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A transaction costs analysis of changing contractual relations in the English NHS

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Abstract

The English National Health Service has replaced locally negotiated block contracting arrangements with a system of national prices to pay for hospital activity. This paper applies a transaction costs approach to quantify and analyse the nature of how contracting costs have changed as a consequence. Data collection was based on semi-structured interviews with key stakeholders from hospitals and Primary Care Trusts, which purchase hospital services. Replacing block contracting with activity based funding has led to lower costs of price negotiation, but these are outweighed by higher costs associated with volume control, of data collection, contract monitoring, and contract enforcement. There was consensus that the new contractual arrangements were preferable, but the benefits will have to be demonstrated formally in future.

Keywords: Contracts; Transactions costs; New institutional economics; Activity based financing; Payment by results; Patient choice; HRGs; DRGs

1. Introduction

The NHS in England is following the USA, Australia and many countries in Europe in introducing activity based funding, a system of paying hospitals and other providers on the basis of the work they do [1]. The key differences to previous contracting arrangements are that prices are fixed nationally, hospital revenue is directly proportional to activity, and activity ceilings have been relaxed. Hospitals receive a fixed payment – the national tariff – for each type of patient treated. Termed Payment by Results (PbR), the policy rewards hospitals for volumes of work adjusted for differences in casemix. Casemix is defined by the Healthcare Resource Groups (HRG) to which each patient is allocated [2].

Along with the change in the form of contracting, NHS patients are being given a choice of hospital. By and large, in the past NHS patients requiring elective (non-urgent) care simply had to wait until their local hospital admitted them. Now patients are offered a choice about where and when they receive treatment and the options include both NHS (public) and independent sector (private) hospitals [3].

The overhaul of contractual relations is intended to provide stronger incentives for NHS hospitals to

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increase activity and/or lower costs. PbR links hospital income and activity much more closely than previously has been the case. If they receive a fixed payment, hospitals should be encouraged to find ways to cut costs and reduce length of stay in order to find capacity to accommodate more patients. Access should improve because hospitals have a direct financial incentive to do more work—they receive extra funds for each additional patient they treat. In the past purchasers may have been reluctant to refer patients and hospitals reluctant to accept patients not included in their formal contracting arrangements because of the difficulties of dealing with one-off financial matters. The new system is intended to remove these financial obstacles, and therefore to allow patients greater choice of hospital.

However, it may not be costless to realise the benefits that might arise from the changed contracting regime. The Audit Commission, an independent body established to monitor public spending, reported that "payment by results has been time consuming and costly to implement. The additional burden on senior management, particularly where formal disputes arose, was often significant" [4].

This paper applies a transaction costs approach to quantify and analyse the nature of how contracting costs have changed as a result of the contracting reform. Section 2 presents a description of the analytical framework and of the nature of contracting arrangements in the NHS. Section 3 describes the empirical approach and source of data. Results are presented in Section 4 and concluding comments offered in Section 5.

2. Contracting arrangements

The theoretical framework for identifying and quantifying transaction costs is that of New Institutional Economics (NIE), originated by Coase [5] and developed by Williamson [6,7]. This framework has been applied to analyse the costs associated with changing contractual arrangements in a number of health care contexts [8–13]. Essentially, the approach provides insight into organisational structure in terms of the contractual relationships required to support it, defining the associated costs as transaction costs.

Transaction costs arise in any situation of imperfect agency, where bounded rationality and opportunism give rise to incomplete contracts between the principal and agent [14,15]. Bounded rationality describes the limitations of either party to act as fully informed rational agents, because of the complexity of the decision-making process and uncertainty about future events. Opportunism refers to the pursuit of individual self-interest, where the goals of the agent do not coincide with those of the principal. It is costly to manage the impact of bounded rationality and opportunism, and the level of costs varies according to the governance arrangements between principal and agent. Most of the NIE literature compares the choice of governance structure between hierarchical arrangements and market-type arrangements [7,16,17].

Market-type arrangements between a payer (principal) and provider (agent) rely on detailed specification of the contract between the two parties in order to limit the possibility of opportunistic behaviour. But, under conditions of uncertainty, bounded rationality may make it costly to arrive at a precise contractual specification. Less formal contracts are required in a hierarchical system where a manager (principal) can tell a subordinate (agent) what to do as circumstances arise. But subordinates usually face low powered incentives and lack detailed specification of their role, which allows them greater scope to act opportunistically, particularly with respect to the effort they apply to furthering the principal's objectives. To counter this tendency, the principal in a hierarchical governance structure has to monitor more closely whether the subordinate actually does as instructed.

