



COMPETITION, INCENTIVES AND THE ENGLISH NHS

CAROL PROPPER*

Introduction

Twenty years ago within OECD countries competition in healthcare, on either insurer or the provider side of the healthcare market, was confined to the USA. Other OECD countries operated either National Health System (NHS)-type or social insurance systems. The choice of healthcare insurer or provider was not an important component in either type of system. Choice was restricted to richer individuals in all these systems, either through a small private sector in (some of the) NHS countries, or to choice of insurance for higher income earners (for example, in the Netherlands). In the last 20 years, however, competition has been widely advocated as a reform model, either on the delivery side, or the insurance side, or on both. The UK has been a leader on the delivery side, introducing competition on the delivery side (between hospitals) in the 1990s, with the creation of the NHS internal market in 1991; and again in England in the 2000s under first the Labour administration of Tony Blair and then the current Coalition government. On the insurance side, the Netherlands has been pursuing a policy of competition since the Decker plan of the 1990s and has been actively promoting competition on the delivery side since the turn of the century. New Zealand and the Nordic countries have encouraged competition on the delivery side, while Switzerland and Germany have introduced greater competition on the insurance side.

As articulated by politicians, the appeal of competition is simple. Competition delivers greater productivity in the rest of the economy and choice is generally valued by consumers. Extending this to the healthcare sector seems a logical way of improving

productivity. Competition between suppliers will encourage efficiency and raise quality, while increasing choice will meet consumer demands for a more personalised service and, in cases where there is cost sharing, it should make consumers more responsive to quality and price differences.

Yet at the same time as competition was being proposed as a reform model in Europe, the US market was consolidating, leading to a large rise in market concentration on the provider side and concerns over the operation of markets in healthcare in the USA (Gaynor and Town 2011). From other quarters, there is growing evidence of an association between volume and outcomes, particularly for high-tech services. While it is not clear whether this is due to selection or learning by doing (Gaynor and Town 2011), it has driven an interest in the consolidation of specialist services with an attendant decrease in the number of providers of these services. More generally, there is interest in the integration of primary and secondary care. All of these raise questions about the role of competition.

Gaynor and Town (2011) and Dranove (2011) provide detailed reviews of the role of competition in healthcare. Against this backdrop, the focus of this article is limited to a narrower aim: to examine what we know and don't know about competition in healthcare from reforms in the UK and England. Thus I limit my focus to competition on the provider side, as competition in insurance has not been implemented in the UK to date. The article begins with a brief summary of the main messages from the international literature on this topic, drawing heavily on Gaynor and Town (2011) before turning to the UK experience. The paper concludes by detailing the issues where very little evidence is available.

Evidence from the USA

Early research on competition followed the structure-conduct-performance (SCP) paradigm, which is theoretically underpinned by oligopoly theory. Simple models of Cournot and differentiated Bertrand competition predict a direct relationship

* University of Bristol and Imperial College London.

between market structure, firm conduct, and market performance (measured by prices and/or profits). In simpler terms, more concentrated markets facilitate behaviour that leads to higher prices and profits (Dranove 2011).

Almost all the studies are of US markets. Gaynor and Town (2011) conclude that almost all the literature finds a positive relationship between hospital concentration and price, but the strength of the relationship is affected by the structure of health insurance. Analysis of mergers (confined to US studies) supports this pro-competition conclusion. They generally show that prices increased (or increased faster relative to trend) for hospitals that consolidated relative to the control group hospitals. However, while the direction of impact of hospital mergers is clear, the estimated magnitudes are heterogeneous and vary across market settings, hospitals and insurers. There is a rapidly growing body of empirical literature on competition and quality in hospital-based healthcare. Most of the studies of Medicare patients – where prices are generally set by a regulator and individuals have close to full insurance – show a positive impact of competition on quality. This is not surprising, since economic theory for markets with regulated prices predicts such a result. However, the results from studies of markets where prices are set by firms (for example privately insured patients) are much more variable. Some studies show increased competition leading to increased quality, and some show the opposite. While this may appear surprising, it is not. Economic theory predicts that quality may either increase or decrease with increased competition when firms are determining both quality and price (Gaynor and Town 2011).

