Prescribing allocations: theory into practices

There are three main components to the management of the prescribing drugs bill, which is currently running at over £4 billion per annum in England. The first component involves the management of research allocation or, more properly, distribution from the NHS Executive to health authorities and then to practices. The second component, financial performance management, is essentially the FP10 expenditure against fundholder budgets and non-fundholder targets. The third is clinical performance management, which attempts to show whether the allocations are being spent appropriately.

Taken individually, the most important component, but sadly the most difficult to measure, is that of clinical performance. Current evidence-based medicine is said to account for less than 20% of prescribing treatments, and essential cost-effectiveness studies are undermined by the lack of available and appropriate data. It is therefore difficult to set any gold standards for prescribing performance. Even if these gold standards were available and agreed, the lack of routinely available diagnostic, demographic, and outcome data linked directly to the patient would render appropriate monitoring difficult.

Financial performance, as defined above, however, is easy to calculate given the current comprehensiveness of the Prescription Pricing Authority data on expenditure via the FP10 route. It is therefore widely used to define a health authority's or practice's performance, leading to overspend inferring 'bad' and underspend 'good'.

While proper financial management is essential, its ease of calculation has led to a skewed emphasis, undermining the urgent requirement for research into setting cost-effectiveness standards, together with collecting the appropriate data for monitoring clinical performance.

Given this situation, it is obvious why resource allocation methodology has assumed the importance that it has, leading to what Trevor Sheldon has described as 'formula fever',[1] and to the placing of demands on the accuracy of allocation formula that are impossible to achieve given that we have no valid measure of health care and of the ever-changing morbidity patterns, patient expectations, and innovations in pharmaceutical products. Appropriate prescribing resource allocation has also been given additional importance following the recent White Paper[2] which proposes cash-limited unified budgets to health authorities and primary care groups (PCGs) that include the prescribing element.

Further issues concern the principles on which resource allocation should be based. Among the principles adopted by the National Health Service (NHS) Executive are those proposing 'that resources should be allocated according to the relative need of the population' and that 'allocation policies must neither force change nor inhibit it'.[3] Although fundholder savings and incentive scheme payments from prescribing allocations slightly undermine these principles, they have shown that efficiency savings are obtainable within available resources, particularly through increased generic prescribing.[4] However, I would argue that these efficiency savings, and also the detection of undertreatment, are performance management issues, and that the above principles for resource allocation are sound. Prescribing allocations are made for the needs of the appropriate populations and should not be altered because of the prescribing performance of GPs, however measured, or be used as an instrument for behaviour change.

Four allocation methodologies can be identified, three of which will be described with reference to how prescribing allocations have been set from the centre to health authorities in recent years. The ideal approach would be to assess and forecast the health needs of each practice population, apply the latest costings for the most cost-effective treatments, produce budgetary requirements for each practice, and aggregate them to produce the drugs bill requirement. The Holy Grail, indeed![5] However, the resources required for such a venture would make it impractical; evidence-based medicine is only available in a limited number of clinical areas, and the pricing structure for pharmaceuticals underlying such a mechanism would have to be significantly different from what it is now. We therefore resort to the three top-down mechanisms.

The first mechanism is historic, whereby the out-turn of each health authority, and ultimately of each practice, is uplifted by a standard amount decided by the centre following negotiations with the Treasury. Until recent years, this methodology was the one used. However, this meant that high spending authorities received more resources with no reflection on population, need, or performance, either financial or clinical. This approach also perpetuates the variation in prescribing costs between health authorities, currently two-fold, ranging from £66 to £112 per head.[6]

The second mechanism is a weighted capitation approach, whereby an attempt is made to distribute resources on the basis of the needs of the populations served. The Prescribing Research Unit (PRU) was asked to produce a weighted capitation formula for distributing prescribing resources to health authorities, and ultimately practices, using universally available variables that had both face and statistical validity as measuring need. In order to adjust for demography, the Age/Sex Temporary Resident Originated Prescribing Unit (ASTRO-PU) was constructed.[7] Using data from a sample of practices, ratios were calculated for 18 age–sex groups based in the net ingredient cost (NIC) of prescribed drugs over a one-year period. For example, where males 0–4 count as one unit, females over 75 were counted as 12 units; i.e. on average they cost twelve times as much.

The PRU also calculated a figure of 0.5 for temporary residents, as the number of these patients vary considerably between health authorities and practices. These figures have recently been reviewed in order to reflect changing prescribing patterns.[8] The ASTRO-PU values statistically 'explain' around 17% of the variation in NIC per patient between health authorities. This may seem low but health authorities have relatively large populations and the demographic differences between them are not great. At the practice level, the equivalent figure is around 30%.

The next task was to find measures that reflected differences in morbidity and deprivation between health authorities that also statistically explained a large proportion of variation. The most important factor was a variable taken from the census, namely permanent sickness defined as 'the percentage of residents in households aged 16 and over who responded to question 13 of the 1991 census that they were unable to work last week due to long-term sickness or disability'. Other measures of morbidity and deprivation would have added little in terms of statistical power of the formula, given that they were highly correlated with permanent sickness. Moreover, we felt that creating a more complicated statistical formula would cloud the transparency of the process and also create a false impression of the accuracy of the formula when attempting to assess the health care need.

