers. A successful choice policy means that access to a school does not primarily depend on where a student lives. In the current system, residence matters a great deal, and a particular address can provide an entrée to a particular school. Such an attribute has become capitalised in house prices. This premium would be lost – the prices of houses near the best schools would fall – with a move to a choice system. This could be a significant loss for a significant group of people, and will mostly affect the middle classes.

## 2 The need for flexibility in the supply of school places

- The flexibility of the supply side is crucial to the success of a policy of extending school choice. This means that popular schools need to be able to expand reasonably quickly and significantly to meet demand. It also needs to be made easier for new schools to enter the market. If such flexibility is limited, schools have to choose among the excess applications. The evidence suggests that such a constrained process of choice by both parents and schools produces more segregated school populations.
- There is clearly a trade-off between flexibility and regulation if school choice is to be extended. A successful choice policy may mean a reduced need for explicit accountability systems, since parents will find it easier to leave a poorly performing school. But there will still be a need for regulation on standards, as well as bounds on curriculum content.

### 3 The role of peer groups partly determines the effects of school choice

- The role of peer groups may have an impact both on parents' preferences and on students' achievements.
- On the demand side, the question is 'what are parents choosing?' If the main basis for choice between schools is the quality of teaching, the competitive pressure created by choice should have a positive impact on this as parents make their decisions. But if parents are choosing schools on the basis of peer groups for their child, then the outcome of a choice policy is more problematic. The scarce resource of 'acceptable' peer groups will be rationed in some way, and the middle classes are likely to emerge winners. Choosing schools on the basis of test scores is partly about choosing peer groups, since test scores depend heavily on earlier attainment.
- On the supply side, the question is what makes a good school good? If it is the management, leadership or teaching style, then this could be extended or (to some degree) replicated by good, popular schools getting bigger, or by them taking over other schools. Thus, choice will be effective. But if a school achieves high scores primarily because of a good intake of students (good peer groups), then choice will have less of an impact on improving school quality. Making such schools bigger will eventually dilute the peer group, though this is a complex and ill-understood process.

#### Box 1: Choice in education

There are two broad types of choice-based mechanism that we discuss in this report: 'generalised but differential' choice (our term for the current system in England); and voucher systems.

##### *Generalised but differential choice*

Generalised choice allows all parents to express a choice of the preferred school for their children. But the extent to which that preference can be realised varies across the country. In some rural areas, for example, there may only be one school within a reasonable travel distance.

Even where there are several schools nearby, not all parents achieve their first choice of school. For example, certain popular schools become oversubscribed and cannot accept all the students who want to attend. Places at such schools are then allocated, either by the school itself or by the local education authority, according to published admissions criteria.

These criteria vary, but usually some importance is placed on geographical distance between the child's home and school. This has knock-on effects on the housing market, particularly around popular schools.

##### *Voucher systems*

This is the predominant choice system in the United States. A voucher is a publicly funded coupon that a student takes to the chosen school (which may be a state or private school). When he or she enrolls, the school receives revenue equal to the amount of the voucher (Hoxby, 2003a).

Vouchers are inherently flexible and can be designed in many different ways. The design of a voucher scheme affects its outcome, so it is difficult to generalise about the impact of voucher programmes. In particular, a voucher scheme can be generalised (in which case all parents are able to take up the option) or targeted at specific groups.

Targeted vouchers may be designed for use by certain types of student, regardless of the school they currently attend, or by all students at particular schools, often those identified as failing.

# Justification for our conclusions on choice in health care

## 1 The need for market regulation

- US experience suggests that hospitals in a competitive market will seek to reduce this competition by merging and engaging in activities to keep out competitors.
- National Health Service hospitals will not be able to set prices nor negotiate access rights with different groups of insurers. They may therefore pursue mergers as a way of decreasing competition. The inclination of the Department of Health may be to allow such mergers, on the grounds that hospitals serve their local communities and because, historically, mergers have been used as a way of closing hospitals in financial difficulties.
- But as the evidence suggests competition is beneficial, gains from mergers will need to be weighed against the costs of reduced competition. Furthermore, US experience suggests that the benefits of mergers between not-for-profits may well be exaggerated by those appealing to their community orientated motives. If competition between hospitals is to operate well, the Department of Health will need a pro-competitive strategy.
- The provision of good quality information is of central importance to the operation of choice. Experience from the United States and from non-health markets suggests the need to make information widely available. Even if it is initially unreliable, public disclosure should be seen as an evolutionary process. Comparative data should be good enough to be fair and credible but perfect data will never exist. Providers being judged, or whose market position depends, on public information will have strong incentives to improve their quality.

## 2 Differences in the treatment of different patients are likely to emerge

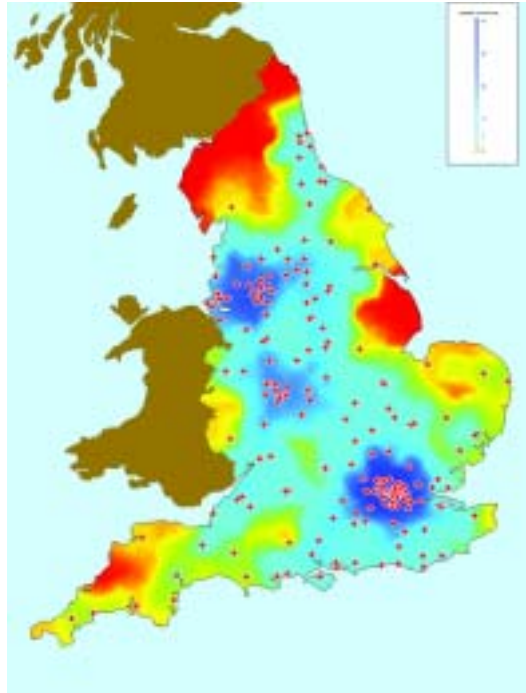
- The prospective price system that is being introduced as part of the choice programme gives hospitals an incentive either not to accept more severely ill patients ('patient dumping') or to 'undertreat' such patients. This will result in poorer outcomes for more severely ill patients. If hospitals are at the same time monitored on patient outcomes, the reduction in quality will negatively affect their performance and this will increase the incentive not to treat high cost patients. These incentives are present whether or not competition



exists, but are intensified when hospitals are subject either to actual competition or competition based on league tables.

- Greater choice may lead to the concentration of sicker individuals in high quality hospitals, because of their better reputation and a fixed price. This concentration may lead to better outcomes, if the treatment of larger quantities of more similar cases in any one hospital improves outcomes. On the other hand, if hospital reimbursement does not fully reflect patient severity, hospitals attracting a greater proportion of more severe patients will make financial losses, perhaps leading them to cut quality in order to treat patients at the common price. This may be exacerbated by the entry of new providers who concentrate on patients who are easier to treat.
- Single pricing and the encouragement of entry will mean that hospitals enter and provide a limited set of services and may undercut providers who currently cross-subsidise across a wide range of services.
- The buyers of health care in England (primary care trusts or PCTs) will have incentives (as well as requirements) to promote patient choice if the performance targets they are set include waiting times, as choice will be one way to cut waiting times. But as they will also be monitored on remaining within their budget, they will have incentives to minimise the cost of running a choice scheme. As the costs of choice are likely to be less for a more affluent population, this may mean that those who exercise choice are the more affluent and better informed. This may lead to differences in waiting times, poorer individuals having to wait longer because their travel and information costs are higher. PCTs may need to be given funds for choice that are based positively on the deprivation of their population and to 'ring fence' this for use on certain population groups.

**Figure 1: Feasibility of choice of acute hospital trust**



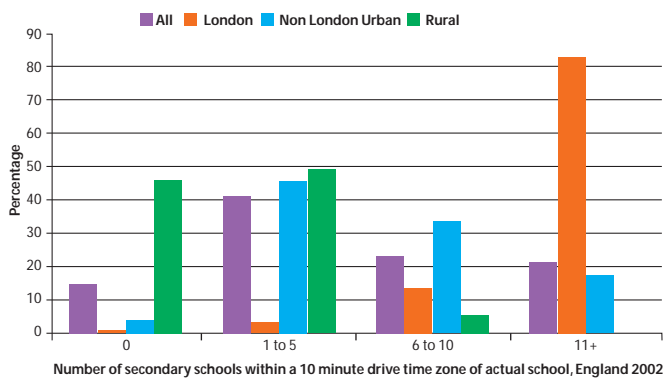
**Number of acute NHS trusts within 60 minutes, England, 2001 (the strongest red shading indicates areas where there are fewest hospitals and the strongest blue shading indicates areas where there are most hospitals within a 60 minute travel time)**  
Source: Damiani et al (2005)

# Lessons from economic research on choice in education: a summary

## 1 Information, incentives and the nature of choice

- For choice to work, the supply side must be responsive to (changes in) demand. But the form that these responses take depends on the type of performance measure used and the incentives thereby created.
- If parental choice is based on the information contained in performance measures, schools have the incentive to improve measured performance. This does not necessarily mean an improvement in actual outcomes.
- Different performance measures may be suited to the different objectives of accountability and facilitating a choice programme.

