

National and Regional Resource Allocation Frameworks and Funding Availability for Acute Sector Health Services at Bristol

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The research on which this report is based was funded by the Bristol Royal Infirmary Inquiry. All views expressed in the report are the responsibility of the author alone, and do not necessarily represent the views of the Bristol Royal Infirmary Inquiry.

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November 2000

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Brief for the Inquiry period: 1984 to 1995*

- (a) Give an overview of the processes used to allocate resources from the centre to determine incomes of acute hospitals in 1983-84 and main changes in these processes to 1995-96.
- (b) Outline the main elements that drove national policies for funding Regional Health Authorities (RHAs): for supra regional services, undergraduate medical and dental students, and the main service allocations made with reference to capitation targets (based on the RAWP formula and subsequent modifications).
- (c) Outline the major aims and objectives underlying national policies for the main elements of funding regional health authorities.
- (d) Comment on the strengths and weaknesses of the main elements that drove national policies in terms of their major aims and objectives, and their sensitivity to key variables such as population health needs (including “social deprivation”) and cross-patient boundary flows.
- (e) Describe the impact and consequences of the main elements of national funding of South Western RHA, relative to other English RHAs.
- (f) Outline the processes and formulae used by South Western RHA to distribute resources between its constituent health authorities, and the sensitivity of the formulae to key variables.
- (g) Comment on the strengths and weaknesses of the processes used by South Western RHA for revenue, capital and development funding in respect of the policy objectives that they were intended to achieve.
- (h) Describe the practical impact and consequences of South Western RHA’s resource allocation arrangements on availability and access to funds by the Bristol and Weston Health Authority and the Avon Health Authority, relative to other constituent health authorities.
- (i) Consider the impact of the introduction of the NHS internal market on resource allocation and price determination, including the availability of information on national average unit costs of acute sector health services.

* To cover resource allocation over the Inquiry period it is necessary to cover the financial years 1983-84 to 1995-96.

Summary

1. This report on National and Regional Resource Allocation Frameworks and Funding Availability for Acute Sector Health Services at Bristol has been prepared at the request of the Inquiry into the management of care of children receiving complex heart surgery at the Bristol Royal Infirmary (BRI). It constitutes expert evidence to the Inquiry. Its aim is to inform the Inquiry's understanding of the national and regional resource allocation frameworks impacting on the availability of mainstream funding of acute sector health services at Bristol, with specific reference to the period 1984 to 1995. This report gives personal overviews of the processes of resource allocation and their objectives, and factual analysis based on material in the public domain (including published policy and research and selected written and oral evidence submitted to the Inquiry).
2. Throughout the Inquiry period, revenue and capital resources for Hospital and Community Health Services (HCHS) were allocated to Regional Health Authorities (RHAs) and District Health Authorities (DHAs) with the objective of achieving a more equitable distribution. The methods used for the main service allocations of revenue and capital estimate Authorities' fair shares in the form of targets (and the existing distribution of capital stock). The core of an Authority's target is the size of its population weighted for age and sex, and estimated additional needs. Prior to the introduction of the internal market, adjustments were made to revenue targets (but not capital targets) for cross-boundary flows. After 1990-91, however, in preparation for the internal market, targets were no longer adjusted for cross-boundary flows. In national allocations, adjustments were also made to targets for the estimated higher costs of employing staff in London (and from 1995-96, for differences in labour costs throughout England -- known as adjustments for market forces). National and Regional policies were to move each authority's main service revenue allocation towards its target, and distribute capital using capital targets and measures of existing stock, at a

manageable pace of change. (The introduction of capital charges, from 1991-92, appears to be largely irrelevant to resource allocation during the Inquiry period.)*

3. Some revenue funds were “top sliced” from the total available for HCHS and allocated on a different basis from the main service allocation. Two top-sliced funds were significant for acute services in Bristol. First, the medical and dental service increment for teaching (SIFT) (medical SIFT was later retitled the service increment for teaching and research -- SIFTR). These sums were allocated on numbers of clinical students at a rate per student; and accounted for about 8% of the total revenue cash limit of Bristol and Weston DHA (1988-89). Second, supra-regional services, which were funded at agreed volumes at agreed costs, and, at their peak (1985-86) accounted for nearly 2% of total revenue funding of acute services in the DHA. These sums are less significant for the RHA: in total they accounted for less than 2% of its total revenue allocation (from 1983-84 to 1991-92)[†].
4. Prior to 1990-91, authorities set budgets for their own hospitals[‡]. South Western RHA anticipated the introduction of the internal market, so that from 1990-91, Bristol’s hospitals instead of having one source of income (from Avon and Weston DHA) was paid by all authorities that sent patients to these hospitals. This continued with the internal market from 1991-92, with GP fundholders becoming new purchasers. In the internal market, there were few opportunities for hospitals to earn extra income by doing more work[§], and the system of costing and pricing did not accurately reflect resources consumed, nor enabled valid price comparisons to be made between providers^{**}.
5. Between 1983-84 and 1989-90 the Department’s policies for Hospital and Community Health Services (HCHS) were essentially based on the

* See Boxes 1 and 4 for outlines; and discussions of Main revenue allocations, and Main capital allocations and capital charges, in sections (a) and (b).

[†] See Boxes 2 and 3 for outlines; and discussions of SIFT and SIFTR, and Supra-regional services in sections (a), (b) and (c). For information on their magnitude see discussion of South Western RHA in section (e) and Bristol and Weston DHA in section (h).

[‡] Section (a): Determining incomes of acute hospitals.

[§] Section (i): Resource allocation.

^{**} Section (i): Price determination.

recommendations of the 1976 *Report of the Resource Allocation Working Party* (RAWP). Modifications were made to RAWP methods following reviews published in 1980, 1988 and 1994^{*}. These reviews considered the most controversial element in the capitation formula: the weighting of populations for need additional to age (and sex). This problem is one that is essentially contested and cannot be resolved. Indeed it is difficult even to know whether the various changes in weighting for these additional needs are improvements on those recommended by the RAWP Report[†]. The policy of funding supra-regional services was developed outside national policies for resource allocation[‡].

6. Regional targets were robust to estimates of cross-boundary flows[§]. South Western RHA appears to have essentially applied the successive national formulae in weighting populations in seeking a more equitable distribution of revenue and capital between its DHAs. The RHA's main concern, in setting DHA targets, seems to have been improving estimates of costs in accounting for cross-boundary flows, and these resulted in various changes that altered DHAs' targets^{**}.
7. Dental SIFT reflects, and is directed at covering, the service costs of teaching clinical dental undergraduates. In contrast, it is unlikely that the service costs of teaching medical students equalled the medical SIFT monies allocated, or that these monies were directed at costs of teaching. The actual function of medical SIFT (and SIFTR) was to fund the higher costs of teaching hospitals^{††}.
8. The policy of funding supra regional services was at variance with achieving equitable funding. Its justification was that concentration in a few centres would achieve high standards of diagnosis and treatment: as established centres had lower than average mortality^{‡‡}. South Western RHA's policy of funding recognised regional specialties was to fund initial developments for three years,

^{*} See Box 4 and Section (b): Main revenue allocations, and Main capital allocations and capital charges.

[†] Section (d): Main revenue allocations.

[‡] Section (b): Supra-regional services.

[§] Section (d): Main revenue allocations: Accounting for cross-boundary flows.

^{**} Section (f).

^{††} Section (d): SIFT and SIFTR.

^{‡‡} Section (d): Supra-regional services.

after which time they would be financed from Districts in proportion to use made of these services. This policy was directed at equitable funding*.

9. The estimates reported here of changes in “real” terms use the deflator based on movements of pay and prices of staff and consumables in HCHS. Total revenue expenditure on HCHS for England was at a standstill between 1984 and 1988, followed by real growth each year after 1989[†]. The main revenue allocation (in “real” terms) for South Western RHA for 1988-89 was marginally lower than for 1984-85. After that there was “real” growth each year (excluding 1989-90 and 1990-91, which are not really comparable)[‡]. The total revenue funding (including SIFT / SIFTR and protection for supra-regional services and regional services) of Bristol and Weston DHA, reduced by about 5% for 1985-86, followed by three years of no change. The DHA began to experience real growth from 1989-90[§]. Acute services in Bristol, and at other centres providing Neonatal and Infant Cardiac Surgery, are likely to have been subject to similar financial pressures to Bristol and Weston DHA in the 1980s^{**}.

* Section (g).

† Section (e): England.

‡ Section (e): South Western RHA.

§ Section (h): Bristol and Weston DHA.

** Section (h): Acute services in Bristol.

Introduction

1. This report on National and Regional Resource Allocation Frameworks and Funding Availability for Acute Sector Health Services at Bristol has been prepared at the request of the Inquiry into the management of care of children receiving complex heart surgery at the Bristol Royal Infirmary (BRI). It constitutes expert evidence to the Inquiry. Its general aim is to inform the Inquiry's understanding of the national and regional resource allocation frameworks impacting on the availability of mainstream funding of acute sector health services at Bristol, with specific reference to the period 1984 to 1995. It discusses strengths and weaknesses of national and regional resource allocation arrangements during this period, including sensitivity to key variables, their impacts on geographical equity, and on the nature and level of funding available for acute sector health services at Bristol. This commentary is intended to help the Inquiry appreciate the wider normative context within which funding of acute sector health services at Bristol was made available.

2. I was asked in preparing this report both to use my expertise in giving personal overviews of the processes of resource allocation and their objectives, and factual analysis based on material in the public domain (including published policy and research and selected written and oral evidence submitted to the Inquiry). In each subsection that follows, I indicate its nature.

3. The Inquiry's evidence relevant to this report has been selected and assembled for me by the Inquiry's legal team and Secretariat, and I am very grateful to them for all their work; and to the Secretariat for comments on earlier drafts. I am also very grateful to librarians in the Department of Health for supplying additional material. This evidence includes the following annual publications:
 - official *Cash Limits Exposition Booklets* [DOH 0011 0001 to 0509] for each financial year* .

* Except for 1993-94; the booklets for 1994-95 and 1995-96 were borrowed from the library at the Department of Health.

- South Western RHA's *Regional Allocations for 1983-84* (and 1984-85, 1985-86, and 1986-87) and *Financial Allocations and Policies* (1988 edition) for 1988-89*.
 - *Bristol and Weston Health Authority Budgets* from 1987-88 to 1990-91 [UBHT 0339 0001 to 1031].
 - *United Bristol Healthcare NHS Trust (UBHT) Budgets* from 1991-92 to 1994-95 [UBHT 0338 0001 to 409].
4. I have used additional evidence submitted by the Department of Health [WIT 0482 0213 to 0234, and 345 to 362]; read the evidence submitted by Mr Graham Nix [WIT 0106 001 to 0189] and transcripts of his oral evidence [Transcript days 22 and 23].
 5. Accounts of allocations by South Western RHA and budgetary allocations by Bristol and Weston Health Authority lack the detail of the official *Cash Limits Exposition Booklets*. Hence commentary on these processes is less systematic than on the national formula. Furthermore, because of various changes in organisation and methods of finance, it is difficult to compare funding levels before and after the introduction of the NHS internal market.
 6. My expertise in NHS resource allocation has been gained through various projects and membership of advisory groups. I have been a member of research teams that reported on: the Management of Financial Resources in the National Health Service for the Royal Commission on the NHS, in 1978¹; a study of the medical service increment for teaching (SIFT) for the Department of Health and Social Security (DHSS), in 1982²; a review of the literature on resource allocation for DHSS, in 1986³; various studies of problems of subregional resource allocation⁴; and of setting budgets organised around general practices⁵, including the recent study of total purchasing⁶. I have been a member of the Resource Allocation Working Group of the Welsh Office (1987 to 1991); the Medical Practices Committee of England and Wales (1993 to 1994); and the Technical Advisory Group on Resource Allocation of the Department of Health (since 1997).

* There are no regional papers on the period from 1989-90 to 1995-96.

7. This Report is organised under headings to cover each item of the brief with a concluding section (and the last pages is a guide to common acronyms):
- Overview of processes used to allocate resources from the centre to determine incomes of acute hospitals;
 - Main elements in national formulae for capitation and teaching and research;
 - Policy aims and objectives of national formulae for funding RHAs;
 - Strengths and weaknesses of national policies;
 - The impact and consequences of national funding;
 - The resource allocation formulae and processes used by South Western RHA;
 - Strengths and weaknesses of South Western RHA's processes;
 - Impact and consequences of South Western RHA's resource allocation policy;
 - Impact of NHS reforms on resource allocation and price determination; and
 - Conclusions

(a) Overview of processes used to allocate resources from the centre to determine incomes of acute hospitals*

Sources and structure

8. The objective of this section is to give an overview of processes used to allocate resources from the centre to determine incomes of acute hospitals. This is based mainly on official reports into resource allocation and research. It aims to set the context -- details of these processes based on evidence submitted to the Inquiry are given in the following sections (b and e).
9. Since 1977, the allocation of resources for Hospital and Community Health Services (HCHS) to health authorities have been based on methods recommended by the 1976 *Report of the Resource Allocation working Party* (The RAWP Report)⁷. This introduced the concepts and methods of:

* The brief is to: Give an overview of the processes used to allocate resources from the centre to determine incomes of acute hospitals in 1983-84 and main changes in these processes to 1995-96.

- setting health authority *targets* for revenue based on the estimated relative needs of their populations;
- setting health authority *targets* for capital, based on the estimated relative needs of their populations, and estimates of the value of capital stock;
- setting the *pace of change* of moving health authority allocations to targets subject to *ceilings* and *floors* on gains and losses;
- estimating the *service increment for teaching (SIFT)* rates per student for clinical medical and dental undergraduates; and
- extra allowances for higher costs of employment (London Weighting).

10. RAWP methods were reviewed by the Advisory Group on Resource Allocation. Following its 1980 Report (the AGRA Report)⁸, the Department made three main changes:

- developed a much sounder way of estimating service costs of clinical teaching of dental students for dental SIFT;
- introduced provision for the higher costs of multi-regional services; and
- introduced an extra allowance for the higher costs of employing staff in London (an adjustment for market forces in addition to London Weighting).

11. RAWP methods were again reviewed by the NHS Management Board. Following its 1988 Report (the RoR Report)⁹, the Department made three main changes:

- replaced the medical service increment for teaching (SIFT) with the service increment for teaching and research (SIFTR);
- revised the “real” rate per student for dental SIFT; and
- changed the method of weighting populations in revenue and capital targets.

12. The introduction of the internal market in 1991¹⁰ separated purchasers from providers and changed the structure of targets and the funding of hospitals.

13. The methods used by research for the RoR Report were reviewed in a study by the University of York¹¹, which was published in 1994. Based on this research, the method of changed the method of weighting populations in revenue and capital targets was changed for 1995-96.

14. Box 1 indicates the sequence of important policy developments in the allocation of resources giving the publication and the proposal associated with each.

Box 1: Outline of main policy developments in resource allocation

<i>Official Source</i>	<i>Weighting population</i>	<i>Cross-boundary flows</i>	<i>SIFT</i>
<i>RAWP Report</i> ¹² (1976)	By service components mainly: age, sex, all-age SMR with weight of one.	At estimated average specialty costs.	Medical rate at 75% median excess costs per student. Dental rate at 25% of medical rate.
<i>AGRA Report</i> ¹³ (1980)	As RAWP.	As RAWP but costs estimated for high-cost multi-regional services*.	RAWP method for medical, with more recent data. Dental rate based on costs of outpatients.
<i>Review of RAWP</i> ¹⁴ (1988)	Recommended [†] : age, under-75 SMR with weight of 0.44, & Jarman index.	As RAWP	Modified RAWP method for medical (rate at 100% median excess costs per student). AGRA method for dental, with more recent data.
<i>Working for Patients</i> ¹⁵ (1989)	Age, under-75 SMR with weight of 0.5.	No adjustment for cross-boundary flows.	
<i>York study</i> ¹⁶ (1994)	Age weighting revised, & two indices for acute non-psychiatric and psychiatric services (SMRs and census data).		