The level of transaction costs and optimal governance structure also depend on the nature of the exchange that constitutes the basis of the relationship between principal and agent. Frequent and repeated exchanges are likely to entail lower transaction costs, because the parties are able to learn more about the circumstances of the exchange and about each other's behaviour and are less likely to wish to jeopardise a potentially long-term relationship by behaving opportunistically in the current situation. Costs will also be lower in contexts where assets are highly specific to the particular agreement, meaning that they cannot be diverted easily to other tasks. Each party has more at stake, and is less likely to risk undermining the relationship by opportunistic behaviour.

As well as describing the factors that drive transaction costs, the NIE literature classifies costs in terms of the time at which they occur during the contractual

process. *Ex ante* transaction costs are incurred prior to entering into a contract. These costs are subdivided into search costs, which include the costs of acquiring information to address the problem of bounded rationality, and negotiation costs, including the costs of bargaining and agreeing the contract between principal and agent under conditions of uncertainty about future events. *Ex post* transaction costs are those incurred after the contract has been placed. These costs are subdivided into monitoring costs, mainly to counter opportunistic behaviour, and enforcement costs, which are incurred in the case of disputes arising from incomplete contractual specification.

We apply the NIE framework to analyse the change in transaction costs arising from the change in the form of the contract between purchasers (Primary Care Trusts—PCTs) and providers (hospitals) in the NHS. Contracts are negotiated between PCTs, which are organisations that commission care on behalf of geographically defined populations, and hospitals, which provide hospital services. Previous block contacts between the two parties have been replaced by PbR, a form of activity based financing (ABF).

Block contracts stipulated a total contract value, usually specified at specialty level. The PCT decided how much of its budget to devote to each specialty level contract and negotiated with a hospital how much activity would be made available. Thus there was little uncertainty about the expected level of total expenditure and limited scope for opportunistic behaviour. But the arrangements were inflexible and could lead to under-supply when demand did not match the PCT's expectations and provided little incentive for hospitals to exceed their contracted levels of activity or reduce their costs.

Under PbR, local specialty level prices have been replaced by national prices based on the HRG to which each patient is allocated. Moreover, hospitals no longer face a ceiling on the amount of activity they undertake because the introduction of 'Choose and Book' allows patients greater choice about where and when they are treated [3]. This gives hospitals with low costs strong incentives to attract patients and undertake more activity, because they are able to increase their revenue in proportion to the growth in activity. High cost hospitals have incentives to reduce their costs.

The move to PbR has meant that price setting is now a centralised function, and the transaction costs associated with this function are lower than when prices were determined locally [1]. But transaction costs have increased for other aspects of the contractual process.

This system of activity-based payments can be expected to increase transaction costs for hospitals in at least two ways. First, activity is described more precisely under PbR. Payments are made on the basis of HRG allocation, so hospitals have to ensure that all the requisite diagnostic and procedural information is extracted from the patient's case notes to determine appropriate HRG allocation. Hence, the costs of clinical coding are expected to increase.

Second, hospitals are likely to require more precise financial information because of the clearer relationship between activity and revenue under PbR. Information requirements include early warning about shifts in the level and type of activity, as these will influence the revenue stream. Additionally, more precise information may be required about the costs of provision, including how costs are likely to change in response to changes in the level and type of activity, and which HRGs are likely to be 'profitable lines of business' in each organisation [18].

From the PCTs' perspective, while negotiating effort with respect to price is minimised under PbR, considerably more attention has to be devoted to management of activity. Under PbR it is more difficult for PCTs to ensure that expenditure equates to their budget allocations, because they cannot impose activity ceilings or reduce the unit price paid.

PCTs also have to put effort into countering the possibility of opportunistic behaviour by hospitals, particular in verifying that HRG allocations are correct. There is evidence from other countries of hospitals engaging in 'up-coding' when operating under ABF arrangements, extreme forms of which may involve falsifying procedural information or recording complications that may not have been present [19–21].

In summary, the net effect on total transaction costs of moving from block contracting to PbR depends on whether reduced effort spent on negotiating prices is offset by greater attention to other aspects of the contracting process. This study was designed to quantify and assess the nature of the change in transactions costs from moving from one set of contracting relations to the other.