On the latest figures available (financial year 1996/97), demography, as measured by the ASTRO-PUs, and morbidity, as measured by the permanent sickness factor, account for around 70% of the variation in cost per patient between health authorities. A weighted capitation formula could be produced based on these two variables that would distribute all available prescribing monies.

A compromise solution between historic and formula distribution was agreed, whereby no health authority would receive less than its out-turn and that the growth money available from the centre was distributed on the basis of the formula. This supports my view that actual allocations should not be made totally on the basis of a weighted capitation formula given the lack of valid measures of health need, the constantly changing face of morbidity and medicine, and the need for local factors to be taken into account. This is especially true at the practice level where allocation formula development faces more problems. The broad-based measures of morbidity and deprivation at the geographical level of the health authorities are not available for the dispersed population of a practice, and accurate attribution has proved difficult.[9]

Although we can construct ASTRO-PUs for each practice in the country, research continues to search for an accurate health needs score at this level. Howie's paper attempts to provide a solution by grouping practices using their average cost per patient out-runs, and using cost per defined daily dose (DDD) in various therapeutic categories as allocation targets.[10]

This use of DDDs in any cost analysis is also problematic. Their use as volume measures is desirable and necessary because using the number of items prescribed has many problems.[11] They are produced by the World Health Organization as a unit of measurement and are an international compromise between countries that show widely varying drug use patterns, even for individual drugs. Their use as a cost comparator therefore infers a degree of accuracy that is not necessarily valid when combining together groups of drugs. The Prescribing Support Unit have produced an 'English DDD' to attempt to overcome some of these problems: it is called the average daily quantity (ADQ). However, we would still suggest that they are treated with a degree of caution in any cost analysis.

There is a considerable amount of research work ongoing into research allocation methodology, particularly at the practice and primary care group level, which will help inform the allocation process for the cash-limited unified budgets for 1999/2000. Whatever the requirements of the new NHS, it will be important to realize and state the limitations of all resource allocation methodologies that adopt, as they must, a 'broad brush' approach to population health needs.

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Accrediting research practices

General practice needs a firm research base, not only to define and to teach the discipline but also to provide evidence upon which to practise high quality clinical care. Following the lead of the RCGP in 1994, several regions have already funded research general practices.[1] and more have been funded nationally in the first round of Culyer awards.[2] These moves reflect the increased importance of primary health care, the increasing involvement of GPs in commissioning and purchasing care, and the need for relevant evidence upon which to base decisions.[3] Active primary care research organizations now include research practices, research networks, university departments and commercial organizations.

Although recent governments have intended that the proportion of NHS research money spent on primary care research should be doubled from its current low base,[4] the increase has yet to be realized and it will not all be allocated to general practice. The total will include monies allocated to non-medical workers and may include research on primary care by those outside of it. Funding bodies will have to make choices. We believe that accreditation of research practices would promote high standards and guide resource allocation. Practices may value a 'quality marker' as patients increasingly become more discerning in their choice of practice. It would help prospective students, GP registrars, health authorities and other organizations if they could identify practices with an established high quality research capability.

The integration of clinical practice, teaching and research is crucial to the development of the discipline.[1] Practices may strive to achieve an overall quality award such as the RCGP Scottish Council's Quality Practice Award,[5] Investors in People or the King's Fund organisational audit.[6] Alternatively, they might work towards more specialized accreditation in clinical practice, teaching or research. Partners who wish to concentrate on clinical care might choose Fellowship by assessment,[7] those who

wish to teach can become accredited training practices[8] or primary care education centres,[9] and those who wish to perform research can become accredited research practices.

What should be the criteria for accreditation as an established research practice? Most importantly, the practice should have clear aims. They should be committed to developing their research skills and achieving publishable results. To date, the RCGP and regions have used varied criteria when funding these practices.[10,11] Accredited research practices should have certain characteristics in terms of their structure, process, and research outcomes. In structural terms, partners should have research qualifications and training, there should be protected time and space in the practice for research, rigorous project and financial management systems, and a written research strategy with specific short and longer term objectives. There should be a commitment to high quality, multidisciplinary, ethical, and relevant projects. The practice should aim to obtain grants, publish scientific papers in peer-reviewed journals and advise bodies such as health authorities, ethics committees and grant committees. Some members of the team should aim to achieve masters level research degrees or doctorates.

'Novice' or 'beginner' research practices would need different criteria, as would those 'developing' practices in the transition between novice and established research practice. Practices who wish to become accredited might link with a research network, an established research practice or with a university department while they undertake the necessary training and structural changes to enable them to become an accredited research practice. Regional approval should be based upon a national framework, analogous to the national and regional approval mechanisms for GP vocational training practices.[8] Research networks would then include a mixture of accredited (established) research practices, those preparing for accreditation (developing practices), those beginning to perform research (novice practices), and linked practices who simply wish to contribute patients, ideas or advice to the network.

Networks would usually have either strong links to a university department (not necessarily a general practice one), or would have a core of one or a few established accredited research practices. As well as being similar to GP training practice accreditation, such a model might fit with MRC proposals[12] to fund approved research centres rather than specific projects.

Practices that wish to demonstrate to themselves and others that they are committed to high standards will have a choice of challenges. They might elect to achieve an overall practice quality award such as those devised by the Scottish RCGP or the King's Fund. They might also, or instead, choose specific clinical, teaching, or research accreditation. Through the integration of high quality practice based research, teaching and clinical care the ultimate beneficiaries should be the public, our patients.

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