* But from 1984-85 this was replaced by a new policy of funding supra-regional services for agreed volumes at agreed costs.

† But implemented differently as in *Working for Patients*.

15. For 1983-84, the central body responsible for allocating resources for Hospital and Community Health Services (HCHS) was the Department of Health and Social Security. For 1989-90, this changed to the Department of Health. There were also various changes to the body directly responsible for the NHS within these Departments. These include the Health Services Supervisory Board (briefly) and the NHS Management Board. These were succeeded by the NHS Policy Board and NHS Management Executive (which was renamed the NHS Executive)¹⁷. For simplicity, the central body making allocations will be described as the Department in the rest of this paper.
16. Throughout the Inquiry period, the Department made allocations to Regional Health Authorities (RHAs). In 1983-84, there were 14 RHAs. These were reduced to eight for 1995-96 (with the South Western RHA becoming the South and West RHA) and RHAs were abolished in April 1996 (and replaced by regional offices)¹⁸.
17. The structure of this section, and the following sections on the national formula, essentially follows that of the Cash Limits Exposition Booklets, which describe revenue and capital allocations. The exposition of revenue allocations begins with funds that are “top sliced”, of which the most important for our purposes are SIFT (and SIFTR) and supra-regional services (from 1984-85). These monies are deducted from the total revenue available for HCHS in England to form the main revenue allocation*. There is then discussion of how the main revenue and capital allocations[†] are distributed to RHAs with reference to targets derived by various capitation formulae. Thus these sections are organised with subsections on:
- SIFT (and SIFTR),
 - supra-regional services,
 - main revenue allocations, and
 - main capital allocations and capital charges.

* There are also many other minor adjustments, see section (b).

† These are the main elements of capital and revenue and exclude sums for SIFT (and SIFTR) and supra-regional services, joint finance and other various special allocations.

18. This section concludes with observations on the processes of subregional allocations by RHAs to District Health Authorities (DHAs); and the ways in which DHAs determined incomes of acute hospitals before and after the introduction of the internal market.

SIFT (and SIFTR)

19. Throughout the Inquiry period the Department allocated large sums of SIFT / SIFTR to RHAs based on numbers of clinical medical and dental undergraduates (and these were additional to medical schools' income for teaching medical students and research). The medical SIFT/SIFTR rate per student was about £50,000 (at current prices)*. So, in 1984-85, Bristol Medical School, which then had nearly 200 clinical medical students, would have generated £10m (at current prices) for Bristol's teaching hospitals.

Supra-regional services

20. The AGRA Report introduced provision for the higher costs of four multi-regional services in accounting for cross-boundary flows in regional targets†. In 1984-85, a new policy was introduced for funding supra-regional services at agreed costs and volumes.

Main revenue allocations

21. For 1983-84, the Department allocated the main revenue and capital allocations to 14 Regional Health Authorities (RHAs) using methods based on the recommendations of the RAWP Report.

22. For each RHA the Department derived *target* allocations for revenue: its estimated fair share of the total for England. This based on its *catchment* population: the numbers and estimated relative needs of its resident population, with adjustments

* There was little change in the rate per student allocated when SIFT changed to SIFTR.

† spinal injuries, paediatric haemodialysis, management of chorioncarcinoma, and services provided by the national poisons unit.

for cross-boundary flows. For the Thames RHAs there were allowances for the higher staffing costs in London*.

23. The Department's policy was, over time, to move each RHA's main revenue allocation towards its target, at a manageable pace of change (to avoid extra resources being squandered, and disruption to services from having to make reductions too quickly). "Ceilings" and "floors" were set on rates of change in allocations to each RHA dependent on the growth monies available each year. RHAs were ranked according to how their actual allocations compared with their targets. There was an important distinction between "above-target" RHAs and "below-target" RHAs (with revenue spend higher and lower than their targets). The Department's policy was broadly one of "levelling up": to direct growth money at "below-target" RHAs, which meant that "above-target" RHAs received little or no growth money. For a "below-target" RHA, the greater the distance of its allocation from its target, the greater would be the share of "growth" money allocated to that RHA[†].
24. From 1990-91, the weighting of populations was changed based on analysis for the RoR Report¹⁹; and from 1995-96, the weighting of populations was changed again, based on analysis by the University of York²⁰.
25. The introduction of the "internal market" from 1991 changed the structure of capitation formulae for revenue allocations so that these applied to *resident* (not *catchment*) populations; and allocations were complicated by the requirement to fund the introduction of capital charges.

Main capital allocations and capital charges

26. Between 1983-84 and 1990-91, capital was allocated on the basis of three criteria: the population target share; a capital stock equalisation element; and "ceilings"

* And also for part of Oxford RHA.

[†] And because of the system of cash planning, which did not fully fund pay awards, there might be no "real" growth (i.e. taking account of inflation).

and “floors” on rates of change. The population target share was essentially derived in the same way as the revenue target*. The capital stock equalisation element compared for each RHA, its actual distribution of existing stock with its “notional” (or target) stock†.

27. The introduction of the internal market in 1991-92 had no impact on the methods used to determine capital allocations‡; but created a system of capital charges, (depreciation, and interest charges). The weighting of populations followed changes in methods for revenue.

Subregional allocations

28. Each RHA, in making main revenue allocations to its District Health Authorities (DHAs) followed the Department, using its own capitation formula for revenue, and moving DHAs’ actual allocations towards their targets. But, where there were significant inequities in revenue funding, RHAs did not follow a policy of “levelling up”, as this would have entailed an unacceptably slow pace of change towards revenue equalisation. Thus some RHAs redistributed revenue by imposing revenue reductions on above-target DHAs to generate extra revenue for below-target DHAs. South Western RHA decided capital allocations to DHAs using a capitation formula and estimates of the distribution of capital stock§.

Determining incomes of acute hospitals

29. The methods of allocating resources to HCHS were designed to contain costs (by cash limits) and to achieve greater equity in spend per capita on health care between populations (by RAWP methods). It logically follows from this design

* From 1985-86, for revenue, populations were estimated for the year of allocation; for capital population estimates were projected five years on; and there was no adjustment for cross-boundary flows for capital targets.

† Following a review in 1983, the capital stock equalisation element was phased out so that capital allocations were eventually distributed on the basis of weighted population only.

‡ as these were always based on resident populations, no structural change was required as for the revenue method.

§ Not all RHAs, however, used a formula for making major capital allocations because of problems in valuing capital stock. In addition to allocations based on capitation formulae, RHAs often funded directly regional specialties; and revenue costs of running new capital schemes and new consultant appointments (rather than by a formula because they required significant increases in revenue).

that DHA allocations were unrelated to the work done by their hospitals: i.e. there was no extra income for treating more cases.

30. Consider the position for (say) the Bristol Royal Infirmary (BRI) which developed a new service which began at the start of the 1984-85 financial year. The method of resource allocation took account of patients from other districts in adjusting *targets* with a two-year lag. So, if Bristol and Weston's allocation were above its target for 1984-85, it could have its *allocation* reduced, and therefore might well impose cuts in expenditure on the BRI because of this pressure (and to develop other "priority" services). Hence the complaint in the 1980s, that acute hospitals were caught in an "efficiency trap": as they increased cases, their total costs increased, but their income did not. Prior to the introduction of the internal market, there were few opportunities for acute hospitals to earn extra income for doing more work. For acute hospitals in South Western RHA, the exception was for supra-regional services, in which allocations were related to volumes of cases; and recognised regional specialties where complex arrangements applied*.
31. The introduction of the NHS "internal market", in April 1991 divided purchasers and providers. This meant that DHAs no longer set global budgets for their hospitals, but contracted with various hospitals for treatment of their residents. This resulted in radical changes:
- *from* a hierarchical system of hospital budgeting (Department / RHA / DHA / hospital);
 - *to* one of contract between purchaser (funded hierarchically -- Department / RHA / DHA[†]) and provider.
32. Districts were then required to contract with providers for supplying services to their populations. The objective was that districts would be freed from running hospitals and could concentrate on estimating needs of their populations and choosing between competing providers to meet these needs. The flows of funds in

* South Western RHA's policy of charging DHAs by usage meant that the opportunity of earning extra income for doing more work applied to out-of-district cases only. (Other RHAs followed national policies of and funded recognised regional specialties in the same way as the Department funded supra-regional services.)

[†] And also GP fundholders.

the NHS managed market were far more complex than suggested by the beguiling promise that “money would follow the patient”.

(b) Main elements in national formulae for capitation and teaching and research *

Sources and structure

33. This section draws on research and official reports and is substantiated by evidence submitted to the Inquiry in the Cash Limits Exposition Booklets for the financial years 1983-84 to 1992-93 [DOH 0011 0003 to DOH 0011 0509] and 1994-95²¹ and 1995-96^{22†}.
34. This paper focuses on the main elements that drove allocations over the Inquiry period. In the 1980s, resource allocations were made within a period of financial constraint from the process of setting cash limits from cash plans, and seeking to fund “real” growth from “efficiency savings”²³:
- Revaluation for pay and prices under the system of cash planning (introduced in 1982-83), meant that authorities were no longer funded for past shortfalls caused by actual inflation exceeding that allowed for in cash plans [DOH 0011 005].
 - “Efficiency savings”, announced by the Secretary of State in December 1982, were set at 0.5% of actual allocations [DOH 0011 013]. Although this approach was discontinued for 1984-85, it was replaced by a requirement to submit to the Department a programme of “cost improvements” of 2% of its allocation: these were planned through increases in numbers of patients treated and redeploying treatment from hospitals to alternative methods of treatment²⁴. This appears to have ended by for 1988-89, as no mention of this was made in RHA policies for that year.

* The brief is to: Outline the main elements that drove national policies for funding regional health authorities: for supra regional services, undergraduate medical and dental students, and to meet capitation targets.

† The booklet for 1993-94 is not available.

35. There are many minor adjustments made in determining actual allocations each year, which are not discussed by this paper. The basis of each adjustment is adequate given that each alone is of minor significance; they were distributed in various ways (based on allocations, weighted populations, past expenditures).

Minor adjustments that are not discussed further include the following:

- Joint finance in which resources were allocated to health authorities for use by *local* authorities, which accounted for about 1% of the total revenue allocation for 1984-85 [DOH 0011 0019]*.
- Premature retirements and redundancies, which accounted for 0.1% of the total revenue allocation for 1983-84 [DOH 0011 0104]†.
- Protection through various special adjustments for costs of AIDS and breast cancer screening introduced from 1988-89, which accounted for 0.5% and 0.06% of the total revenue allocation for that year‡ [DOH 0011 0276-82].
- Various non-recurrent adjustments, for example, in 1989-90, these included waiting lists, misuse of drugs, consultant expansion and mental illness development projects, which in total accounted for about 3% of the total revenue allocation for that year§ [DOH 0011 0328-332].
- Recurrent adjustments introduced from 1991-92 for funding of Family Health Service Authority administration [DOH 0011 0415 & 455], and for artificial limbs and wheelchairs following the ending of the Disablement Services Authority [DOH 0011 0415 & 0442-454]; and non-recurrent adjustments for the cash-limited part of General Medical Services (rent of premises, practice staff, and improvement grants) [DOH 0011 0416 & 0424-441]. These in total accounted for 5% of the total revenue allocation for that year [DOH 0011 0419]**.

36. Of the above adjustments, those that remained, with specific identification for 1995-96, were: revaluation for pay and prices; and allocations for joint finance, cash-limited part of General Medical Services²⁵ and AIDS²⁶. The later analysis of

* nearly £100m; the way joint finance worked is described in UBHT 0339 0311.

† costing about £7m and £6m

‡ costing £54m and £7m

§ waiting lists (£31m with £6m being held back for targeting), misuse of drugs (£6m), consultant expansion (£5m) and mental illness development projects (£2m).

** Disablement Services Authority, £111m; FHSA Administration, £120m; GMS cash limited, £564m.

changes in “real” terms in the allocations to HCHS for England, and South Western RHA (section (c)) and to Bristol and Weston DHA, and acute services in Bristol (section (h)) examines the main service allocation, SIFT/SIFTR and supra regional specialties. This takes account of the effects of pressures from efficiency savings and revaluation. It does not take account of the other various minor adjustments.

SIFT (and SIFTR)

37. The methods used by the RAWP Report laid the basis for subsequent estimates of the medical SIFT rate per student and allocations of SIFT monies (see Box 2). From 1983-84 to 1990-91, the medical SIFT rate per student was based on results of the AGRA Report (which essentially replicated RAWP’s methods with more recent data). This rate was revalued for inflation*.
38. The SIFT rate was derived from estimates of “excess costs” of teaching hospitals: the difference between their actual costs and expected costs of treating their patients at average costs of non-teaching hospitals. These excess costs per student were derived by dividing excess costs by the number of students. The median excess costs per student was derived by ranking teaching hospitals grouped by medical school. The medical SIFT rate was put at 75 per cent of the median excess costs per student.

* Details for 1983-84, for example are given in DOH 0011 0044 and 0098.

Box 2: RAWP’s method of determining medical SIFT allocations

Element	Method
Define <i>teaching hospitals</i> by medical school.	Hospitals which took students above a threshold of a percentage of total student time at each medical school.
Sum total <i>relevant costs</i> of each teaching hospital group for each school.	<i>Relevant costs</i> of London hospitals are actual costs reduced to allow for the higher rates of pay in London.
Estimate <i>baseline costs</i> for each teaching hospital group for each school.	<i>Baseline costs</i> were the costs of treating patients at each hospital at the estimated costs of non-teaching hospitals.
Estimate <i>excess costs</i> for each teaching hospital group for each school.	<i>Excess costs</i> = <i>relevant costs</i> - <i>baseline costs</i> .
Derive <i>excess costs per student</i> by school	<i>Excess cost per student</i> = <i>excess costs</i> divided by numbers of clinical students
Derive <i>median excess costs per student</i>	From ranking <i>excess costs per student</i> by school
Set <i>SIFT rate per student</i>	At 75% of the <i>median excess costs per student</i> .
Distribute SIFT to Regions based on the product numbers of clinical students and the <i>SIFT rate per student</i> .	Clinical students are assumed to be those in the last three years of the medical curriculum and are projected two years ahead of the year of allocation. The SIFT rate for London was increased for the higher staff costs.

39. The RAWP Report recommended an allowance for dental SIFT at a rate per student of a quarter medical SIFT. The AGRA Report recommended changing this. The sum of dental SIFT was put at 85 per cent of the total national outpatient expenditure of dental teaching hospitals and distributed between RHAs in proportion to dental student numbers.

40. Analysis²⁷ for the RoR Report modified RAWP’s method of relating excess costs of teaching hospitals to medical students (see Box 3). The Report recommended that the service increment for teaching (SIFT) be replaced by a service increment for teaching and research (SIFTR); and that the SIFTR rate per student be put at 100% of the revised estimate of the median excess costs per student^{*}. From 1990-91 new rates for medical SIFT[†] were used based on

* There was, however, little change in the “real” value of the rate per student; and SIFTR allocations (although supposedly including costs of research) were still based on student numbers. Hence these changes were essentially presentational and had no substantial impact on national allocations to RHAs.

† There was, however, no change in nomenclature, from SIFT to SIFTR, in the cash limits exposition booklets until 1992-93 [DOH 0011 0498]. (SIFT was still being used 1991-92.)

estimates of the RoR Report (with virtually no change in the rate per student in “real” terms).