3. Methods and sample

At the time of the study, purchasing in the NHS was undertaken by 311 PCTs, which receive an annual budget from which to commission care on behalf of their resident population. In 2004/2005, the average PCT served a population of 164,000 and received a budget of £192 million [22]. Since the study was conducted the number of PCTs has fallen to 145 through mergers. Secondary care is provided by 173 acute or specialist hospitals, admitting an average of 77,000 patients, with an average income of £157 million [22].

To gain insight into the change in the transactions costs, we conducted an in-depth interview study at three PCTs and three hospitals based in either South Yorkshire Strategic Health Authority (SYSHA) or London. Lessons emanating from SYSHA are likely to be of national interest because PbR is being implemented to all acute hospitals in the region ahead of the national timetable. Experience in London may be instructive because of the greater variety of contracting parties with which an organisation has to deal. We also purposely selected hospitals that coded from case notes or summary forms to gain insight into the range of clinical coding experience. Information about the organisations comprising the sample is provided in Table 1. These PCTs and hospitals are larger than the national average. The proportion of expenditure on administration is above the national average for the sampled PCTs (national average 1.3%) but below that for the hospitals (national average 4%) [22].

Table 2
Change in administrative costs falling on PCTs and hospitals

Type of cost	Hypothesised change in cost
Search	Unchanged, as no change in contractual parties
Price negotiation	Reduced, as undertaken centrally
Quantity negotiation	Reduced for hospitals, as contracts no longer specify volume Increased for PCTs, because greater uncertainty about volume
Monitoring	Higher for hospitals, because of a more precise specification of activity and because revenue is directly proportional to volume Higher for PCTs, because activity-based payments create greater scope for opportunistic coding behaviour by hospitals
Enforcement	Higher for both parties, if opportunistic behaviour leads to more disputes

Data collection was based on semi-structured interviews conducted between late-January and early March 2006 with 12 key stakeholders, including chief executives, finance directors, contracting and service development managers, and information managers. Interviewees were asked to describe which activities and costs had changed as a result of PbR, to identify

Table 1
Organisational details, 2004/2005

PCT/hospital	Position of the people interviewed	Population served/ patients admitted	Operating costs, £ in million	Management costs (%), £ in million	Cost increase, £ in thousands
PCT1	1. Chief Executive 2. Associate Director of Strategic Planning	250,000	290	6 (2.1%)	190
PCT2	1. Director of Finance	215,000	297	6 (2%)	110
PCT3	1. Director of Finance	250,000	313	5 (1.6%)	90
T1	1. Commissioning Manager 2. Head of Information 3. Director of Finance & Commissioning	124,423	213	8 (3.8%)	110
T2	1. Assistant Director of Finance 2. Information Services Manager 3. Service Development Contracting Leader	196,220	490	15 (3.1%)	100
T3	1. Director of Clinical Information 2. Finance Manager	98,470	471	15.5 (3.3%)	180

the factors driving these changes and to classify these changes as transitory or permanent. In-depth questions were asked about the clinical coding system, the data collection and verification processes, the nature of reporting and monitoring arrangements, and staffing and training matters [23].

Interviews were tape-recorded and fully transcribed. We built on the NIE literature to organise and analyse the information derived from the interviews. We used the categorisation system introduced in Section 2 to posit hypotheses about how costs falling on PCTs and hospitals are likely to change as a result of the change in contracting arrangements. These hypotheses are summarised in Table 2.

4. Results

4.1. Total transactions costs

PCTs and hospitals estimated that their administrative costs had increased by £130,000, on average, as a result of PbR (Table 1, final column). Cost increases are driven predominantly by increases in staffing, with appointments to junior or mid-level posts usually in the information/coding and finance departments. Given that most of the additional expenditure is on staff, the organisations expected these costs to persist over the longer term.

4.2. Ex ante search costs

Most types of search cost are little affected by the introduction of PbR. For instance, PCTs still need to undertake needs assessment and make predictions about the health care requirements of the population for which they are responsible. Such activities are independent of this change in contracting arrangements.

4.3. Ex ante negotiation costs

PbR has influenced the process of negotiation between hospitals and PCTs by changing the general nature of the relationship between the parties and the specific nature of negotiation around volumes of activity. Interviewees commented that the new contractual arrangements had simplified the 'rules of engagement' and made them more transparent.