Figure 2: Feasibility of choice of secondary school



Source: Burgess et al (2004)

## 2 Sorting

- The impact of choice on sorting needs to be compared with how students would be sorted among schools via the existing allocation mechanisms of neighbourhood and selection.
- The nature of the assignment of students to schools influences both school sorting and neighbourhood sorting.
- There are no very general predictions from economic theory about the impact of choice on student sorting; it depends on the nature of the choice mechanism and on the assumptions made in the analysis.
- The evidence suggests that, compared with neighbourhood schooling, parental choice with supply-side flexibility reduces sorting; parental choice plus poor supply-side flexibility increases sorting.

### 3 Efficiency

- There are no very general predictions from economic theory about the impact of choice on school productivity.
- There is empirical evidence of test-score gains for some of the students who exercise choice, but this is not a general result, either across different types of student or different types of choice programme.
- The main impact of choice may come from the pressures of competition rather than the actual exercise of choice. There is strong US evidence that schools facing such a competitive threat respond by increasing productivity.

### 4 Winners and losers

- An increase in the degree of choice, and hence a decoupling of the school-residence location decision, will have knock-on effects on house prices.
- The potential gains – or losses – from choice will be influenced by the extent of the peer group effect within schools.
- Vouchers can be targeted at particular groups, for example, poor families or families of children at poorly performing schools. But research shows that the final users of such vouchers may differ significantly from the average intended user.

### Box 2: Performance measures in education

The provision of information on school performance is a pre-requisite for informed parental choice. In England, there are two key sources of centrally collated information: Ofsted reports and the annual publication of summary performance measures in what are commonly referred to as the school league tables.

#### *Ofsted reports*

The government agency Ofsted (the Office for Standards in Education) makes an in-depth site visit to every school at least once every six years. Inspections must assess and report on four aspects of school performance: the educational standards achieved; the quality of education provided; the quality of leadership and management; and the spiritual, moral, social and cultural development of students (Ofsted, 2003). These reports are made available to parents of children in the school, as well as being more broadly accessible, via the Ofsted website (<http://www.ofsted.gov.uk>).

#### *League tables*

A range of performance indicators is published for each school in England at both primary and secondary school level. As well as information on student absences, the league tables report the results of exams taken by all students at the end of each Key Stage of the national curriculum; at the ages of seven and eleven (in primary school) and fourteen and sixteen (in secondary school).

Until 2002, the league tables were based only on raw output – unadjusted test scores – and information was provided at the school average level. For secondary schools, the primary focus of both schools and parents has been the raw output indicator of the proportion of children gaining five or more GCSE passes at grades A\*-C.

Since 2002, the league tables have also included indicators of the value added by the school between Key Stages. The aim of using a value added performance measure is to isolate the impact that the school environment has on student progress between two points in time. It does this by incorporating prior attainment, which helps to account for factors beyond the school's control, such as family background and other personal characteristics.

# Lessons from economic research on choice in health care: a summary

## 1 The effect of competition between providers

- The effects of competition depend on the exact nature of the health care market. Important aspects of the market include whether prices are set centrally or not, who makes the choice of provider, and the availability of information on quality and prices.
- Competition between hospitals appears to be associated with lower costs. The relationship between competition and quality has not been studied as extensively as the relationship between competition and cost. US evidence suggests that quality is higher where markets are more competitive, though this was not the case in the English internal market.
- Not-for-profit hospitals appear to respond to competition in very similar ways to for-profit hospitals.
- Poor information will limit the effectiveness of competition and choice.

## 2 The responsiveness of patients to choice

- Direct choice of hospital by patients at point of use is not a prominent feature of many OECD health care systems. Evidence from UK pilot schemes in which there was direct choice indicates that choice was widely taken up and exercised by all types of patient. But the scheme was precisely targeted and individuals given financial compensation for travel. Evidence from the Nordic countries and France suggests that without this financial compensation, richer individuals are more likely to exercise choice.
- Recent US evidence suggests that increased patient choice may lead to greater differences in severity of patients' illnesses across hospitals.

### 3 Information on providers

- Information is often too complex for direct use by consumers and is often in a form that is of limited use for buyers of health care. It is most widely used by providers themselves.
- Providers respond quickly to the incentives given by the information. Their responses will be to improve outcomes that are measured. This may or may not improve outcomes: there is considerable evidence of 'gaming the system'.

### 4 The use of centrally set prices

- Competition between hospitals is often promoted by centrally set prices, which generally are set at the average cost of a treatment across all providers.
- Centrally regulated prices induce rapid responses from providers, particularly in competitive markets.
- Centrally set prices may encourage the entry of providers that concentrate on providing a limited set of easier to undertake procedures.
- Fixed prices encourage the selection of less ill patients and the 'undertreatment' of those whose expected costs are greater than the fixed price.
- Average cost prices that do not take into account quality of the provider tend to be neutral or even detrimental to quality.

### Box 3: Choice in health care

Choice in health care may include choice of location of treatment, choice of doctor or other medical staff or choice of procedure. In this report, we focus on choice of location of hospital treatment (which may also entail choice of doctor or other medical staff), as this is what is being introduced in England at present.

The extent to which individuals directly choose their hospital of treatment is limited in all health care systems. Individuals who have medical problems seek the advice of a medical specialist. In systems like the UK's National Health Service (NHS), this individual will typically be a generalist, a GP. In the UK, the choice of GP is currently very circumscribed: individuals have little opportunity to choose a GP outside the area in which they live and the policies on choice that we focus on here do not include policies to increase choice of GP.

The GP provides information on the condition the individual has and, if hospital care is required, will refer the individual to a hospital. In the past, there has been little choice of hospital in the UK. The individual may also have access to other sources of information (friends, family, a second medical opinion or, increasingly, the internet) on the condition they may have, its treatment and some aspects of the quality of care provided at different hospitals.

In a private insurance system, the patient's first point of contact is more likely to be with a specialist than a generalist GP. But even with a private insurance system like that in operation in the United States, individuals are typically limited in the extent of direct choice of hospital by the terms of their insurance. Many insurers limit the hospitals and treatments that can be chosen, in order to reduce the cost of insurance. (Greater information on the US system is provided in the chapter on choice in health care). The main choice that the individual has is of insurer and insurance plan.

In England, and the rest of the UK, the NHS system means that insurance is provided by the public purse. Money for their treatment is given to a locality-based grouping of GP practices (primary care trusts or PCTs). PCTs are given budgets, based on population health, to buy hospital care, which they buy by placing contracts with health care providers.

Within this system, the UK government is seeking to increase choice of hospital. The current mechanisms intended to do this in England are presented on page 13. This is not the first policy intended to increase competition between hospitals in the UK. The internal market, an arrangement in place between 1991 and 1997, abolished the system by which money allocated to geographical areas was then directly allocated to hospitals in those areas. It introduced a split between purchasers of health care and providers of health care, and established the current status of NHS hospitals as independent trusts, operating within the public sector and deriving their income from contracts placed by purchasers of health care.

## Government and opposition policies on choice in education

### The current government mechanisms to extend choice

(Source: Department for Education and Skills, 2004)

#### *Primary schools*

- Primary schools are being encouraged to work collaboratively in 'networks' to raise standards.
- Underperforming schools will be closed or merged with others.

#### *Secondary schools*

- By 2008, every school should be specialist, and every community should have at least one specialist school.
- All schools will be able to adopt 'foundation status' by a simple vote of their governing body.
- Successful and popular schools will be able to expand, with a 'fast track' process (maximum 12 weeks) for decisions on expansion plans and a 'strong presumption' in their favour. Note that this does not apply to grammar schools.
- Publication of a 'school profile' alongside performance tables.
- More city academies (200 by 2010) in areas with persistently failing education services. Around 60 of these academies will be in London.

### The Conservatives' proposals

(Source: Conservatives, 2005a)

- Parents of all school-age children – at primary, secondary and sixth-form levels – will have the right to apply to any state school.
- Local councils will not decide admissions, ensuring the abolition of the 'surplus places rule' (whose existence is disputed by the government) restricting the expansion of popular schools.
- Parents will also be entitled to send their child to an independent school that can offer a good education for the cost of a state school place.
- Any school – charitable or commercial – that can offer a 'good education' for the same cost as a state school will be entitled to receive state funding.
- Schools receiving taxpayer funding will not be allowed to charge parents fees.
- Centrally imposed targets for schools will be scrapped.
- Heads and governors will be able to allocate their own budgets and vary staff pay and conditions.

### The Liberal Democrats' proposals

(Source: Liberal Democrats, 2005a)

There appear to be no specific proposals currently being advocated by the Liberal Democrats to extend choice in education.