41. Analysis for the RoR Report used AGRA’s method of estimating service costs of teaching dental students using more recent data*. The RoR Report recommended the introduction of an additional allowance of medical SIFT for dental students at a tenth of the medical SIFT rate: on the grounds that this is the proportion of time that these students spend in general medical and surgical training†.
42. The analysis for the RoR Report is the last published analysis to justify SIFT allocations. An econometric study was commissioned by the Department in the 1990s “to reassess hospital costs associated with teaching and research ... (which) ... indicated that hospitals are spending more than the current level of SIFTR”²⁸. This unpublished study was used to justify an increase in SIFTR rates by 8% in 1995-96²⁹.

Box 3: Estimating the median excess costs per student for medical SIFT / SIFTR

<i>Element</i>	<i>1983 to 1990 (AGRA)³⁰</i>	<i>Review of RAWP³¹</i>
Definition of <i>teaching hospitals</i> by medical school.	Hospitals that took more than 8% of total student time at each medical school.	Hospitals that took more than 5% of total student time at each medical school.
Estimation of <i>baseline costs</i> .	Services: inpatients, outpatients and Accident and Emergency (A&E) attendances. Average unit costs: sample of 45 high cost modern non-teaching acute hospitals (with some adjustment for case mix of inpatients).	Services: inpatients only. Average unit costs: estimated by specialty by regression analysis from a sample of 172 large non-teaching non-London acute hospitals in England.
Estimation of <i>median excess costs per student</i>	Ranking of groups of teaching hospitals by school.	Ranking of individual teaching hospitals.
<i>SIFT rate per student</i>	<i>75% of median excess costs per student</i>	<i>100% of median excess costs per student</i>

* This increased the “real” value of the rate per student (by 21 per cent).

† But there is no evidence of implementation of this recommendation until the allocations for 1994-95, see NHS Management Executive (1993) *1994-95 Health Authority Revenue Cash Limits Exposition Booklet*. Leeds: NHS Management Executive, Table 2d(v) of Supporting Tables to the 1994-95 ICL schedule.

Supra-regional services

43. For 1983-84, multi-regional services were protected by adjustments to targets for the higher costs of cross-boundary flows [DOH 0011 0039-40]. From 1984-85, new arrangements were introduced for funding supra-regional services: funds were top sliced and services were protected by funding agreed volumes at agreed costs*.
44. Protection for neonatal and infant cardiac surgery was introduced for the first time in 1985-86 [DOH 0011 0100-101 and 0139][†], and removed in 1994-95, after being “dedesignated”^{‡2}. From 1994-95, the funding of Neonatal and Infant Cardiac Surgery was changed with costs being apportioned between regions on the basis of past usage measured by inpatient days^{‡33}.

Main revenue allocations

45. RHA target calculations begin with residential population of each RHA [DOH 0011 0032], which, from 1985-86, were projected for the year of allocation [DOH 0011 0140 and 0143][§].
46. Between 1983-84 and 1984-85, the national formula was organised around seven service components. The non-psychiatric inpatient component was the most important (and accounted for 55% of expenditure). The other six elements were outpatient services (14%), mental illness inpatient services (12%), community health services (10%), mental handicap inpatient services (6%), ambulance services (3%), and Family Practitioner Committee (FPC) administration (0.5%) [DOH 0011 0031]. Between 1985-86 and 1990-91, the component for FPC

* as recommended by the supra-regional services advisory group in October 1983 [WIT 0482 0345-362]

[†] The supra-regional services advisory group recommended an increase in the number of services covered to five supra-regional services (in October 1983) including Neonatal and Infant Cardiac surgery [WIT 0482 0345-362], but that was not one of the four protected for 1984-85: these were paediatric renal, spinal injuries, chorion carcinoma, bone marrow transplantation; and the National Poisons Unit [DOH 0011 0100-101].

[‡] Data on inpatient days from 1992-93 were used for 1994-95.

[§] OPCS forecasts were made on an annual basis from 1985-86.

administration was removed (as FPCs became independent of RHAs [DOH 0011 00140]), so RHAs' targets were based on six components only during this period.

47. RHAs' populations were weighted for service components as follows [DOH 0011 0035-36]:

- *FPC administration*: no weighting -- crude populations only.
- *Ambulance services*: weighting by regional all-age Standardised Mortality Ratios (SMRs)*.
- *Mental handicap inpatient services*: weighting by national usage by age and sex.
- *Mental illness inpatient services*: weighting by national usage by age and sex and marital status.
- *Outpatient services and community health services*: weighting by national usage by age and sex and regional SMRs.
- *Non-psychiatric inpatient services*: weighting by national usage by age and sex and regional SMRs by condition; except maternity services for which Standardised Fertility Ratios (SFRs) were used†.

48. Where regional SMRs were used, a weighting of one was applied. This meant that a RHA with 10 per cent mortality higher than expected (based on its population's age and sex) had its target increased by 10 per cent‡.

49. Adjustments were made for:-

- cross-boundary flows for inpatient services: non-psychiatric [DOH 0011 0038]; multi-regional [DOH 0011 0039-40], mental illness and mental handicap [DOH 0011 0041-42]; and
- London's higher staffing costs: both identifiable payments for London Weighting and an estimated adjustment for market forces [DOH 0011 0031].

* SMRs for an authority is the ratio of actual deaths to expected deaths (based on the size, age and sex of the authority's population).

† See also DOH 0011 0033.

‡ The RAWP Report recommended a weight of one, the justification being that it is the simplest one to make and there was no evidence of what that weight ought to be.

50. From 1990-91, four main changes were made. These are outlined in Box 4 and described here with reference to evidence from the *1990-91 Cash Limits: Exposition Booklet* [DOH 0011 0363-409] and the *1991-92 Cash Limits: Exposition Booklet* [DOH 0011 410-80].

Box 4: Main elements in the national resource allocation formula

<i>Element</i>	<i>1983-84 to 1989-90</i>	<i>Change: 1990-91 to 1993-4?</i>
Resident populations	Forecast to the year of allocation *	No change.
Weighting for age and sex	National average rates of utilisation by five-year age and sex groups to age 75, then over-75.	Drop weighting for sex. Introduce extra age group: over-75 becomes 75 to 84, and over-85.
Weighting for need additional to age and sex	Mainly all-age SMR with a weighting of one. Acute services weighted by condition.	Under-75 SMR with a weighting of 0.5. Drop disaggregation by condition.
Adjustments for cross-boundary flows	Net flow at estimated national average costs by specialty.	No adjustment for cross-boundary flows – RHAs funded by resident populations only.
London's higher staffing costs	London Weighting and an estimated adjustment for market forces.	London Weighting and an estimated adjustment for market forces and increased allocations for the Thames RHAs.

51. First, actual expenditures by RHA were estimated in terms of their *residents'* use of services (instead of costs of provision) and targets no longer included adjustments for cross-boundary flows. This meant that data on flows were used in estimating RHAs' expenditures [DOH 0011 0378-384] and not, as previously in adjusting targets.

52. Second, the method of weighting for needs changed:

- Populations were weighted for age alone (and not age and sex). An extra age band was introduced (75-84). Age weights were used across all services in terms of £s/capita – no longer were details given by service [DOH 0011 0388-390]†.
- The weighting for need additional to age (and sex) was changed from the *all-age* SMR with a weight of *one*, to the *under-75* SMR with a weight of *0.5* (the square root of the SMR) [DOH 0011 0391-392]. This change meant that a RHA with 10

* From 1985-86 [DOH 0011 0140 and 0143].

† This is shown clearly for 1991-92 [DOH 0011 0463].

per cent mortality higher than expected (based on its population's age and sex) had its target increased by 5 per cent.

53. Third, allocations for the Thames RHAs were increased by an additional 3% (on top of adjustments for London weighting and the adjustment for market forces) [DOH 0011 0379 & 394]: it was asserted that the previous allowances for higher staffing costs in London had been insufficient.
54. Fourth, RHAs' allocations were based on their targets only: RHAs were deemed to be so close to targets that there was no need to have a pace of change in moving allocations towards their targets. Although ad hoc adjustments were made [DOH 0011 0395].
55. For 1995-96, the weighting for needs was changed yet again as results of the York analysis were implemented. The age cost curve was revised. The weighting for needs additional to age by the under-75 SMR was replaced with two separate indices: one for general and acute, and the other for psychiatric services. Each index was based on a range of health and socio-economic factors. The various adjustments for higher staff costs in London were replaced by a Market Forces Factor based on four pay zones for staff costs. For capital charges district level data for land values and building costs were used³⁴.

Main capital allocations and capital charges

56. Between 1983-84 and 1990-91, capital was allocated on the basis of three criteria: the population target share; a capital stock equalisation element; and "ceilings" and "floors" on rates of change [DOH 0011 0017-18].
57. The population target share was essentially derived in the same way as the revenue target, with two main differences [DOH 0011 0017-18]: population estimates were projected five years on (age and sex utilisation rates and SMRs

were assumed to remain unchanged), and there was no adjustment for cross-boundary flows*.

58. The capital stock equalisation element essentially compared for each RHA, its actual distribution of existing stock with its “notional” (or target) stock. In 1983-84, eight RHAs were estimated to be “overstocked”: i.e. with existing stock greater than “notional” stock[†] [DOH 0011 0017 & 0054]. The South Western RHA was one of the six “understocked” RHAs [DOH 0011 0054].
59. “Ceilings” and “floors” were set for “understocked” and “overstocked” RHAs. The “ceiling” was 140% of its capitation target or 110% of its previous allocation (whichever was the lesser). The “floor” was 85% of its capitation target or 90% of its previous allocation (using whichever was the greater) [DOH 0011 0017 & 53-54]. This policy meant that capitation targets largely determined capital allocations[‡].
60. Following a review in 1983, the new policy was to phase out the capital stock equalisation element over the seven years to 1991-92 so that, by that year, capital would be distributed on the basis of weighted population only [DOH 0011 0106]. This appears to have been completed by 1989-90[§]. The change in weighting the SMR in capital targets to its square root of the SMR was made for 1991-92 [DOH 0011 0478]; and changes were again made for 1995-96, following the York study³⁵.
61. In the spirit of launching the NHS market in a steady state in 1991-92, it seems that capital charges were introduced so as to have no impact: charges were estimated by providers and allocated to purchasers according to existing use. The

* The two other differences were: Community health services were weighted using GP consultation rates, and the component for FPC administration was excluded (hence six rather than seven service components were used).

[†] These were Trent, East Anglia, the four Thames RHAs, Oxford, and Mersey.

[‡] In 1983-84, for example, the capital allocation to South Western RHA was £40.2m of which the capital stock equalisation element contributed £5.5m (14%).

[§] In 1984-85, details are given of the stock equalisation element [DOH 0011 0116], but no such information is given for 1985-86 in the section on capital allocations [DOH 0011 0207-216]. By 1989-90, there was no such calculation, which suggests that the stock equalisation element ceased to be used then.

first move to distribute these on a capitation basis was made for 1994-95³⁶. Capital charges were merged with revenue in making allocations from 1995-96³⁷. Hence they appear to be largely irrelevant to resource allocation during the Inquiry period.

(c) Policy aims and objectives of national formulae for funding RHAs*

Sources

62. Official statements of objectives of elements of resource allocation sometimes give different emphases from the way methods actually work. My view of the underlying objectives is based on research and official reports rather than the formal evidence submitted to the Inquiry.

SIFT (and SIFTR)

63. There are different approaches to funding medical and dental undergraduates. The clinical training of medical undergraduates is a by-product of medical teaching hospitals -- their main purpose, of course, being to care for patients. In contrast, as the AGRA Report pointed out, the main purpose of dental teaching hospitals is to provide clinical training of dental undergraduates – with the care of patients being a by-product. Dental students learn in dental teaching hospitals how to provide general dental services in their own surgeries when they are qualified. It is thus relatively straightforward to estimate the service costs of teaching clinical dental undergraduates. Dental SIFT reflects, and is directed at covering, these costs. This is, of course, how things ought to be. The reason for emphasising this characteristic of dental SIFT is that medical SIFT (and SIFTR) is much more complicated and its actual function less clear.

64. In contrast with the teaching of dental students, there are few readily-identifiable direct costs of teaching medical students. This means that estimating their teaching costs raises the methodological problem of costing joint products³⁸: for example, allocating the costs of rearing sheep to producing mutton and wool.

Consider the problem of allocating costs when a patient is being used for undergraduate teaching, training of a registrar and nurses, and is also part of a randomised controlled trial. This difficulty may explain why medical SIFT (and SIFTR), has always been derived, not from direct estimates of the costs of teaching medical students, but from the excess costs of teaching hospitals over other hospitals. The rate per student is based on the median value from a ranking of excess costs per student. This, of course, raises questions over whether these excess costs are attributable to teaching.

65. The RAWP Report stated that medical SIFT's "*sole purpose is to cover the additional service incurred by the NHS in providing facilities for the clinical teaching of medical students*" [emphasis in original]. Both the RAWP and AGRA Reports, however, indicated that their estimates of medical SIFT were likely to exceed these costs. Medical SIFT, and SIFTR, were (and still are) general subsidies to teaching hospitals to cover their higher costs over non-teaching hospitals. We do not know the extent to which these higher costs were due to the teaching of medical students, or research, or specialised care, or higher-quality of care (for general patients), or training costs, or distinction awards, or inefficiency. This was recognised by the Winyard Report, which stated that SIFT[†] was intended to cover 'historic infrastructure costs, *whether or not they are currently required for education*' (emphasis added).

66. SIFT (and SIFTR) allocations have had two latent purposes. First, to offset the redistribution of resources from London through capitation, because teaching hospitals are concentrated in London. Second, more generally to protect teaching hospitals from the impacts of redistribution by capitation and pressures on prices in the internal market. The Winyard Report³⁹ stated that one of the functions of SIFT was to ensure a 'level playing field' in the health care market – by subsidising the higher costs of teaching hospitals.

* The brief is to: Outline the major aims and objectives underlying national policies for the main elements of funding regional health authorities.

† SIFT was redefined as 75% of SIFTR with additional funding, see Bevan G. The medical Service Increment For Teaching (SIFT): a £400m anachronism for inefficiency and inequity in the English NHS? *British Medical Journal*, 1999; **319**: 908-911.

Supra-regional services

67. The AGRA report recognised that that the costs of multi-regional services may not be adequately accounted for by the normal arrangements for cross-boundary flows, and recommended adjusting regional targets on the basis of specially-costed cross-boundary flows for a few recognised services. This policy applied from 1980-81 to 1983-84 [DOH 0011 0098] and is consistent with a policy of achieving an equitable distribution of resources.
68. From 1984-85, however, new arrangements were introduced for funding supra-regional services [DOH 0011 0098-01] so that these were funded for agreed volumes at agreed costs, and protected through top slicing (i.e. in the same way as regional SIFT allocations). This policy of funding supra-regional services at actual costs developed outside national policies on resource allocation* and was justified by objectives other than seeking an equitable distribution of resources. For Neonatal and Infant Cardiac Surgery, these are indicated by a paper prepared by the Department†, which explained the advantages of concentration in a few centres to achieve high standards of diagnosis and treatment: as established centres had lower than average mortality‡.

Main revenue allocations

69. Prior to the RAWP report, the way NHS resources were allocated was graphically described as being based on an “inverse care law”⁴⁰. It was argued that resources were allocated in inverse proportion to need: with deprived areas having worse health care. There were three contributory causes of this perversity in a NHS created to achieve equity in access to health care⁴¹.

* It was not even considered by the RoR Report; and continued after the introduction of the internal market [DOH 0011 0412].

† as an Annex to the Minutes of the Meeting of the Supra Regional Services Advisory Group of 14 October 1983 [WIT 0482 0349-62].

