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Reviewing RAWP

Accounting for cross boundary flows

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Abstract

RAWP (Resource Allocation Working Party) allows for cross boundary flows by adjusting regional or district health authorities' (DHAs) targets at an average specialty cost. The previous paper in this series examined problems for an inner city district health authority arising from RAWP cross boundary flow adjustment. This paper examines the likely importance of these and other problems for the National Health Service as a whole.

Cross charging has been proposed as an alternative method of funding flows. District health authorities would receive an allocation equivalent to their RAWP target and then all non-emergency flows would be agreed between the authorities where patients live and competing authorities offering treatment at previously negotiated charges based on local estimates of each type of case. The problem of cost estimation is usually cited as a difficulty with this proposed reform, but this paper also discusses other important issues that tend to be neglected.

Introduction

Cross boundary flows exist because the administrative boundaries defining health authority populations often do not correspond to the actual pattern of use of hospital service by patients. These flows arise not only from emergency cases and tertiary referrals but also from patient convenience and established links between general practitioners and individual hospital consultants. RAWP recognised that health authorities should be compensated for the costs incurred in treating these cross boundary flows.¹ There is therefore an adjustment for non-psychiatric inpatient cross boundary flows in health authorities' targets at national specialty costs. The Department of Health and Social Security (DHSS) review of RAWP² is currently considering the adequacy of RAWP methods for accounting for the case mix of cross boundary flows. The paper considers this and other problems with the RAWP methods before considering cross charging as a possible solution.

Problems with current RAWP methods

ADEQUACY OF THE ADJUSTMENT FOR CROSS BOUNDARY FLOWS

Criticisms of the RAWP method of accounting for cross boundary flows have focused on the crudeness of the adjustment to targets. This is at the national average cost for each specialty as estimated using the DHSS specialty cost model.³ It has been argued that flows tend to be more severe and complex than the average. At regional level evidence suggests that inadequacies in the funding of flows are not very significant because flows are quite small, amounting in most regions to only a few per cent of caseload and over 10% in just three out of 14 regional health authorities. A sensitivity analysis of regional targets found that large changes in the specialty costs of flows affected targets by only a few percentage points.⁴

At district level the larger scale of flows suggests that inadequacies in their funding are likely to be more important. Over half the Thames districts have cross boundary flows of over 30% of their caseload, and nearly a quarter have flows of over 50%. But the net flow is considerably less because a district with high flows in tends also to have high flows out. So if flows are more complex than the average then the net effect on costs for each district will probably be neutral. A study of flows between districts in the North Western Regional Health Authority examined the net effect of more complex cross boundary flows on district RAWP targets.⁵ In only one district did the case mix of inpatients, as measured by expected length of stay by disease category, have more than a 1% effect on target. Even where the flows are more complex, this could be because they are tertiary referrals, which are often designated as regional specialties which have their costs protected to varying degrees by regions and are funded closer to their actual costs than the "bread and butter" specialties.

More recent research in the West Midlands Regional Health Authority has examined cross boundary flows of non-regional specialty cases at a teaching hospital in Birmingham.⁶ The research was confined to flows from districts outside Birmingham because it was assumed that flows from the rest of the city were likely to be flows of convenience and hence probably not more complex. They found that such flows had on average a longer length of stay of 15% in general medicine and 20% in general surgery than local cases. The "hotel costs" of the additional stay were likely to be small, but the longer length of stay is a proxy for case complexity, which could also affect treatment costs. However, the impact on the district's RAWP target of allowing for the case complexity would be reduced because

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only 25% of its cases were non-regional specialty cases from outside Birmingham. So the final impact on the non-psychiatric inpatient target was unlikely to be more than 5%.

In most cases the compensation for inpatient flows is likely to be adequate, but a problem remains over the failure to have any allowances for flows of day patients and outpatients. Some regions are attempting to remedy this lack within their own modified RAWP formulas, but absence of routine data on outpatient flows is a major handicap to these developments. The NHS Management Board's review of RAWP² has recommended that day case flows should be included in the formula when Körner data become available but cannot do so for outpatient flows owing to the lack of data.

Compensating for inflows using crude costs and failing to compensate for flows of day patients or outpatients can generate perverse incentives. In theory, districts have a financial incentive to treat cases that cost less than the national average specialty cost and are discouraged from treating expensive cases. They are also discouraged from replacing inpatient regimens with alternatives such as day or outpatient care when they may be more appropriate and cost effective, because for inflows this reduces their RAWP target at the national average specialty cost with no corresponding allowance for the extra day or outpatient cases.¹ It was never RAWP's intention that districts' behaviour should be affected by these incentives. However, as overtargued districts face increasing financial pressure they are beginning to consider responding to the implicit financial incentives of the system.^{7,8}

LACK OF CONTROL OVER OUTFLOWS

The focus of published reports has been on criticisms of the method of accounting for cross boundary flows in the RAWP formula. On the other hand, the more serious problem facing many district health authorities is their lack of control over outflows: where their residents go for treatment and in what numbers.