## Government and opposition policies on choice in health care

### The current government mechanisms to extend choice

(Source: Department of Health, 2004)

- From the end of 2005, patients requiring hospital treatment will have the option to choose from at least four to five different health care providers (chosen by their PCT). The NHS will pay for this treatment.
- In 2008, patients will have the right to choose from any provider, as long as they meet clear NHS standards and are able to do so within the national maximum price that the NHS will pay for the treatment that patients need.
- The government is strongly encouraging private sector entry into the hospital service market. Its plans envisage that, by 2008, independent sector providers will provide up to 15% of procedures on behalf of the NHS and, by the end of 2005, one of the five choices offered to patients should be from the private sector.
- There will be greater information available to patients. For example, the government intends for patients to have their own personal *HealthSpace* on the internet, where they can see their care records and note individual preferences about their care. There will be an 'expert patients programme' – designed to empower patients with chronic illnesses such as diabetes, asthma, heart disease and some mental conditions to manage their own health care – rolled out nationally by 2008.

Alongside these changes, the government has also introduced a system of centrally set prices ('payment by results') for each type of treatment and is increasing the provision of information on the quality of all health care providers, including hospitals and PCTs. The centrally set price ('the national tariff') for any treatment will be the average cost of such treatment across all hospitals. The aim of such single prices is to focus the attention of purchasers on quality, rather than price, in their contracting dialogue with providers.

### The Conservatives' proposals

(Source: Conservatives, 2005b)

A Conservative government would:

- Give every patient the right to treatment at any NHS hospital in the country. Choice will be unrestricted and immediate.
- Give every patient the right to treatment at any independent hospital that can treat patients at the standard NHS tariff (and meet NHS quality standards).
- Give every patient who chooses a more expensive hospital 50% of the NHS tariff.
- Scrap all centrally imposed targets for hospital managers, as well as scrapping the star rating system, which is a summary of health service providers' performance.

### The Liberal Democrats' proposals

(Source: Liberal Democrats, 2005b)

- All long-term personal care costs to be paid for by the government, as currently happens in Scotland.
- Local authorities to take over the commissioning role of PCTs.
- Elected regional governments to take over the planning role of the Department of Health, and decide the powers of strategic health authorities.
- Patients to be allowed to choose any treatment that will help them and is cost effective, supported by improved information about options and outcomes – including a public web-based national waiting times database.

# Choice in Education

Parental choice of school has been a feature of the English education system since the Education Reform Act of 1988. All parents are able to express their choice of preferred school for their child. Whether or not that preference is realised depends on such factors as whether or not the school is oversubscribed, and the distance between the parental home and the chosen school.

This ‘generalised but differential choice’ is only one form that school choice may take: Box 1 on page 5 outlines the key features of alternative choice-based mechanisms, while page 12 summarises current government proposals for extending the degree of school choice in England as well as the latest proposals from the Conservatives and Liberal Democrats. Here, we discuss the key issues in the impact of school choice.





## 1 Information, incentives and the nature of choice

The provision of information is a pre-requisite for informed parental choice. This section examines how the type of information (or performance measures) that is made available to parents informs how they choose, and how that in turn affects the ways in which schools may respond. Box 2 on page 9 outlines alternative types of performance measure in education.

An education market has a supply side – the schools (providers) – and a demand side – the parents (on behalf of their children). We can think of both schools and parents as seeking to get the best for themselves, responding to the incentives created by the particular education system, subject to the constraints they face.

Hoxby (2003c), for example, assumes that parents maximise the benefits for themselves and their children by choosing a school that offers the highest quality for a given price, where the notion of quality includes elements of better academic achievement, emphasis on academic standards, and discipline. Of course, in many publicly funded education systems, there is no explicit role for price. Certain choice mechanisms such as vouchers act as some form of substitute.

Ladd (2002), however, argues that parents' perception of school quality is partly dependent on the socio-economic status of the school body, which in turn creates an 'uneven playing field' of school choice. The basis on which parents choose a school is central in determining the outcomes of any school choice programme.

People respond to the incentive structure, subject to constraints. The incentive structure depends on both the design of the particular choice-based mechanism – generalised choice or vouchers, targeted or otherwise (see Box 1) – and the form of performance measurement (information) system used (see Box 2).

The constraints – or the extent to which both schools and parents can respond to the incentive structure – largely depend on the structure of the market, in particular, the degree of flexibility of the supply side, which determines

schools' ability to respond to changes in demand. We need to extract the market structure from any description of a school system (Hoxby, 2003b). For example: does money follow the student? Can schools expand/contract? Or enter/exit?

### The impact of performance measures

The information published about school performance has an impact on the incentives faced by both the supply side and the demand side. Both parents and teachers are sensitive to the form of performance measure used (Propper and Wilson, 2003).

On the demand side, parental choice among schools is informed by performance measures. Different performance measures provide information about different indicators of school quality. For example, value added performance measures better measure school effectiveness, while performance measures based on raw test scores include some measure of ability of the students at the time of enrolment. In addition, the rankings of schools that are commonly published are sensitive to the form of performance measure used (Kane and Staiger, 2002; Wilson, 2004).

On the supply side, if parental choice is informed by performance measures, then schools have the incentive to improve (at least) *measured* performance. This does not necessarily mean an improvement in actual outcomes (Propper and Wilson, 2003; Wilson et al, 2004). For example, schools can increase raw output performance measures by altering their intake, without improving actual value added or effectiveness (see Box 2).

A key point is that for choice to work, the supply side must be responsive to (changes in) demand, but the form that both demand and supply side actions take depends on the type of performance measure used and the incentives therefore created. So we need to consider the specific form of the performance measure with regard to what objectives it is trying to achieve and what form of response it is trying to elicit.

Figlio and Page (2003) illustrate this point by considering the Florida system, which explicitly links a school

accountability mechanism with a choice mechanism. Students in Florida schools that are classed as 'failing' according to the performance measures employed are given vouchers, which they can use to move to an alternative school.

The research shows that the type of student who qualifies for a voucher depends on the choice of performance measure used. Value added performance measures are more suited to the objective of performance measurement or accountability; while performance measures based on raw test scores better achieve the objective of this targeted voucher programme.

### **The significance of capacity constraints in popular schools**

The extent to which both the demand and the supply side can respond to the choice-based incentives depends on the constraints people face. The degree of (in)flexibility of the supply side and the resulting capacity constraints faced by popular schools, plus the way students are allocated to schools that are at or above capacity are particular issues (Hoxby, 2003b; Ladd, 2002).

Ladd and Fiske (2001), writing about school choice in New Zealand, note that if a school hits full capacity, it can set up an 'enrolment scheme' that specifies its criteria for selecting students, for example, geography, family ties or interviews. These schemes effectively convert a system of 'parental choice' into a system of 'school choice'.

The more general point that comes from this is that there is a shift from demand-side control to supply-side control when a school hits its capacity constraint. The balance between demand and supply depends on:

- the degree of (in)flexibility of the supply side;
- and regulations about the allocation of places once capacity constraints are reached.

### **Summary**

- For choice to work, the supply side must be responsive to (changes in) demand. But the form that these responses take depends on the type of performance

If parental choice is based on performance measures, schools have the incentive to improve measured performance – this does not necessarily mean improvements in actual outcomes

- measure used and the incentives therefore created.
- If parental choice is based on the information contained in performance measures, schools have the incentive to improve measured performance. This does not necessarily mean an improvement in actual outcomes.
- Different performance measures may be suited to the different objectives of accountability and facilitating a choice programme.

## **2 Sorting**

While the rhetoric surrounding school choice tends to focus on its potential for improving educational outcomes or school quality, another key outcome of choice is the way in which different types of student are allocated – or 'sorted' – across different schools. This section investigates the impact of alternative choice-based mechanisms on school sorting and its knock-on effects on sorting across neighbourhoods.

An important component of the potential impact of choice on educational outcomes is the effect on student sorting or segregation. This determines the composition of each school's student body. Why does sorting matter? If the ability of a child's peers at school influences his or her own progress, then the nature of the sorting of an area's children into different schools will affect the overall educational outcomes for the area. If peer groups matter, then sorting matters for both efficiency and equity.

To analyse the impact of a choice-based school system on sorting, we need to compare it with other ways of allocating students to schools. The main alternatives are

neighbourhood schooling (based on residence) and elite schooling (selection into grammar schools). In England, a few areas retain selective schooling, but most have a mix of neighbourhood and choice-based schooling.

Far from producing an even mix of students (no sorting), neighbourhood schooling produces strong sorting of students by income and ability (Nechyba, 2003b; Epple and Romano, 2003). This is because parents take steps to achieve their chosen school through other means – by choosing where they live. So the level of sorting in the absence of choice is potentially quite high.

One key point is to recognise that the nature of the assignment of students to schools influences *both* school sorting *and* neighbourhood sorting. So there are important links between school sorting and neighbourhood sorting beyond the obvious one that school intakes reflect to some degree the neighbourhood. If policy changes the nature of student assignment, it will have an impact on where people live as well as on school composition. This has two implications:

- First, it influences neighbourhood peer groups. It may be that neighbourhood peer groups matter more or less than school ones. Friendships, shared learning and playing arguably matter as much at home as at school.
- Second, it changes the relative desirability of places to live and therefore changes their prices (more on this below in section 4).

#### **The impact of choice on sorting: what economic theory predicts**

Analysis of choice and sorting is complex, and we need to learn lessons both from theoretical work and empirical evidence. Hoxby (2003b) argues that there are no very general theoretical predictions about student sorting with choice. All depends on the nature of the choice mechanism, and on the assumptions made in the analysis. Neal (2002) agrees that it is not useful to ask 'how vouchers affect sorting': there will be a different answer depending on the scheme.