‡ This suggested centres of optimal capacity would serve populations of 5-7 million and proposed nine centres for England. This obviously is intended to achieve equity in some way, but, it can create inequities in funding. Indeed, this is why the South Western RHA used a different policy for funding regional specialties: to protect services during a development period (stated as three years), and then to charge districts proportional to actual usage (see (f) below).

70. First, resources were allocated according to a system of “incremental budgeting”:
that is to say that existing budgets were the main determinant of future budgets.
The NHS thus perpetuated the inherited distribution of hospitals and of hospital
budgets*.
71. Second, the main way of changing the allocation of revenue was by bidding for
new capital, because after the completion of a new scheme, the running costs were
generously funded – known as the revenue consequences of capital schemes
(RCCS). There were two problems with this. First, although hospital planning⁴²
aimed to offer an equitable basis for capital development, *timing* of developments
had no equitable basis. Second, as the RAWP Report observed, bidding for capital
became to be seen as the main opportunity for increasing revenue.
72. Third, undergraduate and postgraduate teaching hospitals were outside the
regional structure of Regional Hospital Boards. Teaching hospitals were
accountable to their own Boards of Governors[†], which negotiated directly with the
Department for revenue and capital and secured much more generous levels of
funding than other hospitals[‡]. The 1974 reorganisation integrated undergraduate
teaching hospitals within the new population-based structure of health authorities[§].
This change made abundantly clear inequities in the supply of health care between
authorities, and is likely to have been one of the reasons for setting terms of
reference in 1975 for the Resource Allocation Working Party (RAWP)⁴³.
73. The RAWP Report interpreted its terms of reference to mean equalising
“opportunity of access for people at equal risk”. In practice resource allocation

* London had a concentration of hospitals because of investment by the London County Council and its historic concentration of teaching hospitals; and hence London continued to receive a disproportionate share of resources in relation to its population. Prior to the 1974 reorganisation, hospitals were not related to populations and so the national and regional processes did not take account of their needs. “Incremental budgeting” also applied to each hospital: the level of funding inherited at the start of the NHS influenced future allocations to each hospital within the NHS. Those that were relatively generously funded continued to be so (and vice-versa).

[†] This concept was the model for the governance of NHS Trusts introduced with the creation of the internal market.

[‡] It is argued below that a function of medical SIFT (and SIFTR) has been to enable undergraduate teaching hospitals to continue to be funded more generously than other hospitals.

[§] Most postgraduate teaching hospitals, however, remained independent of population-based health authorities – see below. The Hammersmith exceptionally did move into such a health authority in 1974,

formulae essentially aimed to equalise the distribution of resources for defined populations taking account of differences in risk (normally described as need) and unavoidable differences in costs of supplying services. The policies of successive governments have consistently sought to achieve equity and have commissioned and published research aimed at improving these measures. Equity in terms of health care as measured by capitation targets has now virtually been achieved between districts in England⁴⁴, and a new policy is being developed of using resource allocation to reduce inequities in health⁴⁵.

Main capital allocations and capital charges

74. To estimate a RHA's relative need of for capital requires estimates of the relative needs of its population and the extent to which these are met by its existing capital stock. Thus, to achieve an equitable distribution of capital, the new capital for each year ought to be distributed to remedy inequities in capital stock. This is essentially the policy that has been sought through capital allocations following the RAWP Report. Capital allocations have also been managed with the objective of maintaining continuity in funding (total capital allocations for England have been subjected to much greater variations than for revenue).
75. There were two objectives of introducing capital charges with the introduction of the internal market: to make the NHS aware of the opportunity costs of capital (which had been seen as "free" good) and to create a "level playing field" between NHS and private hospitals

(d) Strengths and weaknesses of national policies*

Sources

76. This section is a personal overview of strengths and weaknesses of national policies drawing on research.

but then moved out into a Special Health Authority (SHA) in the "restructuring" of the NHS, which created DHAs, in 1982.

* The brief is to: Comment on the strengths and weaknesses of the main elements that drove national policies in terms of their major aims and objectives, and their sensitivity to key variables such as population health needs (including "social deprivation") and cross-patient boundary flows.

SIFT (and SIFTR)

77. Medical SIFT rates per student were set by the RAWP and AGRA Reports at 75% of their estimated median ‘excess costs’ per student with little justification⁴⁶. For the RoR regression analysis was used to estimate the effects of teaching and research* on ‘excess costs’. The RoR Report replaced SIFT with SIFTR which was defined as covering 100% of its estimate of the median excess costs per student, and the excess costs of teaching and research[†]. Again there was little justification for this⁴⁷, and this choice was probably made because it meant little change in the “real” rate per student⁴⁸.

78. The titles of medical service increment for teaching (SIFT) -- and medical service increment for teaching and research (SIFTR) are confusing *persuasive* definitions. Teaching hospitals do incur opportunity costs in supporting clinical teaching of medical undergraduates: for example, time spent by doctors in teaching (during which they cannot treat patients); and teaching students in outpatients means that it takes longer to see patients. This does not mean, however, that the service costs of teaching students equals the SIFT monies, nor that these monies are directed at teaching. Two studies in the early 1990s, for example, estimated that the direct salary costs of teaching were only ten per cent of the monies available⁴⁹. SIFT (or SIFTR) income was not clearly identified within teaching hospitals. Indeed the impossibility of extracting this from the running costs of teaching hospitals was vividly described as being analogous to trying to extract creosote after it has soaked into a fence[‡].

* The proxy used for research was medical research expenditure, which was available by school, and allocated to hospitals by judgement. The teaching effect was significant (and accounted for 78% of excess costs) the research effect was not (at the 5% significance level).

[†] This definition, not surprisingly, created naive expectations that SIFTR would be worth a third more than SIFT. The Report suggests in different places that SIFTR was worth both 2% more and 2% less than SIFT! SIFTR has been estimated to be worth 6% less than SIFT, see Bevan G. The medical Service Increment For Teaching (SIFT): a £400m anachronism for inefficiency and inequity in the English NHS? *British Medical Journal*, 1999; **319**: 908-911.

[‡] By Professor Stirrat of Bristol University.

Supra-regional services

79. The AGRA Report recommended protecting multi-regional services by adjusting cross-boundary flows for their higher costs per case (than those of the average costs per case of the specialty to which they belong), which meant that each RHA was credited in its target for inflows and debited for outflows. From 1984-85 the new policy of funding these as supra regional services meant that each RHA's allocation included finance for these services at agreed volumes and agreed costs. As utilisation of hospital services declines with distance, there is likely to be higher-than-average rate of utilisation of supra regional services in the host RHA and DHA of a supra regional specialty. Funding by volume ignores these differences in rates of utilisation, and thus funds unequal rates of use. Adjusting for cross-boundary flows in a capitation formula means that the host RHA and District has to fund in some way the higher rates of utilisation of supra regional specialties (e.g., by a lower rate of utilisation of general services).

80. The unequal funding of supra regional services for Neonatal and Infant Cardiac Surgery is indicated by analysis of its use in 1994-95. Residents of NE Thames RHA, for example, accounted for 11.4% of revenue expenditure on these services for that year, but their share of the weighted population (including the various extra allowances for London) was 8.4%⁵⁰. Hence, residents of NE Thames RHA were funded at about a third more for these services than by a capitation policy.

Main revenue allocations: weighting populations

81. This section considers four main estimates on which capitation formulae essentially depend:

- population size;
- population weighting for age (and sex);
- population weighting for need additional to age (and sex); and
- adjustment for unavoidable costs.

82. *Estimates of population sizes* are fundamental to determining resources through capitation formulae: under-estimating an authority's population will result in an under-estimate of its need for resources. DHA populations are estimated from the decennial censuses and forecasts were made for each year by the Office of Population Censuses and Surveys (now the Office for National Statistics). With the move to basing resource allocation on practice populations, in the *New NHS*⁵¹, new attention has been directed at discrepancies between two sets of official statistics that give different estimates of DHA populations: based on the census and on patients registered with GPs who live in each DHA. Typically the number estimated from GPs' lists is larger than that estimated from the census and the difference is known as "list inflation". This gives the misleading impression that the estimate derived from the census is correct, and the GPs' lists are overestimates (because of delays in recording patients who have died or moved). But both estimates are likely to be in error in cities through problems of coping with movements of populations. The census also has problems of potential under-recording with the homeless and, with the 1991 census because of the "poll tax". The discrepancy between the two official estimates is greatest in inner-London (and in 1997 was 23% in Ealing, Hammersmith, and Hounslow⁵²).
83. It is likely that over the period of the Inquiry, the populations of inner cities - and in particular inner London - were underestimated. It is impossible to know what the accurate statistics would have been. Their impact would have been likely to increase the resources allocated to the Thames RHAs and London DHAs within each Thames RHA, and thus reduce resources allocated to the South Western RHA but increase Bristol and Weston DHA's share of its RHA's total allocation.
84. *Population weighting for age (and sex)* is based on national average rates of utilisation. Following the Review of RAWP an extra age band was introduced: the original RAWP formula used groupings up to 75 and then one group for over 75s, this became 75 to 84 and over 85. This also meant that weighting for sex had a minor effect on RHAs' targets (of less than 0.3%⁵³), and was dropped. Although utilisation differs by sex for the same age, there is little difference between RHAs in the ratio of the sexes at different ages.

85. Compared with the debate over SMRs, there has been relatively little debate over the use of national average rates of utilisation to derive weighting for age (and sex). There are, however, questions over weighting for age (see Box 5).

Box 5: Some questions raised by using national utilisation rates to measure need by age (and sex)

<i>Question</i>	<i>Comment</i>
Does this method give good estimates of relative costs?	There is a problem in accounting for costs by age, as older people tend to have longer stays in hospital, but costs are not proportionate.
Is utilisation is a good measure of relative need?	If there is rationing by age, then it may be argued that the elderly receive less care than they need.
Does this penalise areas with high premature mortality?	Substantial health care resources are spent in the last six months of life. Average utilisation by age group assumes each area experiences average rates of mortality in each age group. If an area has higher mortality than average in an age group, then its need for resources are likely to be higher than average (and vice-versa).

86. *Population weighting for need additional to age (and sex)* has been the most controversial element in the capitation formula, for very good reasons, because, as Buxton and Klein commented, over 20 years ago⁵⁴:

‘The basic problem in trying to settle this argument is that it is precisely because we have no good measure of morbidity that we need to search for a proxy, and in the absence of good morbidity measures ... there is no firm basis against which to test the strength of supposed proxy measures. Indeed it is extraordinarily difficult even to find an acceptable all-embracing *definition* of morbidity.’

87. Measuring relative morbidity hence belongs to a category of concepts that have been well described as being essentially contested⁵⁵. The debate over which proxies are the best measures cannot be resolved: if direct measures were available we would use these and not proxies. Poor knowledge of the prevalence of diseases in populations is a primary obstacle in developing capitation formulae, but, if we were to have perfect knowledge of disease prevalence, we would then discover other equally serious obstacles. For example, in addition to knowing numbers suffering from various diseases, we need to know the proportion of these who would benefit from treatment: estimates of the total and treatable burden of disease has shown that these can be very different⁵⁶. As the perfect information

required to determine idealised targets is not, and never will be, available, it is impossible to know whether national weights for needs are correct in allocating resources to health authorities. Indeed it is difficult even to know whether the various changes in weighting for relative needs are improvements as compared with those recommended by the RAWP Report. Thus Sheldon, one of the York study team, has argued for replacing the complex weighting based on that study with an under-75 SMR with a weight of one⁵⁷.

88. There are good reasons for taking mortality data as the best proxy measure of illness in populations⁵⁸. But that still poses a host of questions in how to use these data in formulae for allocating resources (Box 6 discusses some of these). Two issues have dominated the arguments over the use of SMRs: deciding what weight to give to SMR; and whether there are additional needs in deprived populations that are not captured by mortality data.

Box 6: Some questions raised by using mortality data as an indicator in formulae for resource allocation

<i>Question</i>	<i>Comment</i>
For which services is mortality a good measure of morbidity: is it only relevant for acute diseases?	Bennett and Holland argued that there is little geographical variation in the incidence of chronic disease ⁵⁹ . What matters is whether the residual variation is correlated with the SMR. Although we do not have data on the incidence of chronic disease, this is likely to be indicated by the census question on long-standing limiting illness. The York Study ⁶⁰ found that, in the under-75s, this was strongly correlated with the under-75 SMR (0.81).
Mortality is focused on morbidity: to what extent do mortality data capture extra needs for health care of deprived populations?	As the RAWP Report pointed out, SMRs are correlated with all indicators of social deprivation. This has been a consistent finding of subsequent empirical research.
Where mortality is a good measure of morbidity, is the SMR an appropriate index?	The all-age SMR is only one of various mortality indices. Research has shown that use of different indices would significantly change authorities' targets. Mays and Bevan ⁶¹ argued that age specific SMRs would provide more appropriate weighting than all-age SMRs.
If the SMR is an appropriate index, which age range should be used?	As the all-age SMR is dominated by deaths in the very elderly, the under-75 SMR is likely to be more sensitive to variations in underlying need. And deaths of over-75s often occur in nursing homes which can result in under-recording of these deaths in inner-cities; using the under-75 SMR means that this problem is largely overcome.
And if the SMR is based on a restricted age range (under 75), then should it, nonetheless, be applied to the whole population?	If the under-75 SMR were applied to the under-75s only, this means that no weighting is applied to the over-75s. (In England the under-75 SMR is applied to the whole population. In Wales, under-75 SMR is applied to the under-75s only, and Scotland, the under-65 SMR to the under-65s only ⁶² .)

89. The chain of assumptions underlying the use of SMRs in determining the allocation of resources is extended, but reasonable: areas with higher mortality will have higher levels of morbidity and ought to have more resources. But consider, for example, an area with a SMR of 110, what higher levels of morbidity might produce 10% higher mortality: 5%, or 20%, or what? And even if they were 10% higher levels of morbidity, what extra resources are needed to treat these: again 5%, or 20%, or what? The RAWP Report simply assumed that an area with a SMR of 110 needed 10% more resources.

90. To identify the additional needs for health care from areas which are socially-deprived* requires distinguishing these from needs that are already accounted for by the current weights in the formula (age, sex and SMR). As the RAWP Report pointed out, SMRs are correlated with all indicators of social deprivation. There is no easy way of estimating, by purely normative approaches, the extra need for health care that is intended to be funded by an additional indicator for social deprivation.
91. The Department commissioned two studies to try to resolve both problems of deciding what weight to give to SMR and accounting for additional needs in deprived populations: for the RoR Report⁶³ and the York study⁶⁴. Each study sought to derive estimates of need from analysis of small area variations in utilisation. Each recognised that these variations will reflect both variations in need and in access to supply: for example, an area with twice as many acute beds per capita than average, will tend to have twice the utilisation of services than the average. This problem is crucial, as inner-city areas tended to have three characteristics: poor health and material deprivation; concentrations of supply of acute hospital services; and high utilisation of acute hospital services. Each study's objective was to develop methods that removed the impact of supply on utilisation and explained the residual variations in utilisation (i.e. those not explained by supply) by socio-economic variables that were good proxies of need for resources. In this way these proxies could be used in formulae for resource allocation so as to direct extra resources to meet needs (and avoid simply directing resources to areas with high levels of utilisation caused simply by high levels of supply).
92. Each study estimated relationships between: small area variations in utilisation (having sought to take account of differences in age and to control for supply) as the dependent variable; and various indicators of health and socio-economic conditions, as independent variables. This approach offers the promise of an empirical basis of what weight to give to the SMR and other indicators in ways

* The assertions that formulae for allocating resources for health care ought to take account of "social deprivation" must be based on the additional needs for health care that arise from these causes. Obviously it is not a function of health care to remedy the causes of social deprivation. And should

that remove distortions caused by inequities in access to supply^{*}. Empirical approaches, however, do not offer a complete resolution of the problems of calibrating needs for health care in formulae because of four main difficulties.

