TALKING POINT

Review of clinical budgeting and costing experiments

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In 1979 the *British Medical Journal* published several articles,¹ seven by doctors and one by a nurse, on the theme "If I was forced to cut. . . ." Five of the doctors included budgets for clinical teams in their proposals, and a sixth made some compatible suggestions. This may reflect a change of medical attitudes towards clinical budgets. British doctors should not associate clinical budgets solely with financial cutbacks because budgeting probably has advantages in a variety of economic climates. Experiments are in progress in the United States, Holland, France, and Sweden, as well as in the United Kingdom. In Britain clinical costing experiments are even more widespread and it seems timely to compare the two approaches. This paper reviews some recent experiments and

they have little real control over the variable—that is, work load related—expenditures of their departments. The result is that clinical demands are seldom scrutinised; indeed, the functional department may sometimes benefit from increasing work loads by being better placed to gain more staff and equipment and thus larger budgets in an annually funded system such as the National Health Service.

Key differences

Costing was originally developed in manufacturing industry. Directly identifiable costs are attributed, and others apportioned

Illustrative table of functional and clinical matrix*

Clinical headings	Functional headings					Total of departments shown (£)
	X ray (£)	Pathology (£)	Nursing (£)	Pharmacy (£)	etc (£)	
Surgeon Mr A						
Patient Mrs P	7	2	30	10		49
Patient Miss Q	15	7	25	18		65
Patient Mr R	2	5	45	0		52
Other patients	720	390	3200	540		4850
Total for Mr A	744	404	3300	568		5016
Total for Mr B	890	444	3750	485		5569
Total for Mr C	960	218	3800	960		5938
Total for general surgery	2594	1055	10850	2012		16523
Total for general medicine	3000	3750	14950	3600		25300
Total for geriatrics	1500	1890	19250	2600		25240
Total for psychiatry	300	150	11000	900		12350
Total for other specialties	1000	500	5000	1000		7500
Total for hospital or group	8394	7356	61050	10113 (W)		86913

*Data for illustration only and to represent nominal financial units.

(W) = Functional budgets and/or expenditure.

(X) = Specialty budgets and/or expenditure.

(Y) = Clinical consultant budgets and/or expenditure.

(Z) = Patient costs.

the available evidence about medical opinion on them. The experiments are all concerned with hospital financing, but some of the conclusions are equally relevant to community and primary care services.

There are key differences between clinical costing and clinical budgeting, but the systems are easily confused. In the functional budgeting system budget managers are designated for such departments as x ray, pharmacy, and nursing and the subsequent expenditures charged to their budgets. Functional budget holders, however, are seldom empowered to restrict the clinicians' demands on their services. Consequently,

by one of the many available methods, to units of "output." The established systems in the NHS produce functional costs for the various institutions such as the hospitals (cost per inpatient or per outpatient) or for selected departments. Looking at the table, for example, the total pharmacy expenditure (W) could be divided by the number of patients treated, producing an average pharmacy cost per patient. In the table, clinical costing may be based on the same information. When divided by an "output" figure the total expenditure on surgery (X) could produce a cost per surgical patient—an example of specialty costing. If further broken down, costs for Mr A, B, or C may be produced, which may be termed consultant costing (Y), or the costs of the individual patients may be recorded, as shown at (Z).

It is possible for all of the above types of financial analyses to be produced without any medical participation at all, provided that there is access to source data such as patients' notes and departmental records. The costing reports will be retrospective, describing what has already occurred, and they may then be used in an attempt to establish valid comparisons with the average costs produced by other centres. The difficulties

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in so doing will be referred to below, but the important feature is that costing systems lead to post hoc reviews and audits.

Budgeting systems depend on the participation of those authorised to take important decisions—that is, the functional heads of departments such as the radiologist, pharmacist, and senior nurse (see table) when only a functional budgeting system is used. This may be contrasted with clinical budgeting, where both the clinical and the functional senior staff need to take part: the former to agree the plans for their clinical services in the forthcoming period and the latter to agree how such clinical plans would affect their functional departments, and vice versa. If the two sets of plans are not compatible discussions must continue until they are.

Thus clinical budgeting is essentially concerned with agreeing service and expenditure plans for the future, after which activities are monitored to see whether the plans become reality. This cannot be done without doctors actively participating. An additional feature of most clinical budgeting systems is that the functional heads of departments and the clinicians, who have their own budgets, are entitled to some benefit if their managerial skills provide the agreed service while keeping within their budgets.

This is using incentives to achieve an improved use of resources. For instance, it becomes worth while for the clinician to screen out unnecessary or expensive prescriptions written by his junior staff because the unused funds could be redeployed.