The previous article in this series argued that districts' expenditures exceed their targets largely because of the high hospitalisation rate of their residents.⁹ These authorities tend to be concentrated in large conurbations, where there are high cross boundary flows, and as a result have only a limited control over their residents' use of services. Therefore, any attempt to cut spending by treating fewer cases will have only a limited impact on their residents' use because many of them would go elsewhere for treatment and increase the already high number of outflows.

The American health economist, Professor Alain Enthoven, in his commentary on the NHS recognised that the lack of control over outflows also has potentially adverse implications for efficiency because districts have no means of ensuring that residents treated outside are receiving the best available treatment at the lowest price.¹⁰ Instead they have to rely on the judgment of general practitioners and patients, who, although concerned about quality, are unlikely to concern themselves with cost.

Cross charging: the market approach

A potential solution to the problems with RAWP methods of the costing of inflows and control of outflows is to adopt the quasimarket approach of cross charging. This can take a variety of forms. Enthoven is a leading advocate of this solution and has outlined an "internal market model" for the NHS in which districts' allocations would be based on their RAWP population based revenue target. Districts could then choose either to provide all services themselves or to buy services from other districts or the private sector.¹¹ Districts would pay for emergency services at a standard cost and negotiate the price of other services competitively. Under such a system, according to Enthoven, districts would have an incentive to seek good quality, cost effective suppliers for non-emergency services for their populations, while at the same time having to provide the same themselves to attract patients from other districts and obtain revenue. The "internal market model"

does not treat the existence of cross boundary flows as an awkward administrative problem but as an opportunity for achieving greater efficiency in the NHS.

Cross charging also appears to solve some of the problems with RAWP methods because it is argued that: the effect of a patient flow on a health authority's income would be direct (rather than an adjustment to target); the compensation for flows would be more accurate than using national average specialty costs; districts would have considerably more control over where their residents were treated (and indeed whether they were to be treated at all). On the other hand there are likely to be significant costs in administering a charging scheme where the degree of competition that takes place could be quite limited. Furthermore, cross charging raises problems of accurately measuring costs and quality and of management interference in the free choice of hospital by clinicians.

The "internal market model" is the most wide ranging application of cross charging. But its coverage will have to be limited because emergency and urgent cases would be excluded from competitive negotiations.⁸ Such cases are a large proportion of the caseload in modern acute hospitals (estimated to be 46% in a recent study of case notes of inpatient admissions to general medicine and general surgery at a London teaching hospital).¹² This raises an additional problem because the definition of an "emergency" admission is not clear cut, and disagreements between districts are likely to arise.

The degree of competition even for the treatment of non-emergency cases would be limited. For example, the number of competitors for specialised services, such as cardiothoracic surgery, would be restricted because there are often only one or two centres in each region. For all elective work competition will be restricted by consultants' and general practitioners' unwillingness to have sick and often elderly patients travelling long distances. Also the expense of negotiating contracts and monitoring the use of services and quality of care would limit the number of hospitals a district would consider as suppliers for their residents. Another potentially important constraint on competition would be the unwillingness of districts to forsake the opportunity to build up their own local services and jobs. Making redundancies to release resources to take advantage of a cheap supplier risks souring local relations with both the unions and hospital consultants. The willingness of districts to do this will vary according to their political complexion.

In a system of cross charging districts would require better data on the cost and outcome of care than currently exist in the NHS to ensure that their residents obtained the best value care. Specialty costs, to be produced by districts for the first time in 1987, are too crude because specialties are ill defined heterogeneous groupings of cases, far too broad for estimating the cost of particular treatments or procedures. Future developments in costing, such as the use of diagnosis related groups and patient based costing are a long way off.¹³ Measuring the outcome of care would be even more difficult. The survival rates from many procedures are available, but measuring the dimension of "quality" or level of health status is at an early stage of research and development.¹⁴ Another problem with measuring and monitoring the costs and quality of care for each hospital could be the small number of cases for some procedures making comparisons difficult.

Ethical problems are likely to arise from using cross charging. In the National Health Service the decision to refer a patient is made solely by a clinician, but under cross charging it would become an explicit rationing decision made by the district. So patients would be treated only in hospitals where their district had a contractual agreement and when the agreed number of cases had not already been exceeded. A possible consequence of this can be illustrated for end stage renal failure. In the United Kingdom demand for treatment of this condition exceeds supply and clinicians appear to ration on the basis of clinical and social criteria.¹⁵ Under cross charging if a patient were referred to a renal unit in another district the hospital administration would need to check whether there was a contract with the district of residence. If there was either no contract or the end of the financial year was approaching and the budget for renal services had been spent then unless the district were willing and able to cut back on other expenditures management would have to deny treatment to that patient.