"I think on one level the contracting arrangements are much more straightforward. There are clearer rules about what occurs in certain situations. . . . And year by year I think there is less and less room for discretion in the contracts that we agree with the PCTs which probably means that the contract discussions are less protracted than they used to be." (T2)

The clearest difference between block contracting arrangements and PbR relates to negotiations around the volume of activity. Previously, reaching agreement about activity levels was a central preoccupation of contractual negotiations. But, once agreement had been reached, there was little uncertainty about the amount of activity and associated payment, because these were not conditional upon the actual level of expressed demand in the community. If demand exceeded supply in any given period, patients were usually made to wait for hospital admission.

The introduction of PbR has been associated with a relaxation of volume controls. This is politically desirable, given the policy aims of increasing activity, reducing waiting times and supporting patient choice, under which patients are given more choice about where they receive treatment. But the downside is an increase in contractual uncertainty on the part of PCTs about how much activity they are liable to pay for. The 'bounded rationality' of PCTs means that they are unable to predict future events accurately, including how hospitals will respond to the revised incentives they face, the level of demand and how patients will exercise choice. This means that PCTs have to put more effort into managing demand.

There was consensus among PCTs about the problems associated with the hospitals not having to gain approval before increasing their activity. However, as might be expected, hospitals offered a different perspective on the nature of the 'problem', suggesting that it stemmed from a failure by PCTs either to accurately predict demand requirements or to put effective measures in place to manage demand in other ways [24].

"They [PCTs] were planning for significantly less than what happened and significantly less than what they ended up paying for. They always say we overperformed but we are adamant that it was them who under-estimated . . . PCTs tend to try to blame PbR for

that. But I don't think that is fair: I think it was just the PCTs under-commissioning." (T2)

4.4. Ex post monitoring costs

Monitoring of activity has changed under PbR in two respects. First, in comparison to block contracts, activity-based payments have introduced greater uncertainty into the contracting process in terms of the financial implications of changes in the nature and volume of activity. Second, because it is difficult for PCTs to verify whether patients are allocated to the correct HRG, providers have an opportunity to misrepresent the nature of their activity. Increases in monitoring costs are evident at various stages of the process of information flow from the hospital to the PCT, and impact upon:

- data collection within the hospital;
- analysis of activity and financial data within the hospital;
- verification and querying of the information between PCT and hospital.

4.4.1. Data collection

PbR has stimulated greater attention to data collection within hospitals. Two aspects of the data collection process appear to have improved – or, at least, have been recognised as needing to improve – as a result of PbR: the timeliness of coding; and coding accuracy.

"The reporting has changed significantly . . .It is the timeliness that is the key and that was obviously the biggest issue in the first year because we were effectively two months behind. . . . The aim is to be able to say that within a month of being discharged, a patient will be fully coded, and to keep hold of the richness of coding that we have got." (T1)

Hospitals have adopted four complementary strategies to improve data collection, notably clinical coding. First, hospitals are engaging more with clinicians. The quality of electronically coded information depends on what is recorded manually in the case notes. Obviously, if the primary information is unavailable, it cannot be extracted by coding staff. Consequently, HRG allocations may poorly reflect the care requirements of patients and hospitals will not receive the appropriate tariff payments. Greater engagement with clinicians is viewed as key to ensuring accurate recording of the primary data in the case notes and hospitals have taken steps to engage clinicians more fully in the coding process.

Second, hospitals are changing their source data for electronic coding. Some hospitals code directly from the case notes, which is costly because it necessitates a process of getting the notes from the ward to the coding department. But, perhaps justifying this cost, the quality of the information extracted is likely to be high. Other hospitals code from a summary discharge form or 'To Take Out' (TTO) forms. It takes less time to code from these alternative sources, but the quality of data is poorer. Hospitals were moving toward more complete coding directly from case notes, recognising that their revenue depended on accurate information.

Third, hospitals are considering recruiting more medical records staff and improving their training and terms and conditions. However, the shortage of skilled coders has led to recruitment difficulties. To fulfill requirements in the short-term, coding staff are being paid to work overtime.

Fourth, hospitals are addressing perceived inadequacies of their information systems to meet the demands of PbR. However, investment in improving these systems, though given added urgency by PbR, was not driven (at least, not solely) by the move to the new payment arrangements. PbR may have provided added impetus for 'catch-up' investment, but hospitals have to review their information systems on an ongoing basis anyway and would have had to do so irrespective of the introduction of PbR. As such it would be inappropriate to apportion the costs associated with IT upgrading exclusively to PbR.