Experiments with clinical costing

Even in clinical work experiments with costing are not new. In 1916 Burdett reported an experiment in Edinburgh where he claimed the system proved effective in reducing expenditure.² But there is a disappointing lack of evidence that other clinical costing studies, if they have not been accompanied by powerful educational programmes or by budgeting systems, have achieved improvements in efficiency. Cohen *et al* provided an experimental group of two matched teams of doctors with data about their use of pathology and x ray services.³ The hypothesis was that fewer tests would be done, but the “sharpest drop in laboratory test usage occurred in the two firms that did not receive laboratory test cost data.” A similar experiment in Australia proved equally disappointing, and Grivell *et al* report that their programme allowing clinicians to compare themselves with their colleagues “appeared to have no effect on laboratory use.”⁴

We have just completed a longer term experiment in the Brent health district in north west London. This provided all consultants with monthly reports of their demands on and the cost of their use of all diagnostic and some other departments. Consultants were also given monthly reports of the number of patients that they had treated. These data were summarised and presented intermittently to the appropriate cogwheel division and the district management team. This allowed consultants to compare their own firm's performance with that of colleagues' firms and to monitor their activities as time passed. During the research the district management team was also encouraged to use the data and take action if appropriate.

The results suggest that disseminating costing data alone produces few changes. Even after three years, when Brent's results could be compared with those of other districts, there was no evidence to show that any consultant's pattern of work or expenditure had changed markedly compared with his colleagues' as a result of receiving the data. Nor was there evidence to suggest that the district's overall performance had altered compared with other districts. “The evidence shows that none of the (hypothesised) changes in clinical use or allocation of resources occurred. . . . Costing information alone will not encourage clinicians to participate in the planning of services”—that is, the selection of limits on some services to permit the growth of others—“clinical budgets, which require a costing information system and a supportive open social setting, still may.”⁵

The above experiment tested a costing system implemented without the concurrent introduction of operational systems that depended on the use of the cost data. The same could be said about the specialty costing that is now being widely implemented in the United Kingdom.⁶ In a review of American experience, however, Myers and Schroeder studied the relative success of several experi-

ments designed to reduce demands on laboratories.⁷ They decided that audit with feedback and education seemed successful but required much effort to maintain. They suggested that positive incentives are most needed, and these are a feature of clinical budgeting. Similar findings that feedback alone has little effect have been reported by Johns and Blum⁸ and by Eisenberg and Williams,⁹ who believe that “financial rewards will be one component of most effective programs.”

Clinical budgeting—the experience to date

A much more encouraging picture emerges from the completed experiments in clinical budgeting. To the best of our knowledge, the earliest research was conducted in 1973-4 at the Westminster Hospital, London. An experimental group of ward teams (doctors and nurses, joined by administrators and others) managed budgets for their inpatient services. A variety of acute medical and surgical specialties were covered.

We have reported on this experiment previously,^{10,11} but the results showed statistically significant changes in the use of resources. The experimental teams deliberately achieved economies to finance improvements in their services that otherwise would not have been funded. In addition, it is highly probable that significant savings overall occurred.¹² The medical and nursing staff liked the system and asked for it to be adopted routinely, but the time was not opportune. Gibberd, a participating consultant physician, reported favourably on the experience,¹³ commenting that there were considerable advantages in organisations that allowed the planning and administration of a budget and the spending of money to be under the control of the same group of people. He also suggested that the incentive of being allowed to spend money saved in one sphere on requirements in another is probably important.

The next reported UK experiment took place in a geriatric unit in Cumbria. Chin *et al* found specialty budgeting to be a boost to the morale of the staff and decided that it was more effective than “yet another committee to cope with cuts and savings.”¹⁴

In the United States of America Heyssel introduced a clinical budgeting system in the Johns Hopkins Hospital.¹⁵ He claimed that the system helped the hospital to move from a deficit of over a million dollars in 1973 to an operating profit in 1976 and subsequently to remain profitable. Heyssel emphasised that this was despite appreciable new investment in new and old programmes. Furthermore, at Johns Hopkins the system achieved much enhanced clinical participation in planning and managing the services provided.

The most recent report in Britain was from University College Hospital, and Secker Walker has reported on the experience of having a budget for a department.¹⁶ He saw advantages in being able to plan a long term strategy for replacing equipment and also found that it was possible within the budget to save money in some areas in order to purchase a new item of equipment. Like others, he realised that the budget for staff was more difficult but not impossible to alter, and he had been able to forego an item of equipment so as to employ an extra locum.

There have been other clinical budgeting experiments in Sweden and France. Bally has described these,¹⁷ noting that in Sweden savings claimed to total 8.1% in the x ray department's budget were achieved in the first project in Ostergotlands Lans Lansting and 6.5% in the hospital's budget in Vastspär and that all those concerned remained enthusiastic supporters. In the hospital in St Germain-en-Laye the system was claimed to have contributed to greater efficiency, in particular by achieving a reduced hospital stay for patients. Bally again found that the doctors liked to be concerned in the budgeting process and no longer had fears about any threat to their clinical freedom. She concluded that if Sweden and France succeeded in getting the doctors to take part such cooperation should be possible in the NHS as well.