In particular, Hoxby argues that 'cream skimming' (schools actively selecting high ability students) is not a general

prediction. She argues that it is a more likely outcome with broad eligibility for vouchers, a uniform value of vouchers, and little sorting in state schools. In terms of choice as vouchers, if these are targeted, then this aspect will necessarily reduce sorting.

One body of research (Nechyba, 1999, 2003a, 2003b) uses theoretical techniques to understand the complex 'spillover' effects of school choice and sorting. Nechyba (2004) summarises work on income and ability sorting, discussing different channels of sorting: sorting based on choice of residence and sorting out of the state system altogether into private schools.

A number of results come out of this work, perhaps the most important being the relationship between school finance, the degree and nature of choice, and spatial residential segregation by income and ability. For example, Nechyba (2003b) shows that a pure state school system leads to more spatial segregation than a private system.

Nechyba (2003a) examines the role of private schools further through simulations of different voucher systems. When there are private schools, 'residential segregation patterns within heterogeneous state school systems are then predicted to be quite different from school segregation patterns, with private school markets fostering *reduced* residential segregation by income and peer quality but *increased* school segregation along these same dimensions' (Nechyba, 2004). The relationship between vouchers and sorting depends on the voucher system design. Universal vouchers have an ambiguous relationship depending on the value of the voucher; targeted vouchers can decrease sorting.

Similarly, Epple and Romano (2003) analyse three different student assignment regimes: neighbourhood schooling (a strict residence requirement for admission); school choice with no choice costs; and choice over many school districts. They show that different public policy regimes have dramatic effects on the nature of sorting. Neighbourhood schooling leads to strong income stratification across neighbourhoods, with differences in school quality arising from peer group differences. Costless, frictionless choice equalises peer groups across schools. Epple and Romano argue that it is the residence requirement that is

fundamental to sorting rather than the single or multi-jurisdictions. Again, the differential sorting between schools and neighbourhoods is apparent.

Much of this theoretical work analyses a system where individual schools can grow or shrink costlessly to accommodate the outcome of parents' choices. In practice, this flexibility is often lacking, and so the empirical evidence is to some degree disconnected from the theory.

### The evidence on school sorting

Evidence from England, New Zealand, Sweden and the United States suggests that the degree of choice does influence the degree of sorting. For example, Burgess et al (2004) analyse student-level data from England, and show that the degree of student sorting varies considerably across the country in terms of ability, socio-economic status (measured by eligibility for free school meals) and ethnicity. Unsurprisingly, sorting is highest in areas of the country that have retained a selective system. This is true for all dimensions studied, but particularly among high ability students. This shows that 'selection through the housing market' has not simply replicated grammar school patterns.

Looking at choice, Burgess et al measure the degree of choice as the number of schools that can be reached within a particular drive time (see Figure 2 on page 8). They show that, compared with residential sorting, school sorting is considerably higher in areas where there is more choice. They also show that the relationship between residential sorting and school sorting is different between areas with selective education and non-selective education. This reinforces the idea of the link between the importance of residence in the school assignment mechanism and the degree of residential sorting.

Bradley and Taylor (2002) analyse school level data for England and show that the operation of the 'quasi-market' has led to a small increase in sorting by socio-economic status. They look at how the percentage of students in a school who are eligible for free school meals changes in response to its previous exam performance as reported in the school league tables. They find that schools with good performance tend to have lower percentages of students on free school meals subsequently. They interpret this as

showing that successful schools tend to become increasingly occupied by the middle class.

New Zealand experienced a substantial reform of the educational system in 1991, often billed as 'school choice'. In fact, parents did choose schools, but once a school hit full capacity, then the school chose. Ladd and Fiske (2001) find that the policy led to increased sorting by ethnicity and socio-economic status. The New Zealand reform opened up the demand side (parental choice) but left the supply side very constrained and controlled.

Cullen et al (2000) show that in the Chicago state school system, the exercise of parental choice leads to an increase in sorting by ability. Arguably, Chicago does not have pure 'choice' (Hoxby, 2003a) as money does not follow students, and schools cannot expand or contract much in response to the demand. But in that last feature at least, it is rather like the current system in England in which parents can exercise choice, schools also choose and schools cannot change size rapidly.

Other US evidence on sorting typically uses school- and district-level data. One important issue is that in the United States, any dimension of school segregation is closely tied up with racial/ethnic segregation, and the pure effects of choice on ability sorting are difficult to disentangle. Clotfelter (1998) argues that (district) choice influences sorting, but Hoxby (2000) disagrees. She concludes that student sorting is more relevant across schools within districts than across districts.

Parental choice plus flexibility in the supply of school places reduces 'sorting' of students by income and ability; parental choice plus poor supply-side flexibility increases sorting

Söderström and Uusitalo (2004) analyse student level data from Sweden, and compare student sorting along a number of dimensions before and after a significant reform to the school admission process in Stockholm. This reform switched from a predominantly residence-based admissions system to an explicitly ability-based system. Comparison of Stockholm and a neighbouring area that did not implement the reform enables them to pin down the impact of the reform on sorting. They find a significant increase in ability sorting in schools, but no change in residential sorting. They find the same result for ethnic and income sorting.

Overall, the evidence suggests that, compared with neighbourhood schooling, parental school choice with supply-side flexibility reduces sorting. Parental choice plus poor flexibility on the supply side means that schools have to use some criteria to choose students. The evidence from a number of countries including England suggests that this combined process of choice by parents and schools seems to lead to greater sorting.

Thus, in policy terms, if greater choice is to be universal and systemic, then for it not to increase sorting, policy needs much greater supply-side flexibility – for existing schools to expand/contract, for new schools to start and for poor schools to close.

### Summary

- The impact of choice on sorting needs to be compared relative to how students would be sorted among schools via the existing allocation mechanism.
- The nature of the assignment of students to schools influences both school sorting and neighbourhood sorting.
- There are no very general predictions from economic theory about the impact of choice on student sorting; it depends on the nature of the choice mechanism and on the assumptions made in the analysis.
- The evidence suggests that, compared with neighbourhood schooling, parental choice with supply-side flexibility reduces sorting; parental choice plus poor supply-side flexibility increases sorting.

## 3 Efficiency

A key argument put forward in favour of introducing or extending choice in education (similar to other areas of the public sector) is that a choice-based mechanism will lead to improvements in students' educational outcomes given the same resource base. In other words, schools will become more productive or more efficient in their provision of education. In this section, we examine the extent to which this is the case, and if so, in what circumstances.

Whether, and to what extent, schools actually respond to choice by increasing productivity depends on the nature of the choice-based mechanism and the incentives it creates. In particular, we need to distinguish between two sets of effects: the impact on those students who exercise choice and the schools they choose; and the impact on those students who do not exercise choice and the schools in which they remain. A key question is to what extent choice actually needs to be exercised in order for standards to improve: it may be that the *threat* of competition (the possibility of losing students) is sufficient for quality to rise.

We also need to be clear about how we measure any such impact. Improvements in raw test scores may reflect – at least in part – a change in the ways in which students have been sorted across schools. In order to isolate the impact of choice on productivity, we need to investigate to what extent student progress within schools has changed. In other words, the focus should be on the impact of choice on measures of value added for student or school.

### The impact of choice on efficiency: what economic theory predicts

There are no clear predictions from economic theory about the impact of choice on school productivity. Nechyba (2003) analyses the impact of major school voucher programmes on the quality of state schools and private schools, the housing market, and segregation by income and taxation. Using New Jersey data and simulating the impact of different types of voucher on school quality, he concludes that the impact depends on what assumptions are made about state school responses. If it is assumed that state schools do respond to (the threat of) losing students who use vouchers to attend private schools, average school

quality (across both sectors) rises. If, however, the assumption is one of no response, then average state school quality remains constant.

Macmillan (2004) suggests that it may not always be accurate to assume that schools respond to choice by improving their own performance. His analysis of the incentives faced by state schools in response to an increase in competition shows that under certain circumstances, schools may actually reduce quality as competition increases. While it is not clear *how* schools may respond to such a competitive threat, two elements are required for such a threat to exist:

- for a choice programme to have the potential to elicit provider response, there needs to be a degree of flexibility on the supply side;
- and there need to be financial implications for both expansion and contraction of student numbers (Hoxby, 2003b).

#### **The impact of choice on those who exercise it**

The evidence on the impact on active choosers comes largely from the various voucher schemes that have been introduced across the United States. It is difficult to generalise from this body of evidence, given the small size of many of the schemes as well as the differences in their design (Ladd, 2002). Given that caveat, the evidence on whether or not students who take up vouchers gain in terms of their progress is mixed.

Peterson et al (2003), for example, examine data from three privately funded school voucher programmes in New York, Washington DC and Dayton, Ohio. In all three schemes, a lottery is used to allocate vouchers among eligible (low income) families, and the voucher does not cover full costs. The key result is that test-score gains from switching to private schools are evident for African-Americans but not for students from other ethnic backgrounds.