93. First, there is the fundamental question over using methods that analyse what *is* to infer what *ought* to be. Studies in the UK⁶⁵ and the US⁶⁶ have found correlations between variations in admission rates in *aggregate* and generic indicators of need. Studies of variations in admission rates for *specific conditions and procedures* have, however, consistently argued that these can only be explained by variations in medical practice and not by differences in morbidity⁶⁷. Furthermore, as it is highly likely that the poor, for similar levels of illness, make less use of health care than the rich do, estimating relative needs from relative utilisation is likely to underestimate the relative needs of the poor[†]. (One study has indicated that people in the UK who are poor have lower surgical rates than would be expected from the rates at which they consult GPs⁶⁸.)
94. Second, there are various inadequacies in data on utilisation of services. There are problems over the accuracy and completeness of NHS data on utilisation. However, even if we ignore these deficiencies, there is an unavoidable limitation in the way in that data on utilisation are linked to indicators of health and social conditions not on an individual basis, but by small area. This creates the problem known as the *ecological fallacy*. A “socially-deprived” area may have high utilisation of services, but it may not be the individuals who are “socially-deprived” in that area who make high use of hospital services.

extra funds be spent, for example, on health care needs from inadequate housing rather than making housing adequate?

^{*} Thus, for example, analysis for the RoR Report estimated that the coefficient of the SMR that best explained variation in admission rates was 0.44: so an area with a SMR of 110, would have admission rates that were 4.4% higher (and not the 10% that the RAWP Report assumed ought to occur). This analysis also found that the Jarman index was a significant indicator of variations in admission rates in addition to the SMR. That is to say that there were residual variations admission rates (after taking account of the impact of those variations associated with SMRs) that were explained through indicators of social conditions.

[†] To know whether this is so, however, again means that we face the fundamental problem of lack of data on the prevalence of diseases. This is why the literature is so sparse on what would naively expected to be the obvious empirical question of whether relative utilisation by the poor underestimates their relative needs for health care.

95. Third, there are problems in controlling for the impact of supply on utilisation. Both the study for the RoR and the York study used a simple gravity model that assumed constant decay in hospital utilisation as distance increased (the function being based on the reciprocal of the square of distance) in an attempt to control for the influence of supply of NHS acute hospital beds on utilisation of NHS acute services. Other studies have found, however, that utilisation has a lower rate of decay with increases in distance in rural areas than in cities⁶⁹. This is just what we would expect*. This means that these studies by relying on the same function to model the impact of distance on utilisation for all areas are likely to have produced biased estimates of the expected rates of utilisation.
96. Fourth, as Grossman pointed out⁷⁰, there is a two-way interaction between need and utilisation: need will have an impact on use of hospitals, and vice-versa, which requires analysis using methods of simultaneous estimation⁷¹. Unfortunately, the analysis for RoR⁷² estimated coefficients using Ordinary Least Squares, ignoring the problem of two-way interaction between need and utilisation, and thus produced biased estimates⁷³. This methodologically flawed analysis was used to reduce the weight on the SMR, and the redistribution of resources from over-target to under-target RHAs (as identified by the previous method of the RAWP Report). The York study addressed the problem of two-way interaction between need and utilisation by using methods of simultaneous estimation⁷⁴. These results when implemented to a considerable extent moved back to a formula with a similar redistributive effect to that of the RAWP Report[†] (although this was originally dampened by weighting inpatient services only⁷⁵).

Main revenue allocations: accounting for cross-boundary flows

97. Prior to the internal market, NHS capitation formulae applied to *catchment* populations: i.e. resident populations adjusted for cross-boundary flows. There are various ways of estimating catchment populations⁷⁶. The method used by the

* People who live in cities have high utilisation over short distances and virtually none for large distances (as they do not have to travel far to get to hospital). People who live in the country, however, have virtually no utilisation for short distances (as they have to travel some distance to get to hospital) but maintain utilisation rates over the long distances necessary to reach their closest hospital.

† These methods were approximately equivalent to giving the SMR a weight of 0.8, as compared to the weighting of one by RAWP, and 0.5 by RoR (personal communication by Professor Trevor Sheldon).

national formula (and most RHAs) is known as the net flow method*. Four problems were recognised with methods of adjusting for cross-boundary flows.

98. First, for non-psychiatric inpatients average specialty costs were estimated. It was argued that cases that crossed boundaries would be more complex than average cases and hence more costly⁷⁷. RHA targets were, however, dominated by their populations, and sensitivity analysis showed that they were robust to changes in specialty costs⁷⁸. This can be a more significant problem in subregional allocations[†].
99. Second, no account was taken of cross-boundary flows of day- and out-patients, which the RAWP Report saw as a major omission: commenting that “they represent almost as large a proportion of NHS expenditure as all psychiatric patients, yet virtually nothing is known about their characteristics and movements” (p82)[‡].
100. Third, the method of accounting for long-stay patients was inadequate: flows were imputed rather than derived from empirical data[§]. This method penalised RHAs that were implementing national policies of developing community-based care, because it was assumed that their lower numbers of long-stay patients were due to these being cared for in other RHAs⁷⁹. This adjustment had been progressively reduced until 1993-94, when this taper was suspended pending review which found costs of caring to be substantially greater than the allowance for 1993-94. This was increased on an interim basis for 1995-96⁸⁰.

* For each RHA (say X), this method simply counts, by specialty, the numbers of inflows into a RHA (i.e. residents from other RHAs who are treated in hospitals in X) and outflows from a RHA (i.e. residents from X who are treated in hospitals in other RHAs). The difference between inflows (e.g. 10,000 cases in general surgery) and outflows (e.g. 8,000 cases in general surgery) gives the net flow (e.g. 2,000 cases in general surgery). The number of cases multiplied by the average cost per case of specialty X (say £1,000) gives the credit (where inflows exceed outflows as in this case being £2m) or debit (where outflows exceed inflows). The net flows are summed across all specialties to give a total net adjustment to the target.

[†] And South Western RHA modified its methods using improved estimates of costs (see (f) below).

[‡] And said that it was “an urgent need to assemble better information about this group of patients” (p23)

[§] This being deemed impractical for long-stay patients.

101. Fourth, flows to postgraduate teaching hospitals appear to have been ignored in setting RHAs' and DHAs' targets^{*}. It would have been difficult to accommodate these hospitals within a population-based funding formula. Although the internal market created the opportunity to bring them within the system of funding through contracts, this did not take place until 1995-96 (with special allowances for the estimated higher costs of postgraduate teaching hospitals over general hospitals)⁸¹.
102. The *Report of the Inquiry into London's Health Service, Medical Education and Research* (The Tomlinson Report of 1992)⁸² rightly observed that as the services provided by postgraduate teaching hospitals had been a free good to purchasers, this had distorted the objective of achieving equity through capitation formulae[†]. The internal market made it clear that their position was anomalous with obvious financial incentives to DHAs to use their services at no cost. Prior to the internal market, however, the position was more complex. For DHAs in South Western RHA, the decision to fund the development of cardiac services in Bristol as a regional specialty meant that referring patients incurred direct charges[‡]. In contrast, referring patients to postgraduate teaching hospitals would have been "free", and to hospitals in other RHAs would have had an impact on target allocations only with a two-year lag.

Main capital allocations and capital charges

103. The method of making capital allocations required estimates of relative needs of populations for capital and valuing capital stock.
104. The methods of deriving capital targets have largely been based on the same methods as for revenue, and thus assume that need for revenue is a good measure of need for capital. But this will almost certainly vary across services and over time. The shift to day case surgery, for example, changes the relative

^{*} There is no reference to postgraduate teaching hospitals in accounting for cross-boundary flows in setting RHA targets prior to the introduction of the internal market in the cash limits exposition booklets. They were, however, funded for supra-regional services from 1985-86 [DOH 0011 0139].

[†] The Thames regions used 87% of the services whereas an equitable share would have been 29%.

[‡] under the policy of South Western RHA – see below

requirements of capital and revenue. The NHS, however, lacks any information on how population characteristics relate to needs for capital.

105. The RAWP report estimated capital stock based on bed numbers in 1961-62 (revalued and depreciated by age) and capital expenditure since then based on a 1972 survey, which was incomplete and under-represented teaching hospitals^{*83}. This showed that nearly 65% of stock (measured by floor area) existed before 1918. The stock was valued with acute beds having twice the value of non-acute beds, and being depreciated according to age. Hence the raw data were poor, and the method of valuing stock was inadequate, as it took no account of maintenance and location: some beds in hospitals built before 1918 may be as good as new; others of poor value[†].

106. As capital charges are largely irrelevant to the period of the Inquiry, there is no need to review their strengths and weaknesses in any detail. A review by Lapsley, however, suggests that, although this was one of the most significant accounting changes introduced as part of the NHS reforms, they failed to achieve comparability in costs between NHS and private hospitals and their impact on managerial behaviour was patchy and uneven⁸⁴.

(e) The impact and consequences of national funding[‡]

Sources and structure

107. This section describes changes in the total for England and its distribution to South Western RHA. Figures and details of sources for the analysis are in a Technical Appendix (in Tables 1, 2, 3A, 3B, 3C, 3D, 3E, 3F, 4A, 4B, and 4C).

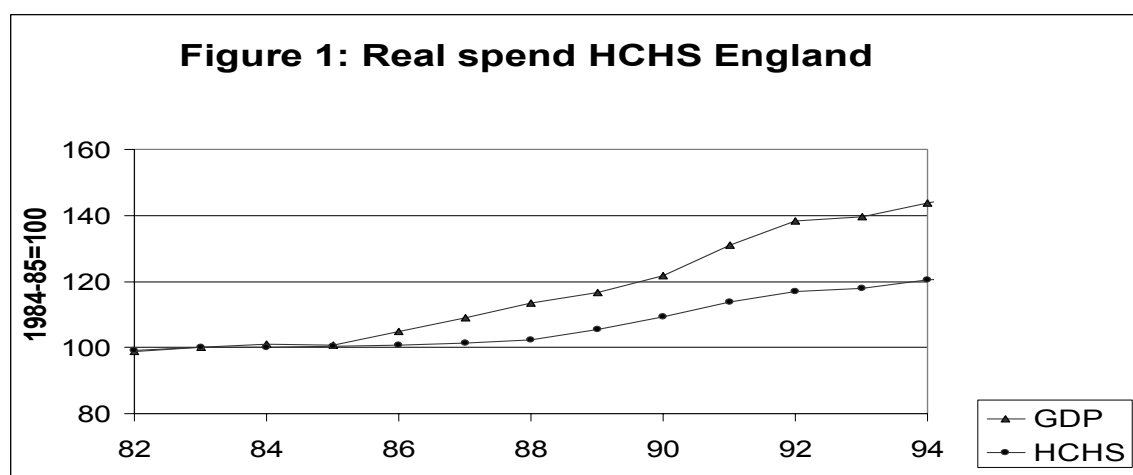
* It was a survey of Regional Hospital Boards, which were not responsible for teaching hospitals.

† No information is given in the cash limits exposition booklets on the method used following the 1983 review of methods of capital allocation.

‡ The brief is to: Describe the impact and consequences of the main elements of national funding of South Western RHA, relative to other English RHAs.

England

108. To estimate changes over time, it is essential to remove the effect of inflation and estimate expenditure in “real” terms (i.e. constant prices). There are two price indices that are used to do this: one is based on changes in pay and prices in the general economy (the GDP deflator), the other on pay and prices of staff and consumables in the NHS (the HCHS deflator). There is a general tendency for pay to increase faster than general inflation, and most of HCHS expenditure is on pay.
109. Figure 1 shows changes in the allocations of HCHS resources for England in “real” terms over the period 1982 to 1995. The sources of these data are official publications by the Department*. Thus Figure 1 shows that, using the GDP deflator, there were increases in NHS expenditure each year over this period, and in contrast, using the HCHS deflator, shows that expenditure to have been at a standstill between 1984 and 1988. After the publication of *Working for Patients* in 1989, Figure 1 shows substantial increases in “real” terms in the total HCHS allocated to the NHS. Hence the resource position was transformed in terms of spend on the NHS†.



* Source: Technical Appendix, Table 1, columns 1 and 2. These data give a good indication of the changing resources available for HCHS in England as they are largely unaffected by the change in the funding of RHAs (from catchment to resident populations) and largely exclude capital charges introduced following the NHS reforms

† But these extra resources were also required to help launch the NHS internal market with its various transaction costs: for example, of contracting, invoicing, price determination.

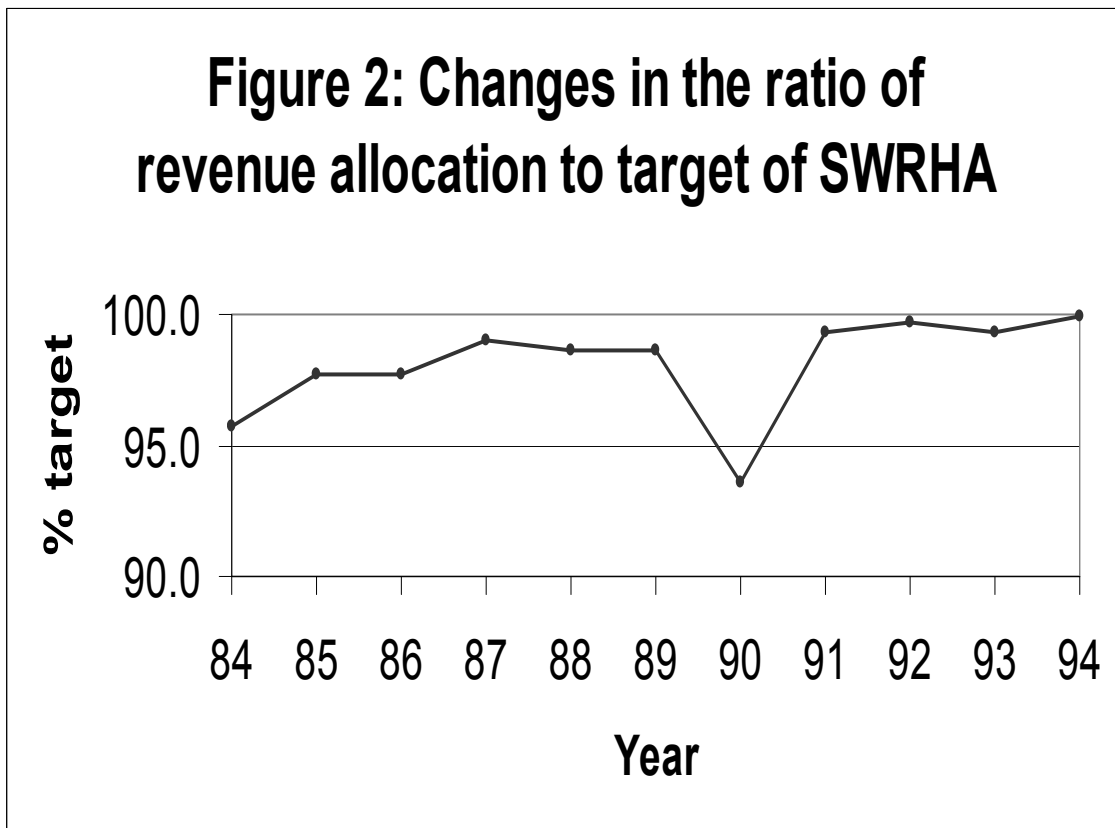
South Western RHA

110. The analyses of reported here of South Western RHA, and below of Bristol and Weston DHA, and acute services in Bristol use the HCHS deflator to measure expenditure in “real” terms.
111. South Western RHA’s main revenue allocations reflected both the national funding of HCHS and their relationships to its targets. This analysis mainly uses data supplied by the Department* [WIT0482 0218, Table 3]. The RoR Report (Figure 1.1) shows that between 1979-80 and 1988-89, South Western RHA moved from having an allocation that was about 96% of its target to about 98.5% of its target. Figure 2[†] shows the ratio of the RHA’s main revenue allocation to its target between 1984-85 and 1994-95*. The allocation is 5% below target in 1984-85 and moves towards the target until 1988-89. The shift to being 6% below target for 1990-91 will have been caused by two changes.
112. First, changes in the national formula following the recommendations of the RoR Report, which recommended changing from an all-age SMR with a weight of one to the under-75 SMR with a weight of 0.44, and introducing a weighting for “social deprivation” in the form of the Jarman index (UPA8). Table 8.2 of the RoR Report shows the impact of these (and other) recommended changes on RHA’s targets for 1988-89. The effects on the target of South Western RHA of the SMR change and the Jarman index were to increase and reduce its target by 1.9% and 1.4%. The other main change to the target of South Western RHA was from introducing the extra age band, which resulted in an increase of 1.1%. The net effect of all changes was to increase its target by 1.8%. As the changes made to the formula used in determining allocations omitted the Jarman index, the analysis for the RoR Report suggests that this benefited South Western RHA by

* As there was no information for the target for 1980-90, the ratio of allocation to target for that year has been assumed to be the same as for 1988-89.