4.4.2. Hospital analysis of information

Internal scrutiny of activity and financial data assumes greater significance under PbR than under block contracting, because of the clear relationship between income and accurately coded activity. As interviewees said: "you get no tariff if it's not coded, and you get £1500 if it is". In response, hospitals have built on their existing scrutiny procedures. This is evidenced by more focussed attention to coding and financial issues by hospital management. Reports to the hospital management board are more detailed and areas of volatility are increasingly highlighted.

"We do have a lot more contact with management in terms of explaining the potential financial implication for them. There is a lot more reporting for internal finance so that they can then engage general managers or engage PCTs. That's all to do with understanding the financial impact of PbR." (T1)

4.4.3. PCT verification of information

Before making payments PCTs need to verify the accuracy of the activity data they receive. But the introduction of activity-based payments has increased the possibility of opportunistic behaviour on the part of providers because payment is dependent on the HRG to which each patient is allocated. Hospitals can influence this allocation because it depends on the data they themselves collect and code [25]. It is more difficult for PCTs to verify the accuracy of HRG allocation than it was to check the specialty in which the patient was treated. Verification is difficult because PCTs do not have access to the primary information source (the case notes) from which the electronic data have been extracted.

"We have a lot of issues around un-coded activity. For one hospital in particular [uncoded activity] every month cause quite a large proportion of their activity . . . One hospital has just re-started giving us PbR level information but we went for a year without anything from them. So activity information that we are getting from the hospital is not up to the standard that we need to properly monitor." (PCT3)

The lack of access to the primary source makes it difficult for PCTs to verify that HRG allocations and the prices paid are appropriate. The main strategy to verify information is by raising queries with hospitals.

"There are really two levels of the queries. There is the actual content of the data, therefore questions about why certain things are coded certain ways. The other [arises from PCTs] pushing for elective activity to be minimised." (T2)

4.5. Ex post enforcement costs

The relaxation of volume controls under PbR has increased tension between hospitals and PCTs, with PCTs finding it more difficult to live within their budget allocations. PCTs face two problems under the current arrangements that encourage hospitals to increase activity. First, it is difficult for them to anticipate and, therefore, budget for what the activity increase might amount to. Second, PCTs are unable to exercise any limitation on the financial implications of the activity expansion: they cannot impose a ceiling on the amount of activity they are liable for and they are forced to pay at average cost for each additional elective patient treated.

The balance of negotiating power in the NHS has long been with providers rather than purchasers [26]. There are various reasons for this, but one is the limited ability of PCTs to impose sanctions in response to shortfalls in contractual obligations. The clear relationship between activity and expenditure/income has both sharpened incentives, but also increased the likelihood of disputes between the contracting parties. This was mentioned in a number of interviews.

PCTs felt that some aspects of the current arrangements placed them in a weaker position. One aspect of this is that PCTs have limited ability to impose (financial or other) penalties. Another is that externally imposed conditions on the negotiating timetable put hospitals at an advantage. This may be because volume controls are not enforceable now that patients are able to exercise choice of hospital.

"[When a Hospital doesn't give us the information we need] we firstly negotiate with them and try to encourage them to improve [the data/information exchange process]. The difficulty is that . . . there are no penalties in there for information data quality issues." (PCT3)

4.6. Benefits of PbR

Most of those interviewed were positive about PbR, stating that it had the potential to deliver benefits to the contracting process, even if organisations had not fully realised these benefits yet. The benefits are realised in three sequential stages.

First, PbR has enhanced the amount and accuracy of information in the health system. Second, better information, both in terms of its timeliness, and its level of specificity, appears to have encouraged greater analysis and investigation by PCTs. This has led to a better understanding of what is happening to the local popula-

tion and identification of where changes might be made. Third, in turn, this has led to changes in the provision of services and better resource allocation. Interviewees told us that improvements in the quality and availability of information and the financial ability to redirect activity had had discernible influences on the quality of decision-making and, thereby, on patient care. An example is cited below, and includes the ability to shift the locus of service provision and to make investments in the process of patient care.