We are now conducting several clinical budgeting experiments in England. We have found a general willingness among medical staff to test out such systems and, though it is too soon to reach definite conclusions, there is already evidence that some changes have been selected by those taking part, which are a direct result of using negotiated service plans and budgets for clinical teams.

It is relevant that included in the various clinical budgeting experiments covered above have been examples of reductions in unnecessary x ray examinations and pathology tests, quicker treatment in outpatient clinics, more admissions per hospital bed, reductions in lengths of inpatient stay, reductions in ward stocks used by nurses, less food wastage, more productive use of staff and general facilities,

and the elimination of hospital financial deficits. Not all of these changes necessarily imply improvements and each case needs careful judgment. Even so, evidence is mounting that the active participation of doctors and others in a prospective, budget setting exercise is more likely to improve effectiveness and efficiency than is the dissemination of historic cost data.

Disadvantages of clinical costing

A difficulty facing those who are wondering whether to employ either of these financial techniques is that the reports are usually written by enthusiasts, and critics tend to raise objections that will not be proved or disproved until more time has elapsed.

Take as an example of this problem the key feature of many costing systems: an emphasis on norms. This is often criticised. Gillespie, for instance, feared that this could lead to fossilising medical procedures.¹⁸ He argued that working out norms and ranges for commonly performed procedures would lead to the narrowing of acceptable ranges and the discouragement of experimentation, "which is the very soul of medicine." This was also a feature that worried Bartlett *et al*,¹⁹ who saw the unfettered application of conclusions drawn from norms as likely to damage the Service. Some authors, however, disagree, and Magee⁶ sees the use of norms as a virtue, believing that an actual cost that is above the national average, after uncontrollable expenditure has been eliminated, may well show a low level of efficiency.

Magee's words are cautious, but he is not alone. Harper, a Scottish surgeon who studied the costs of different diagnostic groups in his unit, has suggested a relation between high costs and avoidable morbidity.²⁰ He believes that the avoidance of inpatient morbidity may be crucial in reducing the cost of disease and suggests that this concept has important implications for training and supervising junior staff. On a similar note Devlin²¹ has argued that lower costs may indicate better and not worse medical standards. He thinks that if clinicians realised the cost of treating an appendix abscess compared with an uncomplicated appendicectomy they would heed it. Devlin, himself a surgeon, urged his audience of treasurers that instead of allowing doctors to carp about administrative waste and obscene bureaucracy they should point out to surgeon A that his patients admitted for inguinal herniorrhaphy operation stayed in for 10 days compared with surgeon B's, whose patients stayed for 10 hours.

But it is apparent that the normative basis of costing still worries some commentators, despite the fact that for units with low costs the existence of norms could be seen as a safeguard or as justification for more resources. The great difficulty is in deciding a suitable measure of output, a problem besetting clinicians as well as planners, politicians, and epidemiologists. Substitutes selected with common sense have to serve. Whatever units of "output" are used they should be meaningful, their weaknesses should be understood, and in costing systems they need to be broadly suitable for comparisons with other similar services. In practice, exact parallels do not exist but broad comparisons may be made without too many problems.

The final difficulty that affects any costing system is the need to keep direct costs separate from others. Direct costs are those solely related to the particular "output." If these are used comparisons and any norms will be based on the relevant costs. An example to be avoided is when the apparently high costs of a cardiologist, say, are solely due to factors that he cannot himself much influence, such as sharing in the services of an expensive engineering department. Such global costings may be relevant when deciding where the cardiological service should be based, but otherwise could be misleading in the type of comparisons advocated by Devlin.

Clinical budgeting drawbacks

The disadvantages of clinical budgeting systems are unlike those affecting costing studies. The most obvious are the cost of running the system and the extra time that doctors must devote to it. The cost depends greatly on the availability of existing information, but we have found that a typical district needs at least two extra clerks. This was one feature criticised by Wood,²² who also feared that clinical budgeting might be used as an instrument for changes that could benefit inefficient staff or political favourites. Consultants, he said, are not likely to participate in economies that will downgrade their own

service while others are built up. Gibberd had similar worries about future cuts,¹³ though he generally favoured clinical budgets. Budgets can, of course, be constructed to achieve economies, to maintain the status quo, or to permit expansion; but at least they result in the clarification of what is happening, an advantage when governments are thought to be implementing cuts by stealth.