† Source: Technical Appendix, Table 2, column 1

about 1.4%. In 1990-91, its allocation for its resident population was about £900m [DOH 0011 0371] and hence this omission indicates a gain of nearly £13m in revenue for the RHA each year until 1995-96 (when the formula was changed again following the York Study).



* The new formula based on the York study which was introduced for 1995-96 applied to the new eight RHAs, in which South Western and Wessex RHAs were merged to form the South and West RHA, it is difficult to estimate the impact of these changes on South Western RHA.

113. Second, the whole basis of calculating RHA allocations changed in 1990-91 to being based on resident and not catchment populations (in preparation for the internal market), so that RHA allocations for 1990-91 are not strictly comparable with the earlier years. Because South Western RHA was below its target throughout the period 1984-85 to 1994-95, its annual percentage increases in cash were marginally larger than those for England*.
114. The RHA's share of main revenue allocations for the total of all RHAs in England increased from 6.47% in 1983-84 to 6.60% in 1986-87, and then barely changed until 1989-90 when it increased to 6.64%†. Although South Western RHA benefited in terms of higher-than-average revenue allocations, before 1988-89, this was within a stringent regime of little or no "real" growth in the total. Figure 3‡ shows a bleak picture for 1984-85 to 1988-89 of limited growth in its main allocation followed by reductions so that, in "real" terms, the allocation for 1988-89 was marginally lower than for 1984-85. After that there was "real" growth each year§.
115. The main service allocations do not include protected allocations (SIFT/SIFTR and supra-regional specialties), capital charges, joint finance and non-recurrent adjustments. The impact on the RHA of the protected sums for SIFT/SIFTR and supra-regional specialties was, however, less than 2% of the main service allocation for the years for which we have comparable data (1983-84 to 1991-92)**.

* Over the six years 1984-85 to 1989-90, the average extra percentage increases in cash for the RHA was 0.4%; and over the five years 1990-91 to 1994-95, this was doubled to about 0.8% (Source: Technical Appendix, Table 2, column 12).

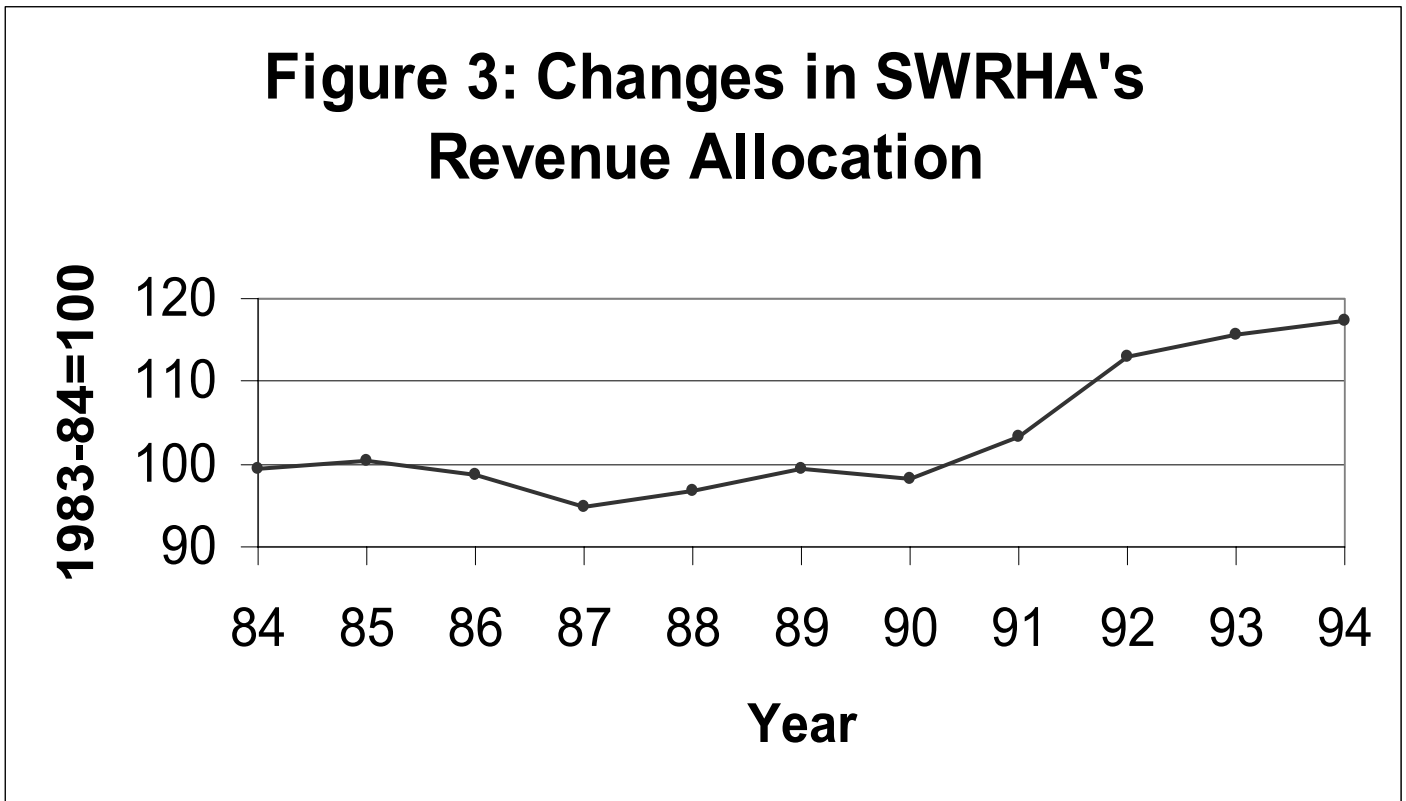
† Source: Technical Appendix, Table 3A.

‡ Source: Technical Appendix, Table 2, column 2.

§ We can disregard the apparent zero growth between 1989-90 and 1990-01, as these are not really comparable.

** South Western RHA had the lowest percentage in the later years – North East Thames had the highest with between 5% and 6%. Source: Technical Appendix, Table 3B. Income from SIFT/SIFTR and supra-regional specialties matter much more in the funding of Bristol acute hospital services – see below.

116. South Western RHA's capital allocations varied between 6% and 8%* of the total of all RHAs'; and between 6% to 8% of its main revenue allocation†.



* There were significant changes in RHAs' shares of capital allocations during this period. Source: Technical Appendix, Table 4A.

† Source: Technical Appendix, Table 4B.

(f) The resource allocation formulae and processes used by South Western RHA*

Sources and Structure

117. Evidence submitted to the Inquiry on methods used for resource allocation by South Western RHA between 1983-84 and 1988-89 consists of annual publications by the RHA on *Regional Allocations for 1983-84* (and 1984-85, 1985-86, and 1986-87) and *Financial Allocations and Policies* (1988 edition) for 1988-89[†]. This information is not as detailed as the cash limits exposition booklets. Other sources used were annual publications by *Bristol and Weston Health Authority Budgets* from 1987-88 to 1990-91; and *United Bristol Health Care (UBHT) NHS Trust Budgets* from 1991-92 to 1994-95. What follows is based on my expertise in interpreting the available evidence.

118. The structure of this section follows that used for national allocations: “top-sliced” revenue allocations for SIFT (and SIFTR), and supra-regional and regional services; and revenue and capital allocations by capitation.

SIFT (and SIFTR)

119. SIFT was top-sliced by the RHA⁸⁵. Details are given on the distribution of SIFT and supra-regional services for 1988-89 with payments to Bristol & Weston (68%), Southmead (18%) and Frenchay (7%)[‡]. A report of SIFTR allocations by RHAs for 1990-91⁸⁶ shows a similar pattern: hospitals in Bristol received 68% (the BRI, 47%), Southmead, 18%, and Frenchay 9%[§]. This policy continued until

* The brief is to: Outline the processes and formulae and used by South Western RHA to distribute resources between its constituent health authorities, and the sensitivity of the formulae to key variables.

[†] There are no regional papers on the period from 1989-90 to 1995-96.

[‡] For 1988-89 these were in £'000s: Bristol & Weston, 8,655; Frenchay, 833; and Southmead, 2,221; and 836 for the RHA (*Financial Allocations and Policies*, 1988 edition: pp 10-11). These are likely to have been reported as “protected provision” in 1985-86 and 1986-87 (*Regional Allocations for 1985-86*: pp 10-11; *Regional Allocations for 1986-87*: pp 10-11) as these show a similar pattern.

[§] Although there were movements of students away from the main teaching hospitals to general hospitals, the main teaching hospitals still kept most of the money. Often there was no payment to general hospitals.

new arrangements for funding SIFT for 1996-97 based on policies recommended by the Winyard Report⁸⁷.

Supra-regional and regional services

120. *Regional Allocations for 1985-86* (p1) shows supra-regional services to be top-sliced by the RHA. *Financial Allocations and Policies* (1988 edition: p34) states that, from 1988-89, that the only supra-regional service in the South Western Region would be the Neonatal and Infant Cardiac Surgery Service*.

121. *Financial Allocations and Policies* (1988 edition) identified six regional specialties and five regional services (p33)[†]. *Regional Allocations for 1984-85* (p 9)[‡] describe policies on financing recognised regional specialties and services. These were that initial developments would be funded for three years on a non-recurrent basis, after which time they would be financed from Districts in proportion to use made of these services. The subsequent reports identify most, but not all regional specialties and services[§].

122. *Regional Allocations for 1984-85* (p 9) estimates that the costs of cardiac surgery at the BRI, for three years from 1984-85 to 1986-87 to be £383,000 per annum (at 1984-85 prices). (As the funding of Neonatal and Infant Cardiac Surgery as a supra-regional service was introduced from 1985-86, no distinction is made between surgery of children and adults. This presumably covered all surgery.) The policy was that, for these three years, these services were to be funded by the RHA, and from 1987-88, this protection would cease, and these services were to be financed by Districts. Bristol and Weston was allocated

* This is shown as receiving an allocation as a special adjustment of £59,000 for that year (p10).

[†] *Regional Specialties*: Cardiac surgery, Plastic surgery, Thoracic surgery, Neurosurgery, Radiotherapy, Bone Marrow Transplant (Children), Renal. *Regional services*: Cytogenetics, Screening for Phenylketonuria, Neonatal Hypothyroidism, Sub-regional Drug Quality Control Service, Regional Secure Units for the Mentally Ill.

[‡] This policy is also restated in *Regional Allocations 1986-87* (p 15).

[§] *Regional Allocations for 1984-85* (p 9) announces protection for cardiac surgery at the BRI and secure units. *Regional Allocations 1985-86* does not include any information on regional specialties. *Regional Allocations 1986-87* (p 15) includes further provision for costs of cardiac services at the BRI, and renal services. *Financial Allocations and Policies* (1988 edition) (p 28) lists provision for: Cardiac surgery, Catheterisation, Bone Marrow, Renal, Plastic surgery, Neurosurgery (Regional Specialties); and Secure Accommodation, Cytogenetics and Clinical Chemistry (Regional services). Presumably those

£383,000 for “cardiac expansion” in 1984-85 (*Regional Allocations for 1984-85*: p 18). It is difficult to identify further specific payments cardiac surgery for later years and distinguish between the supra-regional Neonatal and Infant Cardiac Surgery and other cardiac surgery*. *Regional Allocations 1986-87* (Table 5, p18) shows significant funding of cardiac surgery from regional reserves from 1986-87 to 1988-89 (to 490 cases) and for an increase from 480 cases to 600/700 from 1986-87 to 1990-91. *Financial Allocations and Policies* (1988 edition) shows significant funding for an increase to 675 cases from 1988-89 to 1990-91:

Year	86-87 £'00s	87-88 £'00s	88-89 £'00s	89-90 £'00s	90-91 £'00s
<i>Regional Allocations 1986-87</i>					
To 480 cases	715	272	178	41	
480 to 600	750	750	750	750	
480 to 700	900	900	900	900	
<i>Financial Allocations and Policies (1988 edition)</i>					
To 675 cases			1135	1168	1149

123. Funding over three calendar years may naturally span four financial years. There may also be slippage so that funding indicated in, for example, 1986-87 might not take place that year. Nevertheless, these figures suggest that regional protection of cardiac services at the BRI was not limited to the three years as stated as the regional policy.

124. One problem in funding regional specialties in proportion to use was that the data on costs were inadequate. The costs being used for 1984-85 for Neurosurgery, Plastic surgery, and Thoracic surgery were based on estimates at Frenchay hospital in 1971-72! More generally costs estimated at one hospital were assumed to apply at others (*Regional Allocations for 1984-85*, p23)[†].

not mentioned were financed by Districts: Thoracic surgery, Neurosurgery, Radiotherapy, Screening for Phenylketonuria, Neonatal Hypothyroidism, Sub-regional Drug Quality Control Service.

* *Bristol and Weston Health Authority's Budget 1986-87* (pvi) does refer to costs of expansion to 480 cases per year £380,500) from the Region and an allocation for Neonatal and Infant Cardiac Surgery as a supra-regional service (£15,000). But it is difficult to identify the various funding streams for these services.

[†] The concern of regional policies was how to achieve reimbursement of actual costs. There was at this time no mention of establishing systems to create incentives for efficiency. In the USA, famously at this time Medicare had introduced such a system for Medicare patients in which hospitals were reimbursed at estimated average costs by Diagnosis-Related Group.

Main revenue allocations

125. The RHA's revenue formula is described in *Financial Allocations and Policies* (1988 edition: pp 28-29). This implies that the RHA essentially applied the national formula^{*}. The National Association of Health Authorities reported RHAs' policies on weighted capitation funding for 1993-93. This reports that the RHA was using the national formula (then based on changes to RAWP methods based on the RoR Report with a weighting for additional need by the under-75 SMR with a weighting of a half) and an additional weighting for "social deprivation" (not specified).
126. *Regional Allocations for 1984-85* (p7) reports changes to accounting for cross-boundary flows following the restructuring with Area Health Authorities (AHAs) being replaced by DHAs. These were based on estimating costs incurred in different hospitals and accounting for day patients in mental illness and renal services.
127. *Regional Allocations for 1984-85* (p23) comments on inaccuracies in statistics on cross-boundary flows[†]. There were substantial changes in measuring cross-boundary flows, which resulted in significant changes to District target positions for 1985-86 and 1986-87. It was intended to base costs of these flows using information from extending specialty costing.
128. *Financial Allocations and Policies* (1988 edition: p31) describes new policies to remove the adjustments for cross-boundary flows from the regional RAWP formula (and hence anticipating the changes made nationally with the introduction of the "internal market" from 1991-92). Under this system, adjustment to cross-boundary flows within targets would be replaced by planning agreements with payments being made directly by the purchasing district to the supplying district.