Evidence from the UK

The UK has had two periods of pro-competitive reform on the delivery side. The first was the 1990s internal market, which separated the provision of hospital care from payment for this care and allowed selective contracting between buyers and sellers of secondary healthcare. Primary care services were relatively untouched and tax-funded payments were maintained and allocated to local buyers on the basis of medical need, as before the reforms. These reforms were abandoned when the Blair administration came to power in 1997, principally due to fears of a ‘two tier’ system and concerns over

waiting times. However, in the mid-2000s the Blair administration re-introduced competition (in England only), this time within a system of prospective payments that are very similar to the US DRG system used by Medicare. The intervening ten years had also seen the growth in information on the quality of care provided at NHS hospitals. During the 1990s no such information was publicly available. During the 2000s there has been significant growth in publicly available data on provider performance, though the data that is available to the public tends to be at a reasonably aggregate level (e.g. at a hospital, rather than an individual site level).

Evidence from the 1990s internal market

The evidence from the 1990s reforms is relatively limited, but the evidence that does exist suggests the following. Firstly, costs may have fallen more in competitive areas (Soderlund and Propper 1998). Secondly, buyers of healthcare who were primary care providers (General Practitioner (GP) fund holders) seemed to be able to extract better deals from hospitals than the larger purchasers responsible for whole populations, responsible for all the patients in their area and for purchasing emergency as well as elective care (Propper, Croxson and Shearer 2002). This was perhaps because they had stronger financial incentives, in that any gains from purchasing could be retained to put into their businesses, whilst the larger purchasers had to break even every year. The larger purchasers were also concerned about the viability of local services if they moved services at the margin, while the fund holders were less concerned with this issue as they had no remit for the provision of all secondary care services (Le Grand, Mays and Mulligan 1998). Thirdly, hospitals facing more competition focused on reducing waiting times, but at the expense of unobserved quality (Propper, Burgess and Green 2004; Propper, Burgess and Gossage 2008). The findings that waiting times fell but also unobserved quality fell, whilst uncomfortable for the proponents of competition, fall into line with the predictions from simple models of competition with imperfect information, which show that as competition increases, sellers will focus on those aspects of care for which demand is more elastic (Dranove 2011). As buyers of care during this period were interested primarily in increasing volume and reducing waiting times, and quality of care was not made public, it is not surprising that sellers engaging in competition focused on bringing down

waiting times at the expense of unmeasured quality. Fourthly, despite the political fears of two tier services, there is little evidence that patients whose secondary elective care was purchased by GP fund holders received more care than those patients covered by the larger health authorities (Cookson et al. 2010).

The evaluation of these reforms was hampered by lack of data. So for example, the most robust study of the impact of competition, which exploits pre-reform variation in hospital density, examined only waiting times and quality as measured within hospital mortality following admissions for heart attacks (Burgess et al. 2008). Whilst this measure has been used extensively in economics literature as a measure of hospital quality, death rates, whilst important, are only one aspect of quality and there are issues over their reliability when volumes of admissions are small and the measures are noisy from year to year. In addition, studies were unable to get inside the ‘black box’ of what exactly hospital managers and buyers were doing to bring about gains (and losses) from competition. Evaluation was also hampered by the short-lived nature of the reforms. They were only started in 1991 and ended in 1997, but even during the reform period, their effect was muted and the freedom of buyers and sellers curtailed (Le Grand et al. 1998), perhaps due to fears of the emergence of a two tier system and a more general concern on the part of central government to limit variation within the NHS.

Evidence from the English reforms of the 2000s

The reforms of the 2000s were of a similar nature to those of the 1990s, but were characterised by three important differences. Firstly, prices for elective care were set centrally using a prospective payment system similar to the US DRG system. Secondly, data on quality and other attributes of care was much more widely available. Thirdly, the incentives for sellers had been boosted through two further reforms. The first was the Foundation Trust (FT) programme. This gave hospitals deemed by the regulator to be better run greater autonomy of action, including in the retention of surpluses. Better-run status was defined primarily in terms of financial propriety and a reduction in waiting times. All hospitals could apply for FT status, so the programme essentially gave all hospitals (not just FTs) an incentive not to make losses and, possibly, to increase quality or at least not increase waiting

times. The second reform was the government’s promotion of entry by private sector providers supplying elective treatments for which there were long waiting lists. The evaluation of this set of reforms is ongoing, but the following stylised facts seem to be emerging.

