TALKING POINT

RAWP—new injustice for old?

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Resource allocation to regional health authorities has been based on the recommendations of the Resource Allocation Working Party (RAWP) report¹ since 1977. The central concept of this report was that resources should be distributed in proportion to an objective measurement of each region's need. This principle has been generally accepted, though there has been much debate about the exact methods used to determine need and in particular about the report's use of standardised mortality ratios as a proxy for morbidity.² This paper accepts at face value RAWP's method of defining each region's relative need and, using this as the yardstick, examines the first five years' use of RAWP principles to see how successful that process has been in bringing about equity in revenue allocation.

Every year each region's "revenue target" is calculated. This represents the amount of revenue a region should receive if RAWP-determined need was the only criterion affecting revenue allocation. These revenue targets are obtained by dividing the total revenue available nationally in proportion to regional population figures that first have been weighted by several factors chosen to reflect relative need for different broad categories of health services, and have then been corrected to compensate for cross-boundary flows. Population remains the main determinant of target, however, and changes in targets that occur from year to year largely reflect population changes.

A region's allocation from the previous year, increased to reflect increases in pay and prices, forms its "start figure" in the annual RAWP calculations. Each region's start figure is compared to its revenue target calculated for that year, and the extra revenue available nationally is then allocated among the regions in proportion to the distances of their start figures from their targets to produce their final allocations.

Pattern of redistribution

The revenue allocations to regions for the financial years 1977-8 to 1981-2 are represented in figure 1. The actual allocations are expressed as a percentage of each region's revenue target for the year in question. The start figures as well as the final allocations are given for 1977-8, to give some idea of the redistribution produced in that year, while only the final allocations are used in subsequent years.

Clearly, there has been overall movement of allocations towards targets. The most deprived region was 12.6% short of its target allocation in 1977-8 and this has decreased to 6.3% for 1981-2, with North Western and Trent exchanging places but remaining the two most deprived regions in RAWP terms. At the other end of the scale North-west Thames continues to receive the greatest excess allocation, though this has reduced from 17% to 14%. The gap between the region most above target and the region most below target has narrowed by one-third.

Within this overall movement there is great variation in rates of progress towards targets. Of the regions whose allocations were initially above their targets ("overprovided"), Oxford and

FIG 1—Regional revenue allocations expressed as percentage of their RAWP targets 1977-8 to 1981-2.

South-west Thames both started 6% to 7% up, but whereas Oxford has reduced to target South-west Thames remains at that level. The other Thames regions are reducing at differing rates but are all still a lot further above target than any region is below. Of the regions whose allocations were initially below target ("underprovided"), Mersey has moved steadily on to target, whereas East Anglia and the South West have made little progress after the first year.

The extent of these variations can be shown by calculating the number of years required for each region to reach its target if present trends are maintained. Table I shows the results of a simple linear projection of the change in final allocations that has occurred between 1977-8 and 1981-2. While this is clearly an oversimplification, it overestimates rather than underestimates the pace of change; extrapolation of only the last two years yields much longer periods of time.

If the RAWP definition of equity is accepted and revenue targets regarded as a fair measure of need the results of table I and figure 1 are disturbing. While RAWP has succeeded in part in redressing some of the initial inequitable distribution of resources, it seems to have created a new type of unfairness over the different speeds with which regions are being moved towards target. Why, if we are pursuing equity, is it right for East Anglia to have to make do with 95% of its needs for the foreseeable future? Why are Mersey and West Midlands, both of which are being brought rapidly up to target, more deserving than Yorkshire and the South West, whose progress is slow? Why is South-west Thames left 6% overprovided while Oxford has been rapidly reduced?

The explanation lies in the way that different regions' targets

have changed from year to year. Convergence of allocations and targets will be promoted in overprovided regions by a rise in target and in underprovided regions by a fall. Conversely, a fall in overprovided regions and a rise in target in underprovided regions will delay this convergence. Changes in regional revenue targets between 1977-8 and 1981-2 have been calculated in table II. The targets in each year have been expressed as percentages

TABLE I—Pace of movement of revenue allocations towards targets

Region	No of years for revenue allocation to reach target ($\pm 0.5\%$)
Trent	13
North Western .. .	10
East Anglia .. .	>500
Northern .. .	9
South Western .. .	94
Wessex .. .	16
West Midlands .. .	11
Yorkshire .. .	23
Oxford .. .	3
Mersey .. .	4
South-west Thames .. .	41
North-east Thames .. .	10
South-east Thames .. .	13
North-west Thames .. .	20

of the total national revenue for that year, while the difference for each region between 1977-8 and 1981-2 has been expressed as a percentage of its 1977-8 target.