^{*} The national formula was then based on RAWP methods with a weighting for additional need by the all-age SMR with a weighting of one. An analysis is given of District's positions in terms of the ratios of actual expenditures to regional and national targets. As these differences simply reflect the RHA having an allocation below its target this further suggests that the RHA is using the national formula.

[†] for Cheltenham (for radiotherapy), for Somerset hospitals, and Devon districts (for mental health institutions).

This was introduced on a pilot basis for 1989-90 with cash being allocated to districts based on the historic flow of patients to have a neutral effect on allocations. From 1990-91 payments were made by purchasing districts to supplying districts for the estimated actual costs of treating patients of these flows⁸⁸.

Main capital allocations

129. From 1980, the RHA's policies for capital allocation followed national methods being based on weighted population and existing capital stock⁸⁹. The stock was revalued on a district basis in 1983⁹⁰ (following the replacement of AHAs with DHAs) and capital funds were allocated to 1994-95 based on that exercise. From 1994-95, the RHA was considering an approach that took account of populations (weighted by age, sex and SMRs) and land sales.

(g) Strengths and weaknesses of South Western RHA's processes*

130. From 1983-84 to 1994-95, each of the 14 RHAs used their own processes of resource allocation to their Districts. This included using their own formulae for calculating revenue targets, and deciding the pace of change of allocations towards targets by banding DHAs according to the distance of their allocations from their targets. From 1995-96, the 14 RHAs were reduced to eight, each was allowed to use its own formulae in determining district targets, but was required to ensure that no over-target district lost resources in "real" terms (and to limit redistribution to districts that were substantially below their targets)⁹¹. For the period of the Inquiry, there are thus two kinds of comparisons of methods used by South Western RHA: with those used by the Department and with other RHAs.

131. From the information supplied, it seems that the South Western RHA essentially applied the same methods in making allocations to its DHAs as the Department used in making allocations to RHAs. South Western RHA appears to

* The brief is to: Comment on the strengths and weaknesses of the processes used by South Western RHA for revenue, capital and development funding in respect of the policy objectives that they were intended to achieve.

have followed the various formulae used nationally (until 1989-90, and only made minor changes between 1990-91 and 1993-94). The RHA mirrored national methods in making capital allocations (but appropriately undertook its own estimates to value capital stock) and offered protection through top slicing for SIFT (and SIFTR) and supra-regional specialties. The RHA introduced its own method of protection for regional specialties.

132. There is relatively little information available on methods used by RHAs. Differences in practices from methods used by South Western RHA were:
- regional specialties were funded in the same way as the Department funded supra-regional specialties;
 - capital allocations were decided without using a formula (because of problems of valuing capital stock);
 - revenue was allocated resources for development that incurred substantial increases in revenue from the completion of new capital, or the appointment of a consultant.
133. The first point to make is that where RHAs followed national methods in making allocations to DHAs, adjustments to the population component of targets for teaching districts were much more significant than these adjustments were for RHAs. Unfortunately the details necessary for such a comparison are not supplied in South Western RHA's regional allocations. Analysis of the various adjustments for 1983-84 for North West Thames RHA, shows for Victoria DHA, its population element was £23m, adjustments for cross-boundary flows were £20m, and funding for SIFT and regional specialties were £10m⁹². For the same year for North West Thames RHA, the impact of cross-boundary flows on the population element of non-psychiatric acute inpatients was to reduce this by 13% [DOH 0011 0036 and 0038] and its SIFT allocation was 5% of its target allocation (including its various adjustments) [DOH 0011 0044 and 0046]. The impact of these adjustments would, however, be much greater in the small (in terms of population) London teaching districts than for Bristol and Weston. One comparison we can make for South Western RHA is the significance of SIFT (and protected services) in 1988-89: this was about 8% of the total revenue cash limit of Bristol and Weston; and 2% of that of the RHA⁹³.

134. In general applying methods to smaller authorities inevitably means that methods become less robust: South Western RHA identified this problem following the abolition of AHAs (following restructuring in 1982); with concerns over year-to-year variations in estimates of SMRs at district level and accounting for costs of cross-boundary flows⁹⁴. One of the problems is that large sums of money are involved: for example, a reduction of 1% in the budget of Southmead in 1984-85 meant a change of nearly £0.4m. Hence the effect of introducing specialty costs which reduced Southmead's target by over 1% is described "quite significant"⁹⁵, but that would seem to be well within the margins of error in estimating targets. This was, of course, recognised by banding DHAs in making allocations.
135. From the information supplied, methods used by South Western RHA were sound. In particular, their policy of funding regional specialties is preferable, in terms of equitable funding, to common practices by other RHAs and that used by the Department for funding supra regional services. There are pros and cons over the use of formulae for capital and special provision for new developments. What comes across as the driving force of the RHA is a commitment to achieving equity between DHAs. Two other important strengths of the RHA are policies prior to 1982-83 and policies after 1989-90 (the period for which we have regional papers on resource allocation).
136. The regional target position in 1983-84 shows that allocations ranged from 92% (Torbay) to 104% (Southmead) of their targets⁹⁶. This is a very narrow range: for example, analysis of the position of the larger Area Health Authorities in England in 1980-81 showed their allocations ranged from 125% to 75% of targets⁹⁷; and a survey of eight RHAs in 1990-91 reported ranges from 90% to 132%⁹⁸. To have such a narrow range in the resource positions of districts in South Western RHA, indicates that earlier policies must have been organised to achieve equity. From 1989-90⁹⁹, the RHA looked to the future by introducing cross charging to replace cross-boundary flows thus anticipating changes of the internal market.

137. The only caveat to this rosy account of resource allocation by South Western RHA is Mrs Korner's observation in 1985 on her experience as a DHA chair¹⁰⁰:

'I and my colleagues learnt that, when it came to investment, there were two kinds of money – "our" and "their" money. "Our" money came from internal sources – to tease this money out of revenue budget was difficult, requires foresight, planning, co-operation of staff and fine judgement. "Their" money, i.e. regional capital, was totally unpredictable in its timing and size, and its allocation seemed to many to depend on luck, the marginality of the constituency, on the possibility and actuality of scandal and on the personal influence of the chairman. In an attempt to attract some of this [free regional money] we ... gambled for all or nothing, the schemes were extravagant in conception and often in revenue consequences.'

(h) Impact and consequences of South Western RHA's resource allocation policy*

Sources and structure

138. Sources for the analysis given here are in the Technical Appendix (Tables 5, 6, and 7).

139. Section (f) showed that in the mid-1980s, there was limited "real" growth in the total resources allocated to South Western RHA. This section shows how that put pressure on the resources of acute services in Bristol from:

- The South Western RHA's subregional allocations to Bristol and Weston DHA to achieve equity between DHAs in the region; and
- Bristol and Weston DHA setting budgets for acute services to increase spend on "priority" services (i.e. other than acute).

Bristol and Weston DHA

* The brief is to: Describe the practical impact and consequences of South Western RHA's resource allocation arrangements on availability and access to funds by the Bristol and Weston Health Authority and the Avon Health Authority, relative to other constituent health authorities.

140. The Bristol and Weston Health Authority *Budgets* for each financial year between 1983-84 and 1987-88 reported the position of its allocation in relation to its target with observations on causes of changes on either its expenditure or its target:

- 1983-84: 1.7% over its revenue target [UBHT 0339 0058].
- 1984-85: 8.8% over its revenue target; following changes in accounting for cross-boundary flows; costing these flows on the basis of inpatient days -- in place of cases (5.3%) ; and more accurate costing of radiotherapy (1.6%) [UBHT 0339 0058].
- 1985-86: 7.9% over its revenue target; the most significant change was designation of Neonatal and Infant Cardiac Surgery as a supra-regional specialty [UBHT 0339 0228-29].
- 1986-87: 4.7% over its revenue target; attributed to more accurate costing of services provided by Bristol and Weston and changes to cross-boundary flows with other authorities [UBHT 0339 0356-57].
- 1987-88: 1.5% over its revenue target; again attributed to more accurate costing of services provided by Bristol and Weston and changes to cross-boundary flows with other authorities [UBHT 0339 0356-57].

141. Figure 4* shows changes in the total revenue funding of Bristol and Weston DHA between 1983-84 and 1989-90†. This is indexed with the revenue allocation for 1983-84 at 100 (with allocations for later years estimated at 1983-84 prices using the HCHS deflator). This shows a grim position for the DHA, wholly consistent with its being an over-target district in a RHA receiving no “real” growth. These revenue Figures include funding of SIFT / SIFTR and protection for supra-regional services and regional services. There was a small reduction in the cash allocation for 1985-86, which meant a fall in its “real” value of about 5%. Over the next three years the allocation essentially remained unchanged in “real” terms. Real growth began in 1989-90.

* Source: Technical Appendix, Table 5, Column 1.

† The budget for 1990-91 is not comparable with figures for the earlier years as the system of allocation changed to one based on cross charging, in preparation for the introduction of the internal market.

142. The funding of supra-regional services accounted for 0.2% of total revenue funding of Bristol and Weston DHA in 1984-85. The introduction of funding for Neonatal and Infant Cardiac surgery in 1985-86 increased this to 1.2%, and thus presumably, offset the fall in funding in “real” terms for that year by about 1%. After 1985-86 supra-regional services accounted for 0.5% to 0.8% of total revenue funding of the DHA (until 1990-91)*.
143. Capital spending as a percentage of total revenue spending varied between 3% and 6%†. The actual funds spent varied more than the RHA’s allocations because of slippage in building and transfers of funds between revenue and capital.

* Source: Technical Appendix, Table 5, column 3.

† Source: Technical Appendix, Table 5, column 2.

Figure 4: Changes in real revenue allocations to Bristol & Weston

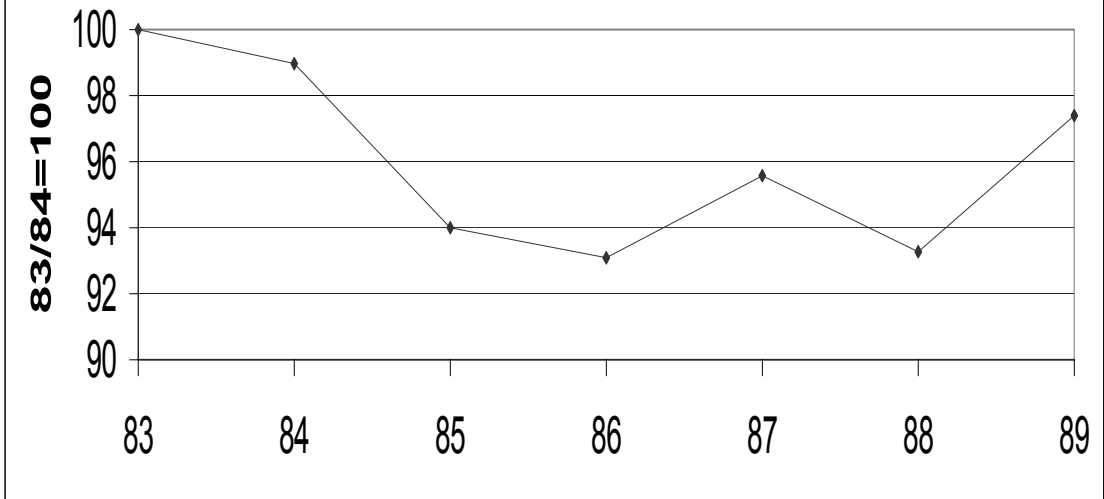
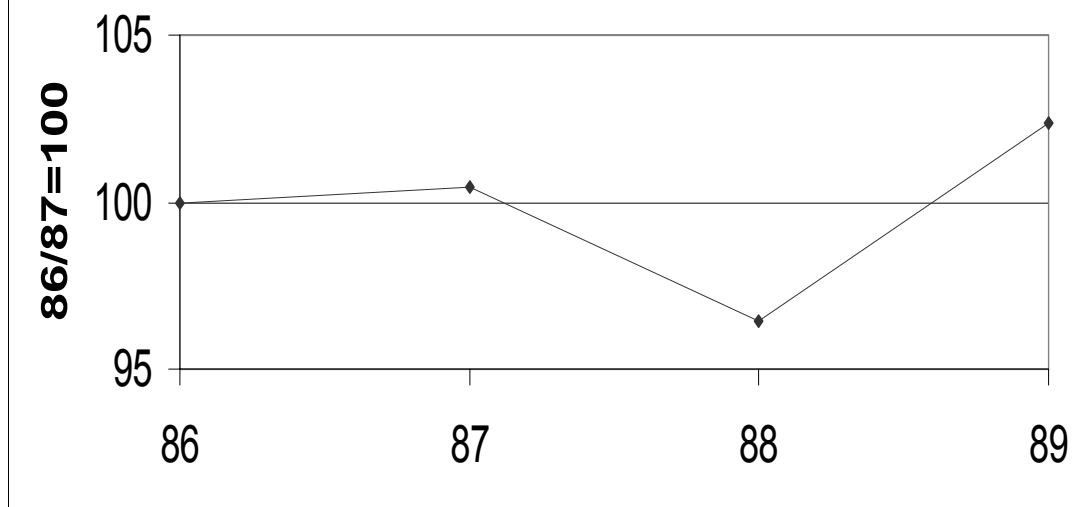


Figure 5: Changes on real revenue spend by Bristol acute services



Acute services in Bristol

144. Regional policies on resource allocation are concerned with funding DHAs and not setting priorities within DHAs on service development. Over the 1980s, DHAs, were required by the NHS planning system to consider developing “priority” services, which were other than acute. Various specific developments were considered in the Budget for 1984-85 from a strategic review of services: for the elderly, mental illness, psychogeriatrics, mental handicap [UBHT 0339 0060]. A costed programme of developments was presented in the Budget for 1985-86 for 1985-86 (£1.6m) and 1986-87 (£1.8m): about 2% of the DHA’s total revenue budget [UBHT 0339 0231-232]. Costs of development of “priority” services were budgeted at £1.1m for 1986-87 [UBHT 0339 0333], £1.2m for 1987-88 [UBHT 0339 0479], and £0.6m for 1988-89 [UBHT 0339 0595]. These developments took place within the constrained budget of the DHA and hence imply that acute services would have been subjected to even greater financial pressure than the DHA.
145. It is difficult to derive a series of comparable data on expenditure on acute services in Bristol over the inquiry period*. Data are readily available on a (relatively) consistent basis between 1986-87 and 1989-90 for the Central Unit only, which includes Bristol acute services†. Changes in expenditure of the Central Unit have been indexed with the revenue allocation for 1986-87 at 100 (with allocations for later years estimated at 1986-87 prices using the HCHS deflator). Figure 4 shows that by 1986-87, the DHA had experienced a reduction of about 7% in “real” terms from its revenue position in 1983-84. Figure 5 shows that the “real” value of spending on the Central Unit stayed the same for 1987-88 as compared with 1986-87, then was reduced by about 4% and increased by about 6% in the following years. The funding of supra-regional services accounted for

* This is because of continuing changes in the composition of budgets between the district and the central unit prior to 1986-87 [UBHT 0339 0369]; the creation of a new Bristol Provider Unit in 1990-91 [UBHT 0339 0906]; and the creation of the UBHT in 1991-92. UBHT accounts do not report data by hospital. Very few details are given for 1991/92 [UBHT 0338 0001-17] – the first year of the new Trust. (Data are reported by directorate for 1992-93 to 1994-95.)