Firstly, there is evidence that the take up of choice was slow and that GPs did not offer it to all patients (Dixon et al. 2009). Despite this, there is also evidence that patterns of care seeking changed in a manner that suggested that better quality hospitals were being chosen more often. Gaynor, Moreno-Serra and Propper (forthcoming) show that hospitals with lower pre-policy mortality rates and waiting times had a larger increase in elective patients post-policy than those with higher mortality and higher waiting times. A structural demand analysis of patients seeking elective coronary artery bypass graft treatment showed that sicker patients were more sensitive to mortality rates post-reform (Gaynor, Propper and Seiler 2012b). Secondly, two papers use the variation in the location of hospitals pre-policy to undertake a difference-in-difference analysis to derive a causal effect of competition (Cooper et al. 2011; Gaynor et al. forthcoming). They exploit the fact that hospitals located in areas where there is a higher concentration of hospitals are more exposed to the policy of competition post policy (similar to Propper et al. 2008). The papers show that death rates for patients admitted with heart attacks fell to a greater extent in hospitals located in competitive areas than in other hospitals post-policy. Gaynor et al. (forthcoming) also find that hospitals located in more competitive areas had a larger fall in mortality from all causes and lower lengths of stay for elective surgery post-policy, with no increases in overall expenditure.

The findings that quality has improved fit with the Dranove-Sattherthwaite (Dranove 2011) model of competition between hospitals. In contrast with the internal market of the 1990s, quality is better measured and price competition (at least for elective care, which was covered by the prospective payment system) was not possible. Buyers therefore care about quality and competition should increase quality. Nevertheless, the difference-in-difference approach remains open to the criticism that we don’t know what is happening within the “black-box” – these papers do not present findings on how individual managers in hospitals and clinicians experienced the reforms.

One paper may shed some light on what may be driving the results. Bloom et al. (2010) examine the relationship between the quality of hospital management practices, outcomes and competition. They find that better quality management practices are associated with better NHS hospital outcomes, including lower deaths following emergency AMI (acute myocardial infarction) admission, better financial performance, higher staff satisfaction and higher scores from the quality regulator. In addition, exploiting the fact that hospitals located in marginal political constituencies are less likely to be closed, they use political marginality to instrument the number of competitors a hospital faces. They find that competition appears to result in better management practices. As the turnover of NHS managers is high, this may be one reason why hospitals located in competitive areas have better outcomes after the reforms – as the quality of management in these hospitals is higher.

Thirdly, despite fears that poorer patients would be disadvantaged by increasing choice and competition, there seems to be little evidence that this is the case. Dixon et al. (2009) found that choice was not only exercised by the better off. Cookson, Laudicella and Li Donni (2011) also found no increase in the inequality of treatment across patients from different areas. Gaynor et al. (2012b) found that the individuals from poorer areas were more sensitive to waiting times after the reform.

The differences between the findings from the 1990s internal market and the experience of the 2000s highlight the importance of information. While the information available in the 2000s was not perfect, it was greater than in the 1990s and perhaps allowed doctors (as agents for their patients) to steer patients away from poorer performing local hospitals. The fact that prices were not part of the choice process meant that they did not have to trade off price against quality. We can say less about the importance of incentives for managers. It seems clear that achieving greater autonomy (FT status) was important for hospitals; but whether this gave them incentives to improve quality is less clear as the FT regime placed an emphasis on financial and waiting time performance rather than clinical quality.

An incomplete picture

The emerging evidence indicates that competition between hospitals can improve outcomes in an NHS setting, but unfortunately we can only see part of the picture.

- The outcomes that have been examined constitute only a small part of the whole activity of hospitals and some would argue these outcomes are not measured accurately enough to base strong conclusions upon.
- The mechanisms by which improvements have occurred are not well understood or researched.
- There are no studies of the (transactions) cost of introducing competition.
- We know little about competition in primary care settings in the UK (or elsewhere).

The drive for competition is taking place in cases where there are also calls for consolidation and vertical integration to achieve higher clinical quality. However, the evidence is limited here too.

- In a recent review of the US literature, Vogt and Town (2006) concluded that hospital market consolidations tend to increase prices, have a mixed impact on quality and achieve only modest savings, few of which are passed onto payers and consumers in terms of lower prices. A case study of a small number of hospital mergers in England concluded that these did not appear to realise large gains (Fulop et al. 2002). The scale of consolidation in England has been very large: between 1997 and 2003 approximately half of all acute hospitals were involved in a merger with other hospitals. Gaynor, Laudicella and Propper (2012a) found that these mergers reduced the volume of activity and staffing, but did not increase output per staff member and appeared to achieve no gains in terms of quality. These limited gains raise questions over a policy of unfettered mergers, as this reduces competition.
- While the model of integrated care does hold some appeal, there has been little economic analysis of this model. In a recent review, Bevan and Janus (2011) cast doubt on whether integrated care can be achieved in the UK given the historic separation of specialists within hospitals and general practitioners in the community. In its favour, integration can be achieved by contracting, as well as by the full-scale merger of primary and secondary care providers. An example is the Accountable Care Organisation

(ACO) model that is being proposed for the US system (Antos et al. 2009). There are still very few studies of integrated care organisations and of the different ways of bringing about integration, and this is likely to be a fruitful area for research.