The picture is varied. While half the regions have changed by 0.5% or less, at the extremes Oxford's target in 1981-2 is 7% greater than that in 1977-8 while Mersey's is nearly 4% less. The variations seen in figure 1 and table I now start to become clearer. Of the five initially overprovided regions, Oxford and North-east Thames, have growing targets and are the regions that have reduced most rapidly, while South-west

TABLE II—Change in regional revenue targets 1977-8 to 1981-2

Region	Revenue target* 1977-8 (%)	Revenue target* 1981-2 (%)	% change†
Trent	9.23	9.22	-0.02
North Western	9.66	9.62	-0.46
East Anglia	3.77	3.88	+2.77
Northern	7.02	6.94	-1.04
South Western	6.68	6.75	+1.03
Wessex	5.51	5.50	-0.07
West Midlands	10.68	10.70	+0.14
Yorkshire	7.65	7.68	+0.34
Oxford	3.98	4.26	+6.98
Mersey	5.72	5.50	-3.85
South-west Thames	6.75	6.57	-2.59
North-east Thames	8.17	8.26	+1.12
South-east Thames	7.91	7.89	-0.36
North-west Thames	7.27	7.23	-0.52
Total	100	100	

* Regional revenue targets are expressed as a percentage of the national revenue total.
† The difference between 1977-8 and 1981-2 targets expressed as a percentage of the 1977-8 target.

Thames with its target fall of 2.6% has experienced negligible shift. Of the initially underprovided regions, Mersey and Northern have falling targets and have therefore moved rapidly towards them. On the other hand, East Anglia's target increase of 2.8% seems to have effectively prevented any movement towards it, while the South West and to a less extent Yorkshire are also hindered by their target rises.

The overall picture is summarised in table III, which highlights the clear connection between changes in regional revenue targets and the pace of convergence of allocation with target. This pattern of resource allocation that penalises regions with rising targets and protects those with falling ones is difficult to defend logically and seems to have arisen by chance rather than design. The RAWP report makes no mention of differential

changes in different regions' targets. Targets are calculated each year as at one point in time with no consideration of trends. This can mean that any movement towards target achieved by the application of the RAWP formula at the beginning of a financial year can be eliminated during the course of that year by movement in target. This is well illustrated by East Anglia and Oxford. Figure 2 shows their start figures for the RAWP calculations and their final allocations for each year expressed as a percentage of target. For East Anglia the effect of each year's RAWP adjustment is to move the allocation anything from $\frac{1}{2}\%$ to 2% nearer the target. By the time the next year comes around, however, the region has slipped back to its previous level of underprovision

FIG 2—Start figures and final allocations for Oxford and East Anglia RHAs expressed as percentage of target allocations.

because its target has risen and no overall progress towards target has been made over five years.

The position so far as Oxford is concerned is even more bizarre. Starting in 1977-8 nearly 7% over target, it rapidly moved towards a target that increased 5½% over the first two years, and in the 1979-80 calculations was adjusted from a below-target start figure to an above-target final allocation. Another 1½% growth in target has occurred since then, which is more than the annual readjustments can compensate for, leaving the region more than 1% below target for 1981-2. The effects of the actual RAWP readjustments each year have been to exacerbate its overprovision in the first two years and to fail to correct its underprovision in the last two. On present trends it is likely that at least one more year's fall will be necessary before the distance below target of the region's start figure is great enough to generate sufficient extra allocation to balance rises in target and produce a static condition similar to that of East Anglia. There is an overwhelming impression as regards both the Oxford and

TABLE III—Relation between change in target and movement towards target

	Change in target (from table II)		Time to reach target (from table I)	
	%	Rank	No of years	Rank
Above-target regions:				
Oxford	+6.98	1	3	1
North-east Thames	+1.12	2	10	2
South-east Thames	-0.36	3	13	3
North-west Thames	-0.52	4	20	4
South-west Thames	-2.59	5	41	5
Below-target regions:				
Mersey	-3.85	1	4	1
Northern	-1.04	2	9	2
North Western	-0.46	3	10	3
Wessex	-0.07	4	16	6
Trent	-0.02	5	13	5
West Midlands	+0.14	6	11	4
Yorkshire	+0.34	7	23	7
South Western	+1.03	8	94	8
East Anglia	+2.77	9	500	9

East Anglia RHAs that the mechanics of the RAWP formula have completely obscured the reason for its existence—namely, to bring regions to their need-determined targets.