† This includes Unit General Management and Unit Services (including medical staff and the Avon ambulance service); and the following sub-units, BRI, Radiotherapy, Bristol Eye, Bristol Dental, Bristol Children’s and Maternity, and Medical Sciences.

between 1.1% and 1.8% of total revenue funding of the Central Unit between 1986-87 and 1989-90*.

146. Cost data are available for three other centres providing Neonatal and Infant Cardiac Surgery to compare with Bristol in terms of financial pressures: the John Radcliffe Hospital (Oxford), Southampton General Hospital, and Guy's Hospital (London). The source for these data are returns on teaching hospital costs submitted to, and assembled by, Mr JM Rushfirth, who in the 1980s published an annual series of these costs¹⁰¹. Data have been analysed for the BRI, and these three other hospitals for total expenditure[†] from 1983-84 to 1986-87, with expenditure at each hospital indexed with the expenditure for 1983-84 at 100 (with allocations for later years estimated at 1983-84 prices using the HCHS deflator). Figure 6 indicates that the BRI enjoyed limited "real" growth for two years and growth of about 5% for 1986-87. This is similar to Southampton General Hospital. In contrast, the "real" expenditure of the John Radcliffe Hospital fluctuated with small gains and losses and Guy's Hospital experienced losses in real terms. It is difficult to reconcile the expenditure reported for the BRI in these returns with the data reported in the annual budget of Bristol and Weston DHA[‡] (or for the BRI subunit[§]). It is plausible to assume that most of these centres were subject to the kinds of financial pressures in the 1980s as described above for Bristol and Weston DHA, and the Central Unit.

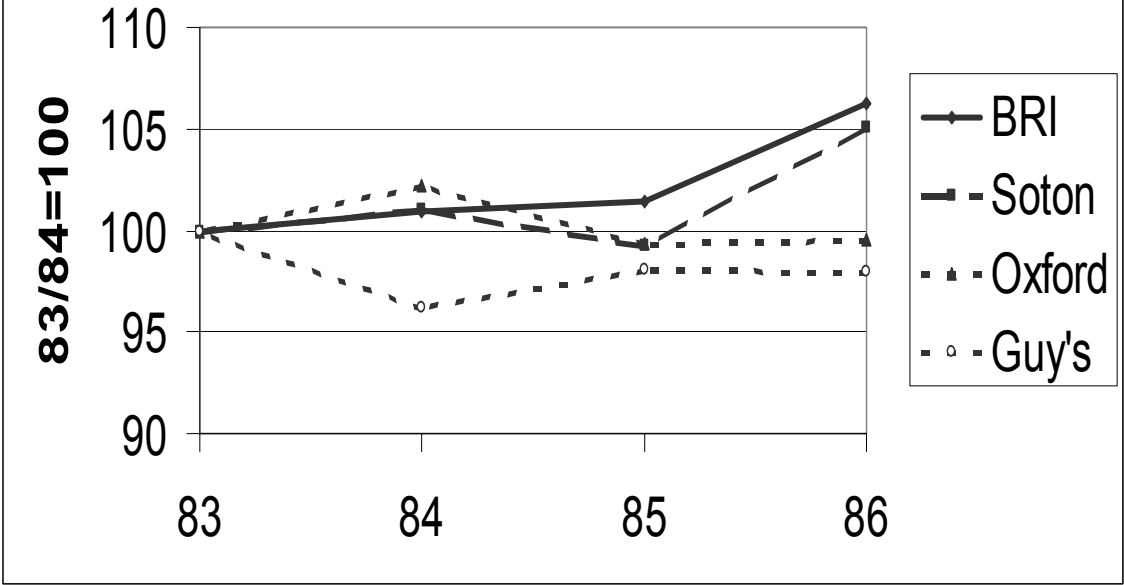
* Source: Technical Appendix, Table 6, column 2.

† On In-patients, Out-patients and Accident & Emergency.

‡ In 1985-86, for example, the budget for Bristol and Weston DHA was lower in cash terms than for 1984-85: reducing from £84,004,000 [UBHT 0339 0050] to £83,760,000 [UBHT 0339 0215]. In contrast, the total expenditure reported for the BRI in the Rushfirth returns increased by 5% in cash terms: from £21,662,000 in 1984-85 to £22,843,000 in 1985-86.

§ For 1986-87, for example, the Rushfirth returns report total expenditure of £25,575,000 (£18,873,000 on In-patients, £5,698,000 on Out-patients, £1,004,000 on Accident & Emergency); the budgets for the BRI subunit were £11,358,800 (approved) and £11,981,100 (revised) [UBHT 0339 0513]. These budgets, however, do not cover unit managed services that include a variety of services, of which the most important in terms of expenditure (revised budgets) were medical staff (£7,459,530) and ambulance services (£4,394,030) [UBHT 0339 0513 to 0517].

**Figure 6: Changes in real total spend at
Bristol, Southampton, Oxford & Guy's**



(i) Impact of NHS reforms on resource allocation and price determination *

Resource allocation

147. The NHS model of the internal market of the 1990s developed the proposals of *Working for Patients*¹⁰². The crucial structural shift was from hierarchy to a provider market with the following radical changes:

- Health authorities lost their role of running providers to become “purchasers”, which were responsible for planning their needs of their populations and contracting with independent providers for this care.
- Health authorities continued to be financed by a capitation formula, but this formula now determined a district’s target allocation simply by its resident population[†].
- GPs could opt to become fundholders, and take responsibility for a budget and contracts for a subset of HCHS over which they made decisions on initiating treatment (GP prescribing, referrals to outpatients, and elective surgery)
- The finance of providers was transformed. In the model of command and control, each provider’s income was determined by its district. In the internal market, this income was the aggregate of payments from all purchasers.
- Providers operated within a market, so that, in principle, if a purchaser were unhappy with a service from its local provider (on cost, quality, waiting times), the purchaser could shift the contract to another provider who offered a better service.

148. The actuality of the internal market was rather different from the image suggested by *Working for Patients*. The beguiling promise was that “money would follow the patient”. But, this could not mean that providers would be paid more automatically if they treated more cases, as the NHS budget continued to be

* The brief is to: Consider the impact of the introduction of the NHS internal market on resource allocation and price determination, including the availability of information on national average unit costs of acute sector health services.

[†] As authorities ceased to be responsible for running providers there was no need to use providers’ catchment populations and account for cross-boundary flows.

subject to a cash limit, which was allocated to authorities using a capitation formula.

149. Enthoven, who was the intellectual source of the ideas of the internal market¹⁰³, recently expressed his disappointment with what had been achieved in terms of the failure to develop competition between providers¹⁰⁴:

‘If one were to rank the degree of achievement of free market forces on a scale of zero to 10, with zero representing complete central planning and top-down control and 10 representing the regulated but relatively free American commercial economy, I would say that the internal market in the NHS got somewhere in the range of 2 to 3 for a year or two, that is very limited market forces, and then fell back to more central control.’

150. Royce¹⁰⁵ pungently described politicians’ attitudes to competition in the internal market as reminiscent of those of the dodo’s pronouncement in *Alice through the Looking Glass** – “All have won, and everyone must have prizes”. Enthoven emphasises the problem of that competition was neutered to avoid threats of “destabilisation”. Thus the market was managed so that hospitals that lost income did not suffer such losses as to de-stabilise their capacity to maintain services for their other purchasers. This meant that much of the dynamic of gains and losses in typical commercial markets was dissipated. Hence, despite radical changes that were intended to generate incentives that would reward hospitals for doing more work by creating opportunities to earn extra income, the system remained so constrained that there were few opportunities for this.

151. Another disappointment for Enthoven was the supine role of Districts as “purchasers”. The structural separation of the roles of purchaser from provider offered the opportunity for districts to focus on needs of their populations and ignore implications for providers¹⁰⁶. That is, a district could decide it did not want a service in its local provider without being encumbered by the worry of what this would mean for managing the provider. Districts stripped of their provider role were, however, an unexciting residual body compared with the new NHS Trusts

* Only a pedant would point out that this was in *Alice in Wonderland*.

and GP fundholders. Districts' new role as purchasers was not even described in *Working for Patients*: there is no Chapter on districts. Nor was this lacuna remedied in the subsequent development of the internal market. Thus Enthoven identified a fundamental failure to develop the positive nature of districts as purchasers: '... few, if any, defined and understood the role of Health Authorities as purchasers. There wasn't a clear definition and direction as to what purchasers were supposed to do...'. In the absence of a positive role, districts developed a passive one with no countervailing power to that of the new NHS Trusts:

'...Trusts could make unneeded investments in new services and make the Health Authorities pay for them. Trusts in financial trouble could get "transitional help" without clear and enforceable plans to make the needed adjustments. The NHS Executive put pressure on Health Authorities to buy services from Trusts in deficit status.'

Price determination

152. The general principles of costing for contracting in the NHS internal market were¹⁰⁷:

- Prices should be based on actual costs;
- Cost should be established on a full cost basis;
- There should be no planned cross-subsidisation between specialties, procedures or contracts.

153. A survey by the National Steering Group on costing in 1992 found that providers used different approaches to costing, inconsistent definitions of services, and measured activity in different units and inaccurately¹⁰⁸. Despite recommendations by the NHS Management in 1993 to develop methods of costing below that of the level of specialty, a survey of all acute providers in the West Midlands in 1994, found that two-thirds felt that their activity information systems were inadequate for that purpose. Ellwood reported difficulties in following recommendations to use Health Care Resource Groups (HRGs) to cost services within specialties in 1995-96. She concluded that: "Cost-based pricing has failed to provide appropriate price signals to purchasers in the first five years of the

internal market: prices neither accurately reflected resources consumed, nor enabled valid price comparisons between providers”¹⁰⁹.

154. There were various problems with the NHS Executive’s guidance on cost-based pricing. Ellwood suggests that these assumed that purchasers used prices to choose the lowest cost provider which was at variance with the way contracts were actually negotiated to develop long-term relationships. She points out that since each host HA is often purchasing the vast majority of its local provider’s services, there seems to be little benefit from the transaction costs of seeking greater precision in defining services and seeking to cost these accurately. Furthermore accurate costing requires reflecting local practices and conflicts with comparability, which requires standards being applied in a consistent way.
155. Pricing in the NHS internal market failed to develop the standards required by Enthoven¹¹⁰ to form a crucial building block for an effective competitive market. But the NHS internal market evolved with competition having a minimal role: Enthoven’s competitive model was not sought by successive Secretaries of State¹¹¹. The way the NHS internal market evolved required costs that were neither accurate nor comparable.

Conclusions

156. The funding of acute services in Bristol may be divided into two periods: before and after the changes implemented for the internal market: the first period was from 1983-84 to 1988-89; the second from 1989-90 to 1995-96. During the first period there was little “real” growth in the total available for HCHS for England (measured using the HCHS deflator). Although the South Western RHA was below its revenue target, as there was virtually no “real” growth, in effect its resources remained unchanged in “real” terms. This meant that Bristol and Weston DHA was also constrained: it was always above its revenue target (although its position fluctuated) and at best had no “real” growth, or reductions in “real” terms. Acute services in Bristol were under similar pressure. During the second period, the total available for HCHS for England experienced substantial “real” growth. Although, because of various changes it is not possible to trace

their impacts to make comparisons for the RHA, DHA, and acute services, this easing of pressure in the total is likely to have trickled down to acute services in Bristol.

157. Thus in one sense the highly elaborate processes of resource allocation that determined allocations of RHAs, DHAs, and acute services are less important in understanding the financial pressures on acute services in Bristol than what was happening to the national levels of funding. The effect of these processes was to heighten those pressures during the period of financial constraint of the 1980s. Resource allocation to authorities based on the relative needs of their populations put pressure on districts that managed teaching hospitals simply because their populations made higher-than-average use of acute services. Budgeting by DHAs was designed to develop priority services that were other than acute.

158. Over time the national and subregional processes of determining targets became more complicated than originally proposed by the RAWP Report. Although most revenue was allocated with reference to targets, the adjustments for exceptional items increased. The RAWP Report proposed one main exception for medical and dental SIFT. Whereas dental SIFT is directed at costs of teaching dental students, medical SIFT (and SIFTR) now looks to have been simply a means of ameliorating the pressures on teaching districts in general, and London in particular. Another important exception, introduced outside the reviews of national policies on resource allocation was that for supra-regional services at agreed volumes and agreed costs. This allowed inequitable use of services on the ground that this protection would concentrate provision in a few centres and improve outcomes. Each of these adjustments was important for Bristol. Bristol's teaching hospitals received nearly 70% of SIFT allocated to the RHA, and the BRI nearly 50%. SIFT accounted for about 8% of the total revenue budget of the DHA. The funding of supra-regional services accounted for between 1.1% and 1.8% of revenue spending on acute services in Bristol. Another obstacle to equitable funding of services provided by teaching hospitals was that the postgraduate teaching hospitals funded directly by the Department were not brought into the internal market until 1995-96, before that their services were free to residents of DHAs.

159. There are many difficulties in developing good measures of an equitable basis for the distribution of capital and revenue resources to health authorities. These include weighting populations for age (and sex), and additional needs; higher costs of employment in different parts of the country (in particular London); and accounting for cross-boundary flows (prior to the introduction of the internal market); valuing needs for capital and existing stock. Arguments continue over how these ought best be done. The main focus has been on the weight to be given to the SMR and accounting for additional needs (often referred to as “social deprivation”). Attempts to answer these questions by empirical investigation, however sophisticated, still mean that these remain essentially contested. The problems of accounting for cross-boundary flows shifted to the problems of pricing services in the internal market. An advantage of the separation of purchaser from provider was that this was seen as a provider problem and not a complication in equitable funding of populations. But during the Inquiry period, it seems that little progress had been made in developing a sound basis of comparative costs.
160. Although the internal market introduced many changes it did not introduce a system in which “money followed the patient” so that hospitals simply were paid more for treating more cases. DHAs were allocated fixed cash limits for their populations based on their relative needs, rather than volumes of services. Thus the problems of financing increases in services continued. The national funding of supra-regional services was exceptional before and after the internal market in funding these at agreed volumes and agreed costs. Some RHAs used this policy for funding regional specialties, but the policy of South Western RHA was different and consistent with seeking equity. This policy protected services for a three-year developmental period after which services were charged to districts according to usage.
161. In giving an overview of national and regional policies for resource allocation, the impression is one of constant search for better methods of achieving equity: nationally with various reviews of weighting for needs, and accounting for cost differences; and subregionally, with the focus on accounting for cross-boundary

flows. Two other subjects have been reviewed, but with much less rigour and publicity: medical SIFT (and SIFTR) and capital and capital charges. A third, the funding of supra-regional services does not appear even to have been subject to review.

Guide to Acronyms

AGRA Report	Report of the Advisory Group on Resource Allocation
AHA	Area Health Authority
BRI	Bristol Royal Infirmary
DHA	District Health Authority
DHSS	Department of Health and Social Security
FPC	Family Practitioner Committee
HCHS	Hospital and Community Health Services
OPCS	Office of Population Censuses and Surveys
RAWP Report	Report of the Resource Allocation Working Party
RHA	Regional Health Authority
RoR Report	Review of the Resource Allocation Working Party Formula: Final Report by the NHS Management Board
SFRs	Standardised Fertility Ratios
SIFT	Service Increment For Teaching
SIFTR	Service Increment For Teaching and Research
SMR	Standardised Mortality Ratio
UBHT	United Bristol Healthcare NHS Trust

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