Hoxby's (2003a) review of the evidence from recent studies using randomised control groups of students from lottery allocation mechanisms concurs with this finding. Again, a striking result is that gains appear to be restricted to African-American students, or groups largely composed of

African-American students. Rouse (1998) also finds evidence of differential effects across subjects, with a positive effect for mathematics scores, but not for reading.

There is some evidence that take-up does not lead to test-score improvement, relative to non-take-up. For example, analysing the Milwaukee voucher programme, Witte (2000) finds no test-score improvement effects for voucher students compared with students who remain in Milwaukee state schools.

Cullen et al (2003) use evidence from the lotteries used to allocate students to oversubscribed schools in the Chicago state school system, and find that winning a lottery has no impact on test scores at ninth or tenth grade, despite lottery winners attending schools that are better across several dimensions. In an earlier paper, Cullen et al (2000) conclude that the better performance of those exercising choice is not due to the choice mechanism, but the higher motivation of these students, which is correlated with exercising choice.

Overall, therefore, there is some evidence of test-score gains for some of the students who exercise choice, but this does not seem to be a general result, either across different types of student or different types of choice programme. In order to evaluate the overall impact of any choice programme, however, we also need to consider the effect on those who do not exercise choice.

#### **The impact of the pressures of choice on those schools 'left behind'**

The key question here is to what extent schools that are threatened with losing students via some choice mechanism respond by improving their own performance, and hence that of their remaining students. There are two distinct types of choice mechanism that we consider:

- First, the impact of voucher schemes on schools at risk of losing students to, for example, private schools or charter schools, those chartered by government or a government-appointed body to educate children in return for a publicly funded fee (Hoxby, 2003a).
- Second, how schools respond to such a competitive threat is a key determinant of the impact of more

The main impact of choice may come from the pressures of competition rather than the actual exercise of choice – schools facing a competitive threat may respond by increasing productivity

generalised systems of school choice, such as are found between districts in the United States, and in the quasi-market in education in England.

#### *Schools 'left behind' in differential choice programmes*

A large amount of the evidence on the impact of the threat of competition comes from the work of Hoxby, whose analyses represent some of the strongest research design in this field (Hoxby, 2000, 2003c). Hoxby (2003c) investigates the impact on productivity of three school choice reforms, each of which meet the following requirements:

- there is a realistic possibility that at least 5% of regular public enrolment could go to choice schools;
- the regular state schools lose at least some money when a student goes to a choice school;
- and the reform has been in place for a few years.

The choice reforms that meet those criteria are: vouchers in Milwaukee, charter schools in Michigan and charter schools in Arizona. In each case, state schools responded to competition from the choice programme by raising the achievement levels of their remaining students. This increase was sufficient to outweigh any negative allocation effects. In Hoxby's terms, such choice programmes are 'a tide that lifts all boats'.

While strong in both design and methodology, Hoxby's analyses are not unchallenged. In particular, Ladd (2003) argues for some scepticism, pointing out that the Milwaukee choice programme forms only part of a broader package of reform.

#### *Schools under competitive pressure in generalised choice programmes*

There is also conflicting evidence on the impact of competitive pressure in generalised choice programmes. For the UK, Bradley and colleagues (Bradley and Taylor, 2002; Bradley et al, 2000) show that a school's own exam performance is positively related to the lagged performance of competitors. Note that the educational outcomes here are raw exam results, not value added, so they may include some effect from sorting by ability.

Clark (2004), however, shows that English schools near to opting-out schools (and which therefore arguably faced increased competition) did not respond by improving outcomes.

For the United States, early studies on the impact of competition from private schools on state schools include Borland and Howsen (1992), Couch et al (1993) and Smith and Meier (1995). Borland and Howsen find a positive effect in Kentucky; Couch et al find such an effect only in mathematics in North Carolina; while for Florida, Smith and Meier find that competitive pressure from private schools is insignificantly or negatively associated with state school performance.

More recently, Hoxby (2000) exploits variation in the number of school districts across metropolitan areas to investigate the impact of inter-district choice. She finds that metropolitan areas with many competing school districts have higher test scores and lower costs than those with fewer districts, which are hence less competitive.

For Sweden, Sandström and Bergström (2002) find weak evidence that increased competition from the private sector improves the quality of state schools.

#### **Summary**

- There are no very general predictions from economic theory about the impact of choice on school productivity.
- There is empirical evidence of test-score gains for some of the students who exercise choice, but this is not a general result, either across different types of student or different types of choice programme.

- The main impact of choice may come from the pressures of competition rather than the actual exercise of choice. There is strong US evidence that schools facing such a competitive threat respond by increasing productivity.

#### 4 Winners and losers

It is unlikely that extending school choice would be a utopian policy in which everyone gains. In this section, we provide some evidence on who are the likely winners and who the likely losers. Following the themes earlier in the chapter, the answer to this question depends on the nature of the choice policy.

The main groups we consider are the students and their families; others of interest are the teachers. With vouchers, much depends on the nature of the scheme, and the nature of the assumptions in theoretical work. But common outcomes of such work are significant losers as well as winners.

The big potential winners are the great bulk of students whose educational qualifications might improve from the policy. This would work through competitive pressure acting to increase the performance of the majority of schools. In an optimistic scenario, this need not require large scale transfers of students between schools, but would arise through unpopular schools improving their performance to attract more students. As we have noted above, some results suggest that these improvements could be significant.

Within this overall outcome, some groups in particular may do well. These are children from poor (or possibly ethnic minority) backgrounds unable to live near enough to good

schools to get a place there. For these groups, a successful choice policy (with a flexible supply side) would allow them a much greater choice of school, and potentially significant improvements in qualifications.

As noted in the previous section, the US voucher evidence suggests little gain for those voucher applicants going to better schools. But with a universal system in England, this greater choice would be available to all students and not only the more motivated who might have succeeded anyway.

Taking a wider perspective, the nature of the assignment of students to schools influences *both* school sorting *and* neighbourhood sorting. If policy changes the nature of that assignment, it will have an impact on where people live as well as school composition.

In particular, a purely choice-based scheme would eliminate the advantage from living near a good school. If coupled with an improvement in the performance of all schools, this would create more heterogeneous communities by freeing up the residence decision from its dependence on school quality.

There are potentially two main groups of losers. First, the de-coupling of residence and getting a place at a good school will have important effects on the housing market. It changes the relative desirability of places to live and therefore changes their prices. To be specific, if a significant part of the price of a particular property derives from the fact that it gives an entrée to a particular school, then if that entrée is removed, the price will likely fall.

Some estimates of the school premium embodied in the price are substantial (Gibbons and Machin, 2003). If, for example, a lottery is used to assign scarce places, or all who apply to a school are accepted, then living near is worth no more than living far away in terms of school entrance. This is potentially quite a significant loss for a significant group of people. There will still of course be differences in school-run time and costs.

While Burgess et al (2004) have some empirical evidence for England, some of the evidence here comes from simulations. Burgess et al show that there is a difference in

A successful choice policy in education would eliminate the advantage from living near a good school – this would have significant effects on the housing market



the residential and school segregation patterns depending on the degree of choice: where the degree of choice is high, residential sorting is less than school sorting. Nechyba has similar theoretical results.

Second, if peer effects are important, and if sorting increases with choice because of insufficient flexibility on the supply side, then students who find themselves in schools with less able peers will perform less well. This process is likely to cumulate in that poor achievement in one year will attract a less able group of students in the following year, thus compounding the problem.

Focusing on voucher schemes, Epple and Romano (1998) use simulations to show that while these often deliver small positive average gains, they are made up of substantial gains for a few and small losses for many. Vouchers *can* make those remaining in public sector worse off (because they lose good peers). They *can* yield those taking up the vouchers higher achievement but worse welfare, while those in private school before and after are better off. The largest gains as a percentage of income go to high ability but low-income households.

Again, the exact details depend on the scheme (and the theoretical assumptions). In many simulations, a standard finding is that wealthy families in the best state school systems lose from the introduction of vouchers (Neal, 2002). This is because of the loss of the capitalised value of the property in those areas.

Howell's (2004) empirical work on New York City cautions that the final users of targeted vouchers may differ significantly from the average intended user. Among targeted voucher schemes, those actually using them tend to be the better off in the group. For example, in a programme where the eligible were families qualifying for free school meals, the average income levels of those using them were 10% higher than that of the overall eligible group. This arises because not everyone who is allocated a voucher takes it up, and not everyone taking it up uses it for the full duration.

## Summary

- An increase in the degree of choice, and hence a de-coupling of the school-residence location decision, may have knock-on effects on house prices.
- The potential gains – or losses – from choice depend on the extent of the peer group effect within schools.
- The final users of targeted vouchers may differ significantly from the average intended user.

# Choice in Health Care

Consumers in health care may choose providers and/or treatment type. This report focuses primarily on choice between providers, generally made for the consumer by a third party on their behalf, as this is the dominant form of choice offered in OECD health care markets. It is also the primary type of choice that is currently being introduced in England.