Limited uses of cross charging

Enthoven's ideal model implies a wholesale revolution in the United Kingdom health service. Other proponents of market solutions have trodden a more cautious path. For example, the Regional Chairmen's Group in collaboration with the South East Thames Regional Health Authority (SETRHA) is embarking on a study programme to examine the feasibility of cross charging.¹⁶ This authority is particularly interested in using cross charging to fund regional specialties currently protected from RAWP and funded on the basis of cost and activity not relative need. Regional specialties are concentrated in teaching districts, where local residents tend to make an inequitably high use of acute services compared with other districts. South East Thames proposes to share out the total budget between districts on the basis of residential population, so that non-teaching districts can have their fair share of regional specialty services by buying these from the teaching districts. However, if equity is the main object, the region could consider other options to avoid the problems with cross charging outlined above. For example, links between teaching and non-teaching districts could be improved by holding outpatients' clinics to increase the latter's use of regional specialty services.

Cross charging is also seen as a possible way of resolving the problems of the London teaching hospitals, which currently face large reductions in funding for district acute services because of RAWP. An example of this is an arrangement between a London hospital and a provincial district health authority in which the former agreed to provide orthopaedic services for a direct payment outside the RAWP adjustment for cross boundary flows.¹⁷ This is only a short term expedient and the provincial authority intends to build up its own orthopaedic service in the future. In the long run cross charging is likely to go against the interests of London teaching hospitals, because the higher costs of London, such as London weighting, make them uncompetitive, and because provincial authorities will probably want to provide their own services locally anyway.

Conclusions

The RAWP method of accounting for cross boundary flows is not a problem in calculating regional targets. But at district level the main problem with the RAWP method stems from the fact that districts cannot control their residents' use of services outside their boundaries, rather than from any inadequacies in the compensation for inflows (this problem is further explored for teaching hospitals in

the next paper of this series). Cross charging is one solution which directly tackles the issue of control by giving districts the right to intervene in the clinical decision as to where to refer non-emergency cases. Its proponents have argued that cross charging enables districts to negotiate the best value in terms of cost and quality and ensure that their residents do not make an inequitable use of resources. But cross charging raises difficult problems in measuring cost and quality and can also lead to conflict with clinical freedom by involving management in decisions at the individual patient level. These issues are endemic to health care but are made more pressing by this quasimarket form of organisation.

The use of cross charging in more limited forms, such as for regional specialties or providing deprived districts with short term access to London teaching hospitals, could be helpful but would not tackle the fundamental problems of cross boundary flows. Before any major changes are contemplated the likely consequences of cross charging should be examined by well designed experiments comparing cross charging with alternatives.

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A small daily dose of aspirin is often recommended as a prophylactic against coronary and other forms of thrombosis. Is this antithrombotic property shared by other non-steroidal anti-inflammatory drugs? If so, do patients receiving such drugs need to take aspirin as an antithrombotic?

Aspirin exerts its antithrombotic effect by inhibiting the enzyme cyclo-oxygenase and thus the formation of thromboxane A₂, which produces platelet aggregation. This inhibition is caused by irreversible acetylation of the enzyme. Platelets have no nucleus and cannot synthesise more of the enzyme. Return of enzyme activity depends, therefore, on the production of new platelets, and the effect of a single dose of aspirin can last for several days independent of any circulating aspirin. Other non-steroidal anti-inflammatory drugs also inhibit cyclo-oxygenase and thus platelet aggregation, but the effect is reversible and persists only while the drug is present in sufficient concentration in the blood. Individual non-steroidal anti-inflammatory drugs differ in both the degree and the duration of inhibition of platelet aggregation that they produce. For example, in one study relatively high doses of piroxicam, naproxen, indomethacin, and diclofenac had a pronounced effect, the duration of which was greatest with piroxicam and least with diclofenac. Ibuprofen had only a weak and short lived effect.¹

Other studies have shown that usual therapeutic doses of ibuprofen inhibit platelet aggregation for at least six hours.² The duration of effect is related to the plasma half life and would probably be increased by the use of

sustained release preparations of the shorter acting drugs. Like aspirin, non-steroidal anti-inflammatory drugs also inhibit vascular endothelial cyclo-oxygenase and thus the production of prostacyclin, which has antiaggregatory properties. The importance of this is uncertain, but therapeutic doses of ibuprofen seem to inhibit platelet aggregation without inhibiting prostacyclin release.²

I do not know of any studies of the antithrombotic effects of non-steroidal anti-inflammatory drugs in relation to prophylaxis against coronary or other forms of thrombosis. Presumably some non-steroidal anti-inflammatory drugs would have an antithrombotic effect if taken in sufficient dose and frequently enough to maintain plasma concentrations at the level required for appreciable inhibition of platelet aggregation. For many patients taking non-steroidal anti-inflammatory drugs, however, inhibition of platelet aggregation may be incomplete and intermittent and insufficient to have a clinically important antithrombotic effect. Finally, several studies have shown that cardiovascular deaths are at least as common in patients with rheumatoid arthritis as in the general population.³—LINDA BEELEY, consultant clinical pharmacologist, Birmingham.

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