"PbR has given us information that we have never had before to understand where patients are going and, more importantly, it's given us a real ability to shift money across sectors and across organisations and across care pathways which we have never had before" (PCT1)

However, there was a difference among PCTs in the timing of benefit realisation. Benefits were anticipated but had not yet been realised by the PCT in London, which may be due to the slower transition to PbR there.

"Up to now overall I think there are probably more costs than benefits . . .But that might be just the transitional period before it gets up and running properly. So hopefully over time the level of benefits increases." (PCT3)

5. Conclusions

Our study has provided early insight into the transactions costs associated with PbR, before it is fully implemented across England. PCTs and hospitals estimated that their costs had increased by around £130,000. Most of the additional expenditure is due to recruitment of additional staff, usually appointed to junior or mid-level administrative posts. Extrapolating from the experience in these organisations, once fully implemented, PbR can be expected to raise transaction costs by around £40–60 million per annum for England as a whole, depending on how many PCTs there are.

The marginal transaction costs of introducing PbR in England may be higher than elsewhere for three reasons. First, although it is difficult to make strict comparisons, overall management and administrative costs in the NHS as a proportion of total health spending tend to be lower than in other countries [27] so marginal transaction costs may be higher because of starting from a lower staffing complement. Second, most countries introduced ABF arrangements into health systems where providers had traditionally received income from multiple sources. This is particularly true of countries with a substantial private health insurance market, such as the United States and Australia. In such contexts, the marginal transaction costs of introducing ABF arrangements to pay for public patients may have been minimal, as providers already had extensive experience and infrastructure in place in order to bill for their private patients. Third, England starts from a low base in terms of its informational infrastructure, in relation to both clinical coding and to patient-level costing. Higher transaction costs in England under PbR may be due in part to past under-investment in clinical coding, costing and information systems.

The main changes in transaction costs arise from:

- higher costs of negotiation. While there are lower costs in negotiating prices and volumes, this is offset by difficulties PCTs have in managing activity levels, because hospitals no longer have to get approval to expand their activity, thus making it more difficult for PCTs to live within their budgets.
- higher costs of data collection, due to PbR's requirement for accurate patient-level data. Hospitals have recruited staff to ensure better extraction of data directly from case notes rather than summary forms.
- higher monitoring costs, partly because hospitals no longer have to get approval to increase their activity, which means that PCTs face greater uncertainty about what they might have to pay for, and partly because PCTs need to verify that hospitals are not behaving opportunistically with respect to coding their activity to particular HRGs.
- higher enforcement costs, with the sharper relationship between activity and income/expenditure increasing the potential for more disputes between hospitals and PCTs.

The net effect is an increase in transaction costs. As PbR is rolled-out, hospitals need to focus attention on both their coding and costing activities, particularly to ensure that patients are allocated accurately to their appropriate HRG. PCTs need to put increased effort into ensuring that the volume and type of activity that is being undertaken by their hospitals is counted and

coded accurately, and that volumes are affordable. PbR has increased the scope for disagreement between hospitals and PCTs over such matters, if only because the financial implications are much greater than they used to be.

It may be that the impact of some of the drivers of costs can be ameliorated in various ways. For example, the Audit Commission is developing an assurance framework, designed to improve the quality of the clinical and financial information that underpins PbR [28]. Strengthened arrangements around data quality may reduce local costs associated with verification of the accuracy of patient-level data and reduce opportunities for gaming [29]. Similarly enforcement costs might be reduced by setting clear rules of engagement. The English Department of Health is developing a Code of Conduct, which sets out ground rules for organisational behaviour and guidance on the resolution of disputes [30].

Perhaps justifying the cost increase, interviewees indicated that PbR has brought benefits, and there was consensus among all those interviewed that the PbR system was preferable to previous contracting arrangements, partly because PbR had sharpened incentives and introduced greater clarity into the contracting process. In addition, interviewees indicated that PbR had led to improvements in the process of care delivery, by enabling resources to be shifted across settings and, because of the improved specificity of information, by highlighting where service improvements might be made. It will be important to demonstrate formally whether these perceived benefits of PbR are realised elsewhere as the policy is rolled out in the future. Such evaluation should consider the extent to which PCTs are able to live within their budgets and shift the location of care, measure the effect on hospital activity rates, waiting times and efficiency, and monitor potential adverse behaviours such as whether hospitals are engaging in supplier induced demand, "cream skimming" of low risk patients, "dumping" of patients earlier than they should be discharged, and opportunistic coding behaviour [31,32].

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