Box 3 on page 11 outlines the nature of the choices that people can make in health care, while page 13 summarises the current mechanisms by which greater choice is being introduced in England and also outlines the proposals made by the Conservatives and Liberal Democrats.

Health care markets are usually thought to differ from textbook competitive markets in a number of important ways: the product is differentiated, information is imperfect, government regulation is extensive and many firms are not-for-profit. This has implications for the operation of competition and choice-based policies reviewed here.



## 1 Competition between hospitals

This section examines the theoretical and empirical evidence on the impact of greater competition between providers in health care markets. Most of the empirical evidence focuses on a narrow set of outcomes, primarily the effect of competition on prices and quality of health care, sometimes with a focus on winners and losers. The majority of studies only provides evidence on positive questions, such as 'does competition increase quality?' Few of these studies allow normative analysis, which assesses whether greater competition is beneficial overall.

Most of the evidence comes from the United States since competition between hospitals has been a feature of the US health care market for over two decades. There is relatively little evidence for England or the UK as a whole, and even less for the rest of Europe.

### The impact of competition on health care markets: what economic theory predicts

Economic theory fails to provide strong guidance as to whether competition is optimal in markets with product differentiation. Competition can provide too little quality or variety, too much, or just the right amount. The intuition is as follows: competition may 'underprovide' variety since competitive firms cannot capture the consumer surplus from additional variety. A monopolist may provide variety as it is the only seller in the market.

Alternatively, competition may produce too much variety since in a competitive market, part of the profit from new variety will come from 'stealing demand' from other firms. A firm deciding to offer a new variety will not take account of this external effect and thus too much product variation may be offered in a competitive market (Gaynor and Vogt, 2000).

Analysis that takes account of the multi-product nature of hospital production and the imprecision of measures of both quality and price shows that the impact of competition between hospitals on price and quality is ambiguous (Dranove and Satterthwaite, 2000). The impact of competition will depend on the responsiveness of the buyer of health care to both quality and price. This will

depend on how precisely price and quality can be observed:

- If price and/or quality cannot be measured and reported well, this will make the buyer less responsive to changes in price or quality.
- If quality is observed accurately but price is observed poorly, then demand becomes less responsive to price, allowing producers to raise their prices, but also giving the provider an incentive to increase and possibly 'overproduce' quality.
- If price is observed accurately but quality is observed poorly, then the levels of quality supplied will be too low.
- If quality has several attributes, one of which is easier to observe than another (for example, clinical quality and patient amenity), then competition may lead to overproduction of the one that is easily observed and underproduction of the one that is less easy to observe.

### *The interaction with price levels and methods of price setting*

In a market in which buyers of health care are covered by generous health insurance (as in the United States before the 1980s), they will not be sensitive to price, but will be responsive to differences in quality. So price may be high, but quality will also be high. In markets where buyers have 'harder' budget constraints, price may be more important to them and hospitals will compete on prices, leaving quality to fall below efficient levels.

Where a single price is fixed for all providers for a treatment (as in the current arrangements in England), there will also be no price competition. In this case, all competition will be in terms of quality. The theoretical research shows that competition will increase quality (Gaynor, 2004). Competition may lead to excessive levels of quality and excessive product differentiation. But if government reimbursement for a treatment is too low, competition may lead to the quality of this treatment being too low.

As individuals will differ in the severity of their illnesses, any regime that sets a single price for all patients of a certain type – for example, a single price for the treatment of a certain condition – will set up incentives to treat the less costly patients and to avoid treating or 'undertreat' the

more costly patients. Such regimes include the diagnosis-related group (DRG) system used in the United States by the government and any kind of prospective payment system, in which reimbursement is set in advance of treatment.

These incentives exist regardless of whether there is competition or not, but competition may sharpen them, resulting in differential treatment of patients. So for example, patients who are more expensive to treat may get less good quality care or remain untreated (phenomena known as 'skimping' and 'patient dumping') while hospitals compete for lower cost patients by offering them better quality. Differential treatment might also arise in markets where different groups of patients are covered by different insurers if these insurers differ in the generosity with which they reimburse hospitals.

### **US evidence on competition and health outcomes**

Almost all the evidence comes from the US market, and much of this comes from one – albeit very large – market, California. Some of the early evidence is difficult to interpret because of the methods of analysis used. In early studies, hospital markets were not well defined, and there was no recognition of the fact that the measure of competition might be affected by the outcomes that were being studied. Later studies tend to have paid more attention to these issues, and hence are more reliable indicators of outcomes.

In addition, the impact of competition depends on the 'rules of the game' – the institutional features of the health care market. Three regimes can be identified in the US health care market. In the first, which operated in the 1960s, consumers were covered by generous insurance and hospitals reimbursed for their full costs.

In the second regime, government payers (Medicare) introduced prospective payment schemes and utilisation review. Private insurers followed their lead. Prospective payment schemes reimburse hospitals according to average cost for a procedure or treatment group. The schemes give two incentives: to lower costs; and to avoid treating high cost patients.

The third regime began in the 1980s, but took hold in the 1990s, and is known as managed care. Payers created preferred provider organisations, which contracted with hospitals to obtain discounted prices. This system limits the number of hospitals that can be chosen by the health care users. Alongside preferred provider organisations have grown up managed care organisations (known as health maintenance organisations or HMOs), in which the insurer enrolls the individual for a set period for a fixed fee. Managed care organisations have an incentive to be concerned about price and have also been very active in seeking information on quality.

#### *The effect on costs and price*

Most studies suggest that the switch to both prospective payment and managed care increased price competition and lowered costs (or lowered the growth in costs). But there is also evidence that hospitals in competitive markets might have decreased the amount of uncompensated care they provided in response to the introduction of increased price competition (Gruber, 1992; Dranove and Satterthwaite, 2000; Gaynor and Vogt, 2000).

#### *The effect on quality*

It is the generally accepted view (though the empirical support is quite weak) that the first regime resulted in a 'medical arms race' (Robinson and Luft, 1985). As buyers were not sensitive to price, hospitals competed on quality, both to attract buyers and to attract physicians to practice at their hospitals. This had the impact of raising both price and quality in areas with more hospitals.

Recent attention has focused on the impact of the managed care regime on quality. Many of these studies have focused on one measure of quality (or rather its absence): deaths after emergency admissions for heart attacks (acute myocardial infarction or AMI). An influential early study focused on the treatment of elderly patients admitted to hospital with a heart attack. All these patients, because of their age, were covered by government insurance (Medicare), which pays generously for AMI treatment. This shows that higher competition was associated with lower AMI death rates post-1990 (Kessler and McClellan, 2000). Later studies show more mixed results

## The effects of competition depend on the nature of the health care market, including who chooses the provider and how much information is available on quality and prices

(for example, Hamilton and Ho, 2000; Gowrisankaran and Town, 2003; Volpp et al, 2003).

Incentives for hospitals to increase quality when operating in competitive markets may depend on the precise mix of payers that the hospitals have. There is evidence that HMOs have preferences for higher quality (Chernew et al, 1998; Escarce et al, 1999). This leads to both price reductions and quality improvements in competitive environments where HMO penetration is high.

On the other hand, where reimbursement rates are set by Medicare or another government insurer that sets relatively low rates, hospitals may respond to competition for patients by decreasing quality (Gowrisankaran and Town, 2003). The argument is that if the hospital has no control over reimbursement rates, and if they are too low, the hospital may not have an incentive to compete for these patients by supplying better quality. If this is the case, the outcome of competition will depend on the precise mix of payers. Gowrisankaran and Town (2003) examine the treatment of both Medicare and HMO patients and find that competition reduced death rates for HMO patients but increased those of Medicare patients.

There is also research showing that falls in reimbursement rates are associated with poorer quality. A change in payment methods in New Jersey reduced subsidies for hospital care for the uninsured and changed hospital payment to price competition from a rate setting system based on hospital cost. This led to an increase in AMI mortality and a relative decrease in the use of cardiac procedures (Volpp et al, 2003).

### *Differential treatment of patients*

Competition may also lead to differential treatment of different types of patients. This has been less studied. Kessler and Geppert (2003) examine the treatment given to elderly Medicare patients admitted with a heart attack. They investigate the extent to which (lack of) competition has an impact on patients who are otherwise sicker compared with those who are otherwise healthier.

They find that in more competitive markets, there was greater variation in medical care. Furthermore, this variation was on average beneficial. Healthy patients in more competitive markets received less intensive treatment than those in more concentrated markets, without any significant loss of health benefits. Sick patients in less competitive markets received less intensive treatment than similar patients in more competitive markets, with worse health outcomes. The effect of competition is that there is more appropriate treatment, with greater variety in treatment styles across hospitals in more competitive areas and that neither patient group loses.

A related issue is whether price-based competition changes the type of services provided. Mukamel et al (2000) examine whether hospitals in more price competitive environments will shift resources from activities related to clinical service, which are not easily observed and evaluated by patients, into hotel services, which are easily observed. They study the change to selective contracting in California in the early 1980s and find some evidence to support resource shifting. In not-for-profit hospitals, resource use declined more in clinical services than in hotel services.