- The (primarily medical) literature has shown a strong association between volume and better outcomes, particularly in high-tech procedures. There is some research to suggest that this is causal in some cases (Gaynor and Town 2011). If causal, then the gains from competition need to be balanced against the gains from consolidation.

References

- Antos, J., J. Bertko, M. Chernew, D. Cutler, D. Goldman, M. B. McClellan, E. McGlynn, M. Pauly, L. Schaeffer and S. Shortell (2009), *Bending the Curve: Effective Steps to Address Long Term Healthcare Spending Growth*, Engleberg Centre for Healthcare Reform, Brookings, Washington D.C.
- Bevan, G. and K. Janus (2011), "Why Hasn't Integrated Healthcare Developed Widely in the United States and Not at all in England?", *Journal of Health, Politics, Policy and Law* 36 (1), 141–64.
- Bloom, N., C. Propper, S. Seiler and J. Van Reenen (2010), "The Impact of Competition on Management Quality: Evidence from Public Hospitals", *NBER Working Paper* no. w16032.
- Cookson, R., M. Laudicella and P. Li Donni (2011), "Did Increased Competition Undermine Socio-economic Equity in Hospital Care in the English National Health Service from 2003 to 2008? Panel Analysis of Small Area Administrative Data", *Journal of Health Economics*, in press.
- Cookson, R., M. Dusheiko, G. Hardman and S. Martin (2010), "Competition and Inequality: Evidence from the English National Health Service 1991-2001", *Journal of Public Administration Research and Theory* 20, 181–205.
- Cooper, Z., S. Gibbons, S. Jones and A. McGuire (2011), "Does Hospital Competition Save Lives? Evidence from the English NHS Patient Choice Reforms", *Economic Journal* 121 (554), F228–F260.
- Dixon, A., R. Robertson, J. Appleby, P. Burge, N. Devlin and H. Magee (2009), *Patient Choice: How Patients Choose and How Providers Respond*, Kings Fund, London.
- Dranove, D. (2011), "Healthcare Markets, Regulators and Certifiers", in T. McGuire, M. Pauly and P. P. Barros, eds., *Handbook of Health Economics*, vol. 2, Elsevier/North-Holland, Amsterdam.
- Fulop, N., G. Protopsaltis, A. Hutchings, A. King, P. Allen, C. Normand and R. Walters (2002), "The Process and Impact of NHS Trust Mergers: A Multi-centre Organisational Study and Management Cost Analysis", *British Medical Journal* 325, 246–49.
- Gaynor, M., M. Laudicella and C. Propper (2012a), "Can Governments Do it Better? Merger Mania and Hospital Outcomes in the English NHS", *Journal of Health Economics* 31 (3), 528–43.
- Gaynor, M., R. Moreno-Serra and C. Propper (forthcoming), "Death by Market Power: Reform, Competition, and Patient Outcomes in the National Health Service", *American Economic Journal: Economic Policy* (also available as *NBER Working Paper* 16164), in press.
- Gaynor, M., C. Propper and S. Seiler (2012b), "Free to Choose: Reform and Demand Response in the British National Health Service", *NBER Working Paper* 18574.
- Gaynor, M. and R. J. Town (2011), "Competition in Healthcare Markets", in T. McGuire, M. Pauly and P. P. Barros, eds., *Handbook of Health Economics*, vol. 2, Elsevier/North-Holland, Amsterdam.
- Le Grand, J., N. Mays and J. Mulligan, eds. (1998), *Learning from the Internal Market: A Review of the Evidence*, Kings Fund, London.
- Propper, C., S. Burgess and K. Green (2004), "Does Competition between Hospitals Improve the Quality of Care? Hospital Death Rates and the NHS Internal Market", *Journal of Public Economics* 88, 1247–72.
- Propper, C., S. Burgess and D. Gossage (2008), "Competition and Quality: Evidence from the NHS Internal Market 1991-9", *Economic Journal* 118, 138–70.
- Propper, C., B. Croxson and A. Shearer (2002), "Waiting Times for Hospital Admissions: the Impact of GP Fundholding", *Journal of Health Economics* 21, 227–52.
- Soderlund, N. and C. Propper (1998), "Competition in the NHS Internal Market: An Overview of its Effects on Hospital Prices and Costs", *Health Economics* 7, 187–97.
- Vogt, W., and R. Town (2006), How has Hospital Consolidation Affected the Price and Quality of Hospital Care?, *Robert Wood Johnson Foundation Synthesis Report* 9.