The amount of doctors' time consumed by clinical budgeting systems must be considered. At Westminster Hospital the clinical team budget review meetings, held every month or two, averaged 45 minutes. In Cumbria it was reported that the bimonthly meetings were not as time consuming as feared, each one lasting one hour.¹⁴ Heyssel claims that clinicians spend about the same amount of time on hospital affairs as before, but that they spend it more effectively.¹⁵ Astley and Secker Walker²³ have also drawn attention to the time taken, which, as they say, is not recompensed. Even so, they remain advocates of clinical budgeting.

With so many experiments in progress the broad differences between the main approaches must be understood. Clinical costing may be implemented with no active medical participation, and it lends itself to post hoc comparisons with norms or between broadly similar centres. Where costing has been associated with marked changes it has usually been accompanied by sustained educational programmes, or by audit or peer review committees. Evidence from costing studies may help the comparatively underfunded or economical unit, just as it may threaten the inefficient.

Clinical budgeting is prospective and depends on medical participation. Some medical time is consumed in operating the system, but there may be more freedom for clinical teams to redeploy resources at the margin. Some commentators have doubted whether this additional freedom will be sufficient to prove worth while,¹⁸ but it must be admitted that most of those with practical experience have come to be supporters.

At a time when all countries are having difficulties in maintaining existing spending levels on health care an improved capacity to review the relative priority of different spending options would be beneficial. Whether clinical costing alone contributes best to these reviews or whether more is gained when it is supplemented by budgeting is still not certain. But clinical budgeting provides an incentive for clinicians to use their skills in the review of what available opportunities exist, albeit at some cost to their time, whereas managing resources solely on a costing basis depends less on individual enthusiasm and participation but could result in greater standardisation of medical practices. At the present stage of development clinical budgeting seems to offer the greater benefits.

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New BMA provincial secretary

The BMA's finance and general purposes committee has appointed Mr Andrew Vallance-Owen as provincial medical secretary for all northern regions. Mr Vallance-Owen, who is a registrar in surgery in Newcastle upon Tyne, will take up his post on 28 February. He was deputy chairman of the Hospital Junior Staff Committee and served on its negotiating and executive subcommittees.

1983 public expenditure

Welcoming the government's public expenditure White Paper, the Secretary of State for Social Services, Mr Norman Fowler, said that the amount of expenditure that the government planned for the NHS in England in 1983-4 was £12 887m (gross). This showed, he claimed, a growth in NHS services overall since 1978-9 of 7.5%.

Total planned current spending by health authorities on the hospital and community health services in 1983-4 would be £8713m (gross). This represented an additional 1.2% growth or nearly £100m, subject to inflation and to each region increasing its efficiency by at least 0.5%. The money available for joint financing with local authorities would be £96m compared with £85m in 1982-3.

To provide for the continued growth in demand for family practitioner services the government was increasing the current provision from £2923m (gross) in 1983-4 to £3310m in 1985-6. Mr Fowler said that the government expected the cash provision for 1983-4 (£726m) to allow a capital programme some 12%, larger in real terms than in 1978-9.

Junior Members Forum 1983

Junior members of the BMA will be discussing the health problems of ethnic minorities at the Junior Members Forum this year. Specialists in the problems of ethnic minorities have been invited to the symposium, which will be held on the first day of the forum at the University of Sheffield on Saturday and Sunday, 26 and 27 March.

Speakers

- Mr Clifton Robinson, deputy chairman of the Commission for Racial Equality.
- Dr Carl Whitehouse, a general practitioner in Salford who also teaches at the department of general practice, University of Manchester.
- Ms Maggie Pearson, from the Centre for Ethnic Minorities Health Studies.
- Dr Philip Rack, a consultant psychiatrist from the transcultural psychiatry unit at Bradford.
- Dr Liam Donaldson, senior lecturer in epidemiology at the University of Leicester.

The second day of the forum is devoted to medicopolitics, and two representatives are elected to the annual representative meeting. Any resolutions that are passed are referred either to the various craft committees or to the annual representative meeting.

This year's chairman is Dr Michael Rees, who is also chairman of the Hospital Junior Staff Committee. The forum is open to members of the BMA who are under 40 or within 12 years of registration. Further details may be obtained from regional offices or from Mr R V Woods, BMA under secretary, at BMA House.

Business team to inquire into Health Service

The managing director of J Sainsbury, Mr Roy Griffiths, will head the four man team of senior businessmen to inquire into how the National Health Service is managed. The team will look at the effective use of manpower and related resources in the Health Service and is expected to report to Mr Norman Fowler by the end of June. The inquiry had two main purposes, Mr Fowler said in a parliamentary written answer on 3 February. The first was to examine the ways in which resources were used and controlled inside the

Health Service to secure the best value for money and the best possible services to the patient. The second was to identify what further management issues needed pursuing to achieve these aims.

The three other members of the team are Mr Michael Bett, board member for personnel at British Telecom; Mr Jim Blyth, group finance director of United Biscuits; and Sir Brian Bailey, chairman of Television South and of the Health Education Council.

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