### *Do not-for-profits hospitals respond differently to competition?*

Not-for-profit hospitals play a large part in the US health care market. Do they behave differently with respect to competition? One view is that not-for-profits mergers are not harmful, as epitomised by several cases in the United States where courts believed that not-for-profit status would mean that mergers would not have anti-competitive effects. One court judgement stated: 'The Board of University Hospital is simply above collusion'.

But recent studies have challenged this view. The best empirical evidence indicates no significant differences between the pricing behaviour of for-profit and not-for-profit hospitals. Not-for-profit hospitals use their market power in a way similar to for-profits: studies of not-for-profit mergers find that mergers lead to price increases. Nor do not-for-profit and for-profit hospitals appear to differ in terms of the amount of uncompensated care they give.

The best available evidence indicates that not-for-profits exploit market power when they have the opportunity to do so. This implies that the for-profit/not-for-profit status of hospitals that wish to merge should not be considered a factor in predicting whether a merger is likely to be anti-competitive (Federal Trade Commission and Department of Justice, 2004).

In England, while the entrance of private providers is being encouraged, the bulk of hospitals in the market will be the not-for-profit NHS trusts, so the issue of whether not-for-profits behave in a similar way to for-profits when faced with competition will be important.

#### **Evidence on competition and health outcome from outside the United States**

The evidence on competition between hospitals outside the United States is extremely limited, mainly because such competition has been extremely limited. In addition, some of this evidence is less about competition per se than about the effect of changes to the payment mechanisms that accompany policies to increase patient choice.

##### *Evidence from the UK*

The primary non-US evidence on competition comes from the UK internal market in hospital care that operated between 1991 and 1997. This internal market encouraged competition between NHS hospitals for contracts for hospital care from two sets of buyers: the geographically-based district health authorities and the smaller GP fundholders. Prices could be negotiated between hospitals and the buyers and price lists (though not including any discounts) were supposed to be publicly available. Information on quality was very limited.

The evidence suggests that greater competition was associated with lower costs (Söderlund et al, 1997). The bargaining power of district health authorities was lower than that of GP fundholders, and hospitals that had greater business from fundholders had lower posted prices (Propper et al, 1998; Propper, 1996).

On the other hand, two large-scale studies of the association between competition and quality suggest that quality – as measured by deaths of patients admitted to hospitals with heart attacks – fell during the internal market (Propper et al, 2004, Propper, Burgess and Abraham, 2002). This combination of falls in price and quality fits with the predictions of economic theory: where demanders are sensitive to price and quality information is weak, both prices and quality are likely to fall as competition increases.

There is a considerable body of evidence to suggest that the two types of purchasers were differentially able to reap the benefits from provider competition. Fundholders were able to secure shorter waiting times for their patients, were more able to move contracts and generally appeared to be more responsive to patients' wishes and more willing to exploit competition between hospitals for their business (Le Grand, 1999; Croxson et al, 2001; Propper, Croxson and Shearer, 2002; Dusheiko et al, 2004). This may in part be due to their smaller size: district health authorities were concerned that if they removed their business the whole hospital would fail. It is also likely to be due to self-selection among GPs of fundholding status.

So there is some evidence of differential treatment of patients from different buyers. But there has been no systematic study of patient dumping at the hospital level. Case study evidence suggests that fundholders did not engage in patient dumping, even though they had the incentive to do so (Matsaganis and Glennerster, 1994).

##### *Evidence from Norway, Sweden and Denmark*

All three Nordic countries have an NHS-type system where care is provided by the public sector and finance is provided through taxation. Patient choice has been introduced, primarily to decrease waiting times. In all three countries, it has been accompanied by a move towards output-related (DRG-type) payments.

A recent review concluded that in Denmark and Sweden the incentives for hospitals to accept patients from outside their area have been weak and perhaps unsurprisingly, only a small proportion of patients went out of area under these schemes (Williams and Rossiter, 2004). The evidence does not support a strong reduction in waiting times in Denmark and no evaluation of the impact on waiting times appears to have been made for Sweden.

On the other hand, there is some evidence that the move towards output-based payments increased technical efficiency in Swedish hospitals (Gerdtham et al, 1999). There appears to be little assessment of the impact of such choice in Norway.

### Summary

- The effects of competition depend on the exact nature of the health care market. Important aspects of the market include whether prices are set centrally or not, who makes the choice of provider, and the availability of information on quality and prices.
- Competition between hospitals appears to be associated with lower costs. The relationship between competition and quality has not been studied as extensively as the relationship between competition and cost. US evidence suggests that quality is higher where markets are more competitive, though this was not the case in the English internal market.
- Not-for-profit hospitals appear to respond to competition in very similar ways to for-profit hospitals.
- Poor information will limit the effectiveness of competition and choice.

Hospitals may react to increased competitive pressures by seeking to merge: since mergers can reduce the benefits of competition, they will need to be subject to rigorous market tests

## 2 Do patients respond to greater choice?

This section focuses on how patients in primarily NHS-type systems – that is, systems without private or public insurers – react to being offered greater choice of provider of hospital care. A secondary question is whether this has an effect on the behaviour of hospital providers.

Direct patient choice may be limited in many health care systems, not just NHS-type ones. Even in private insurance systems, attempts to contain the growth of costs mean that patient choice is typically exercised at the point of choice of insurer, rather than in direct choice of hospital conditional on insurance.

Patients who are allowed to choose hospitals will make these choices on the basis of the benefits and costs associated with each of the hospitals they may choose between. Factors that play a part in this calculation will include what illness they have, the severity of the illness, the quality of the hospitals, the costs of accessing and using them, and the amount of information they have, both about their medical health and the benefits of care provided at different hospitals. Individuals who differ along these dimensions are likely to differ in their willingness to exercise choice.

The UK evidence comes from two sources: the recent patient choice pilots and from the internal market. This section draws heavily on the evidence and interpretation reported by Williams and Rossiter (2004).

### The patient choice pilots

The patient choice pilots offered patients who had been waiting over six months for treatment a choice of different provider. The evidence suggests that a high proportion of patients have exercised choice under the scheme: 67% in the London scheme; 50% in the national coronary heart disease pilot; and 75% in the Manchester pilot. This high take-up is likely to be affected by the fact that in order to qualify, all patients had to have been waiting six months, that patients were provided with high levels of information about the available choices open to them, and that they were given advice and financial assistance with transport and accommodation for companions.

This higher take-up is in contrast to rather low take-up for patient choice policies in other countries. The financial factors in the UK pilots either did not operate, or operated only weakly, in choice schemes in other NHS-type systems. In addition, take-up might have been affected by the pilot nature of the schemes: for example, the enthusiasm of patient advisers might have been larger because the scheme was new.

It does not appear that the patients who took up choice differed in terms of severity or the deprivation of the area in which they lived. This finding may be peculiar to the nature of the scheme. Patients were relatively homogenous: all had been waiting for at least six months and travel costs and information costs were similar across all groups. In general, we would expect patients to differ in their willingness to travel. Responses to a survey that accompanied the scheme indicated that there were *stated* differences in willingness to travel and in the importance of attributes of hospitals.

Patients who are older, female, have lower educational qualification or who look after children are less likely to take up choice. Patients are willing to trade-off waiting time against reputation of the hospital, with some indication that this trade-off is affected by the income of the patient. The very limited Nordic and French evidence from their patient choice systems suggests patients who travel have different socio-economic status; the French evidence also suggests patients who travel have different medical conditions (Williams and Rossiter, 2004).

Extending patient choice may also change the flow of patients to hospitals. It seems likely that more severely ill patients will want to go to more high-tech hospitals, leading to a change in the distribution of patients across hospitals. Recent US research indicates that, even among heart attack patients, the more severely ill travel further and to more specialist hospitals (Tay, 2003). Furthermore, the trade-off between distance and quality varies with patient characteristics. If such trade-offs are made for patients in need of emergency treatment, it is likely they will be made more by those needing elective care.

It also appears that lower waiting times for those in the scheme were not at the expense of patients who were not in the scheme. Waiting times for all patients fell as sending

The responses of health care providers to increased performance monitoring may or may not improve overall outcomes: there is considerable evidence of ‘gaming the system’

hospitals responded to loss of patients (and funding) by improved performance on waiting times and receiving hospitals did not increase waiting times for other patients at the hospital (Dawson et al, 2004).

#### Evidence from the GP fundholding scheme

The evidence from the GP fundholding scheme is less about direct patient choice than about the impact of decisions by fundholders on the waiting times of their patients and the extent to which hospitals responded to the incentives provided under the fundholder scheme. The strongest empirical evidence suggests that fundholding led to a reduction in waiting times for patients of fundholders, but not for other patients (Dowling, 2000; Croxson et al, 2001; Dusheiko et al, 2004).

There is also some evidence that fundholders were able to secure shorter waiting times for their patients only where they paid directly for them: in other words, without direct financial incentives, hospitals were not willing (or able) to get shorter waiting times for patients of fundholders needing other treatments. On the other hand, there is some evidence that fundholders were especially, but not uniquely, successful in persuading consultants to conduct outreach programmes (Williams and Rossiter, 2004).