Floors and ceilings

The effects of this inherent problem in the RAWP mechanism have been particularly marked because while successive governments claim to have accepted RAWP principles they have not followed the redistribution strategies recommended. The RAWP report recognised that it would not be possible to change suddenly from historic patterns of resource allocation to those of its need-determined targets. Pace of change would be limited both by the losing regions' ability to make economies and by the gaining regions' capacity to spend usefully large amounts of extra money. The basic recommendation that "changes in the amount of revenue money allocated to RHAs should be in proportion to their distance from target" was to be subject to constraints that limited the rate of change for the regions furthest from target. The RAWP report proposed a variety of "practical options" for reallocation, depending on the amount of change in the overall resources available to the NHS (table IV).

TABLE IV—Redistribution strategies recommended in RAWP report

National growth rate	Above-target RHAs	Below-target RHAs
Above 1%	Differential reductions in allocations Standstill Differential growth if available resources exceed that which can be allocated to below-target regions under the ceiling rule	Differential growth
1%	Differential reductions in allocations Standstill	Differential growth
Zero	Differential reductions in allocations Standstill	Standstill Differential growth if allocations to above-target regions are reduced
Negative	Differential reductions in allocations	Differential reductions in allocations Standstill Limited differential growth

In discussing these options the report was mainly concerned with whether standstill or differential reductions should be applied to above-target regions. The main arguments centred on how much reduction was appropriate. Differential growth to these regions was considered only in conditions of high growth rates, where available resources exceeded what could be allocated to below-target regions under the "ceilings" rule. So far as redistribution to below-target regions was concerned, a maximum growth of 5% was recommended. The actual floors and ceilings chosen each year have been rather different from these recommendations (table V).

Thus even when overall growth was less than 0.5%, above-target regions received some growth money: there has never been standstill, let alone differential reduction. Similarly, no below-target region has ever received the 5% growth recommended as the maximum. These conservative policies over floors and ceilings have limited the overall redistribution between regions and in doing so have increased the relative effects of changes in targets on redistribution. Thus in the extreme case of the East Anglia RHA the fundamental principle of moving allocation towards a need-determined target has been completely thwarted.

Conclusions

The basic principle of RAWP, that of allocating resources in proportion to need, is difficult to fault. While there has been

much debate about the way in which RAWP quantified need, this has distracted attention from the inconsistencies that have arisen in its application. Some progress has clearly been made in adjusting regions' allocations towards their targets, and the range of inequality of provision has been narrowed. This process, however, could have been faster with more radical policies over floors and ceilings, and it is easy to conclude that the quest for equity has succumbed to some extent to political expediency.

More unexpectedly, the application of the formula with apparent insufficient regard for its overall effects has produced a new type of injustice over resource allocation. Regions with rising targets fare badly in comparison with those with static ones, while those with falling targets do disproportionately well.

TABLE V—Growth in NHS resources with RAWP floors and ceilings for each financial year

Year	Overall growth of NHS resources (%)	Floor (%)	Ceiling (%)
1977-8	1.39	0.25	3.19
1978-9	1.41	0.25	2.8
1979-80	2.0	1.0	3.0
1980-1	0.48	0.3	0.6
1981-2	1.61	0.5	3.0

It is impossible to justify this either logically or within RAWP's terms of reference, which included a requirement that resource allocation should be "responsive . . . efficiently," and a modification in the mechanics of applying the RAWP formula is clearly needed to deal with this unforeseen consequence.

Several approaches are possible, and without access to the full RAWP computer model it is impossible to measure their impact. A simple solution that would avoid any need to predict or extrapolate changes in target would be to insert an extra stage in the annual RAWP calculations after the start figures and targets have been determined. In this stage each initial start figure would be adjusted so that the ratio of start figure to target allocation would be equal to the ratio of final allocation to target allocation of the previous year. Distribution of remaining growth money would then take place as at present with appropriate ceilings and floors. This would have two important effects. Each region would start each annual step towards target from the same relative place as it had arrived at the previous year—there would be no slipping because of target changes. In addition, regions that reached their target would stay there, with no risk of overshooting, as in Oxford's case.

The RAWP report is a good example of British pragmatism incorporating into its quest for equity a mechanism for responding to special pleading (in the floors and ceilings rule). Its proposals have been successful in producing a redistribution of resources and they should be continued. Attention must now be given, however, to the need for two-dimensional equity, so that while above-target and below-target regions are being brought together rising and falling target regions should be treated with equal justice.

All figures have been taken from the annual DHSS letters to regional health authorities detailing the calculation of their revenue allocations.

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