#### Summary

- Direct patient choice is limited in many systems and may conflict with choice exercised by the agents who place contracts with hospitals on behalf of groups of patients.
- Patients in England express willingness to travel to non-



local hospitals and have done so when given assistance to exercise this choice. When such support is absent (or the wait at the local hospital is perhaps shorter or less uncertain), the evidence from other European countries suggests there is relatively little take-up of such travel options.

- Individuals who are better informed and individuals whose illnesses are more severe may be more likely to travel.

### 3 Information

All the political parties' proposals include the provision of greater information about the performance of hospitals. In addition, in the last five years, the amount of information in the English hospital market has increased greatly, some of it provided by the Department of Health, but also from a media-led coalition (<http://www.drfooster.com>).

While the provision of information is a pre-requisite for informed choice, the evidence – mainly from the United States – on the provision of information on provider performance suggests that such information does not necessarily improve outcomes.

#### The use of information

A comprehensive review (Marshall, 2002) suggests very different use of information among consumers, buyers and health care providers. Although consumers state they want more information about provider performance, published data has only a small impact on consumer decision-making.

For example, only one in nine coronary artery bypass graft patients from four Pennsylvania hospitals were aware of the Pennsylvania report cards on cardiac surgeons. Less than one quarter of these patients said it had any significant impact on their choice of surgeon. Furthermore, there was a low willingness to pay for the report cards. Lack of interest in, and lack of use of, performance data appears to be due to difficulties in understanding the information, lack of trust in the data, problems with timely access to the information, and lack of choice.

Purchasers use information on providers to a greater extent than patients, but there is evidence that they find it

inadequately packaged and targeted.

Providers are more responsive to performance data than consumers or purchasers (or individual doctors). Unsurprisingly, organisations shown in a positive light by performance reports are more likely to use the information for benchmarking and internal performance monitoring. Those identified as poor performers are more likely to criticise the validity of the data.

#### The impact of information on health outcomes

Public reporting of performance may engender positive responses by providers. But it may also have unintended consequences. This stems from the fact that outcomes, particularly quality, are very difficult to measure in health care. Propper and Wilson (forthcoming) review the issues involved in creating and using quality measures.

Information on performance gives providers the incentive to do well according to the criteria that are published: the problem is that they will do this by increasing efforts to improve the published criteria, which is not necessarily the same thing as improving actual outcomes. Possible responses include the improvement of performance and the exodus of poor performers, but also less positively, the selection of patients, differential treatment of patients and manipulating the data to appear to do better (Propper and Wilson, 2003). These responses are often labelled 'gaming the system':

Smith (1995) provides a list of some of the less positive responses of providers to the publication of information in health care. Examples of manipulation of the data from the UK include the re-categorisation of patients during the 1990s to reduce published inpatient waiting lists.

Report cards have been introduced in the United States to provide information, at the level of individual surgeons in hospitals, on the quality of outcomes. There are relatively few studies of their impact. Studies of the impact of the mandatory New York coronary artery bypass graft surgery report cards, which were introduced in the late 1980s, concluded that mortality decreased, and the severity of patients operated on increased. Possible explanations include the exodus of low volume, high mortality surgeons,

a marked improvement in the performance of non-low volume surgeons, and improvement in the performance of surgeons new to the system (Hannan et al, 1994).

Dranove et al (2003) use the same data to examine the impact of report cards on appropriate matching of patients to hospitals, on the quality and incidence of intensive cardiac treatments and on the resource use and health outcomes that determine the net consequences of report cards on social welfare. They find that report cards led to substantial selection by providers of patients, increased sorting of patients to providers on the basis of severity of their illness, and significant declines in the use of intensive cardiac procedures for sicker patients. Treated patients in the two states (New York and Pennsylvania) that had report cards were less ill than those treated in states without report cards. Patients within a hospital were more similar in terms of severity and those who were sicker were more likely to go to teaching hospitals.

The introduction of report cards also altered the treatments given so that both healthier and sicker patients received more treatment. But while this improved the outcomes for healthier patients, it worsened outcomes for sicker ones, because hospitals avoided performing intensive surgical therapies that were monitored for sicker patients and instead used less effective medical therapies.

Overall, Dranove et al conclude that these cards reduced patient welfare, though the longer-term effects might be more positive. For example, the increased patient sorting that report cards engender might lead to more accurate and effective treatment as hospitals become more specialised in the treatment of certain types of patients.

### Summary

- Information is needed to make health care markets work.
- Information on providers is mainly used by providers. Their responses will be to improve the outcomes that are measured.
- The responses of providers to information may or may not improve overall outcomes: there is considerable evidence of 'gaming the system' and some indication from the United States that detailed report cards are

associated with less appropriate treatment of patients whose outcomes might contribute negatively to what is measured by the cards.

## 4 Centrally set prices

The current UK government has introduced centrally set fixed prices as part of its competitive reforms package (see page 13). The United States led the way in introducing fixed prices for treatments. In 1983, Medicare implemented a prospective payment system and private payers followed suit. Under the prospective payment system, the amount a hospital receives for treating a patient is based on the diagnosis-related group (DRG) for the episode of hospitalisation. Each DRG has a payment weight assigned to it, based on the average cost of treating patients in that DRG. Hospitals receive this predetermined amount regardless of the actual cost of care.

The UK system is broadly similar to this. Such systems are intended to give hospitals incentives to bring down costs, as they can keep the difference between actual expenditure and the DRG payment.

It is important that prices correctly reflect the economic costs of the activity. Paying too much wastes resources, while paying too little reduces both output and capacity, lowers the quality of the services that are provided, and diminishes the incentives for innovation.

US research suggests that in the presence of competition, providers are extremely responsive to signals given by

Centrally set fixed prices may encourage entry of specialist providers who concentrate only on well-reimbursed activities and penalise providers who currently cross-subsidise between activities

centrally set prices. For example, prior to the adoption of the prospective payment system, the average length of stay in hospital had been stable for around seven years. Once the prospective payment system went into effect, the average length of stay began an immediate decline, the number of certain procedures dropped precipitously and others rose by well over 100% (FTC/DoJ, 2004).

Medicare's administrative pricing system has also (albeit inadvertently) made some services very lucrative and others unprofitable. The results of the pricing distortions are that some services are more or less available than they would be based on the demand for the service.

An example is provided by cardiac care. Medicare reimbursement rates in the early 2000s made this type of care very profitable. Hospitals use this profit to subsidise the provision of less profitable (or unprofitable services), but this pricing distortion also creates a direct economic incentive for specialists in cardiac care to enter the market. In response, general hospitals in the United States have tried to find ways to limit the expansion of competition.

These difficulties will be magnified when the government is the sole or primary purchaser of the good, as in England and the rest of the UK.

Single prices may also encourage differential treatment of patients. They give incentives to overprovide services to patients with expected costs below the fixed price ('creaming'), to offer low quality to patients with expected costs above the fixed price ('skimping') and to underprovide services to patients with expected costs greater than the fixed price ('patient dumping') (Ellis, 1998). Furthermore, if the price is too low, then quality will be too low.

Setting a single price does not necessarily encourage high quality. There is no evidence from the UK, but the US Medicare system has been claimed to be 'largely neutral or negative towards quality' (FTC/DoJ, 2004). The reasons are as follows: all providers meeting basic requirements are paid the same regardless of the quality they provide. At times, providers are paid more when complications occur as a result of error (for example, if a patient is pushed into a better rewarded DRG as a result of medical complications), thus actually providing an incentive for poorer quality.

## Summary

- Centrally set fixed prices are to be used in England to encourage providers to compete in terms of quality rather than price. These prices are generally set at average cost, so giving providers incentives to bring down costs.
- But they also give incentives to select those patients that are cheaper to treat than the fixed price and to undertreat those with expected costs above the fixed price. They may also encourage entry of specialist providers who concentrate only on the well-reimbursed activities, and penalise providers who currently cross-subsidise between activities.

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# About CMPO

The Centre for Market and Public Organisation (CMPO) was founded in 1998 with the first of two large-scale grants from the Leverhulme Trust. In October 2004, the Centre was awarded ESRC Research Centre status. This brings increased funding and a recognition of research quality. Principally based in the Department of Economics at the University of Bristol, the ESRC grant is for a multi-disciplinary venture that includes researchers from the School of Geographical Sciences and from the School of Law.

The aim of CMPO is to understand the right way to organise and deliver public services. Our research covers a broad range of topics including:

- We study the use and impact of incentives for public sector workers.
- We have worked extensively on the UK markets for education and health care, looking at issues of choice, competition and benchmarking.
- We have produced research on the regulation of private markets, particularly the privatised public service providers.
- We have looked at the roles of schools, parental time and other resources on the early development of children.

The new funding enables us to open new lines of research into organisational culture, and the role of peer groups and neighbourhoods in influencing public service outcomes. Our research is organised into five themes:

- Competition, benchmarking and incentives.
- Organisation and culture.
- Neighbourhoods and peer groups.
- Families, welfare and children.
- Markets and regulation.

For further information about CMPO's work, contact Heidi Andrews on 0117 954 6943

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