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**Expenditure on the NHS
During and
After the Thatcher Years:
Its Growth and Utilisation**

by
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and
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DISCUSSION PAPER 113

EXPENDITURE ON THE NHS DURING AND AFTER THE THATCHER YEARS

Its Growth and Utilisation

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ABSTRACT

Has government expenditure on the National Health and Personal Social Services increased significantly in real terms over the past decade? If so, where has this growth in expenditure been utilised? This paper investigates claims of real increases in expenditure by examining trends in total expenditure on the NHS between 1979 and 1992, and disaggregating these trends to concentrate on different sectors, the influence of changes in NHS personnel, the revenue/capital split and the geographical distribution of expenditure increases.

The total cost of the UK NHS has increased from approximately £9.2 billion in 1978/79 to £37.4 billion in 1991/92. Adjusting this figure to account for general inflation shows a real increase of 50.4 per cent over this period. This gives a reflection of the increased cost of the NHS to the UK economy. However, adjusting the increases to account for changes in NHS pay and prices shows a smaller increase, of about 22 per cent over the period, an average annual increase of around 1.5 per cent. As NHS costs are taken into account, this measures what the NHS is able to buy with the increased resources.

Increases in expenditure have not been evenly distributed between different sectors. The smallest relative increases have been in the hospital sector, which have absorbed a decreasing proportion of overall NHS and PSS expenditure over the period. The relative restriction on hospital budgets during the 1980s contributes greatly to the public perception of a parsimoniously funded health service. Expenditure on community health services has increased by the greatest proportion over the period, but this is still a small, though increasing, proportion of overall expenditure. The family health services budget (which funds primary care) has remained relatively stable as a proportion of overall expenditure over the 1980s.

This means that significant real increases have taken place. This is due largely to increases in general practitioner and other staffing. Between 1980 and 1991 the number of GPs increased by around 19 per cent, with average list sizes decreasing from 2,247 to 1,918. In addition, GPs have increasingly employed nursing and other support staff. There has also been increasing expenditure on pharmaceutical services (the government's net expenditure on pharmaceuticals has increased by around 47 per cent over the period 1978-79 to 1991-92). Finally, expenditure on personal social services has increased at around the same rate as overall health and PSS expenditure.

The NHS is a labour intensive service, and this means that changes in personnel have major expenditure implications. Over the period studied, numbers of whole-time equivalent medical (particularly senior medical) and nursing staff increased steadily, and these staff received significant real increases in salary levels. There were also increases in the number of professional and technical staff and administrative and managerial staff. Numbers of whole-time equivalent administrative and clerical staff increased from 105,430 in 1980 to 129,716 in 1990, ie by around 23 per cent. There were however significant reductions in numbers of directly employed works professional, maintenance and ancillary staff, due to government policies of contracting out these services. The resource consequences of the apparent shift towards relatively high paid staff are substantial, and if these trends continue the overall wage bill for the NHS will continue to increase considerably even if staff numbers do not.

The majority of NHS expenditure is current expenditure, primarily on salaries and wages, with capital expenditure representing around 5-6 per cent of total NHS expenditure in England over this period. Geographical distribution of hospital and community health services expenditure has also changed relatively little, despite the implementation of the RAWP formula for HCHS

in England and similar formulae subsequently and elsewhere in the UK. No attempt has yet been made to equalise primary care spending using a RAWP-type allocation formula. This is surprising given the government's emphasis on the integration of primary and secondary care and the primacy given to the services managed by general practitioners.

The 'Waiting List Initiative' and more recent government pledges in the 'Patients' Charter' were aimed at reducing waiting times, particularly the number of long waits, with guarantees that no-one should wait more than two years for a procedure. This goal has been achieved but, as ever, supply creates demand in the absence of agreed clinical practice guidelines and the numbers waiting have, as a consequence, grown to over one million. This policy concentrates on activity, which is an unsuitable goal and an unsuitable measure of success. In allocating resources to the NHS, as in all other policy areas, the appropriate target should be efficiency. Increasing activity, where this activity is often of unproven effectiveness is inefficient and inappropriate.

The level of public expenditure devoted to the National Health Service is largely a political decision - the overall budget, as in all other departments, is determined by the political bargaining of the annual public expenditure round. The settlement for 1994-95 includes a real funding increase and meets the 1992 Conservative election pledge, provided the Treasury estimates of inflation are correct (which is rare!). However, to achieve efficiency in the NHS, expenditure increases must be directed to areas of proven cost-effectiveness. This goal would be assisted by publication of more detailed breakdowns of NHS expenditure increases and more economic evaluation of new and existing health care programmes. In future there will be increasing pressure on limited NHS resources due to demographic change and technological advance. The vague ways in which NHS expenditure is monitored and "value for money"

determined will have to be replaced by more sophisticated monitoring of spending and the provision of cost effectiveness data to ensure society's scarce health care resources are used effectively. There is evidence of considerable scope to improve the efficiency of resource allocation in the NHS and this may best be achieved by the 'leverage' of parsimonious funding.

INTRODUCTION

Expenditure on National Health and Personal Social Services is the subject of frequent and polemic debate in the United Kingdom. During the May 1992 general election campaign the government repeatedly claimed that funding of the NHS had increased considerably in real terms since 1979, with real expenditure increases of approximately 50 per cent (see Table 1). The Conservative Party manifesto in 1992 pledged to continue this trend, and "year by year, increase the level of real resources committed to the NHS" (Conservative Party 1992). The definition of a "real increase" is however not specified, and such claims are regularly challenged. For instance in a similar debate in the mid-1980s David Owen, then leader of the Social Democratic Party asserted that the Government were deliberately misleading the public with claims of the level of expenditure, by failing to accurately account for cost increases in the NHS (Harrison and Gretton 1986).

The purpose of this paper is to investigate these conflicting views by examining trends in total expenditure on the NHS between 1979 and 1992, and disaggregating these trends to concentrate on different sectors, the influence of changes in NHS personnel, the revenue/capital split and the geographical distribution of expenditure increases. Finally, an attempt will be made to identify the areas where funding has increased and declined, and relate these to various factors such as demographic and technological change and policy objectives.

1 TOTAL EXPENDITURE ON THE NHS 1979-92

UK National Health and Personal Social Services expenditure has increased from approximately £9.2 billion in 1978/79 to £37.4 billion in 1991/92 (Table 1). This trend has continued to 1992/93, with expenditure of £41 billion. For analysis this nominal figure must be adjusted to allow for inflation and thereby calculate a real expenditure figure (possible only to 1991/92). Government publications generally adjust expenditure by the GDP deflator, which allows for general price increases throughout the UK economy. Using this measure reveals an overall increase in expenditure of 50.4% (Table 1). This forms the basis of government claims of large increases in real expenditure.

This figure measures the cost of the NHS to the UK. However, it does not accurately measure what the NHS can buy, as goods and services purchased by the NHS are very different from those consumed by the economy as a whole. Costs of these goods and services, particularly staff salaries which account for the majority of NHS costs (approximately 70% of Health Authorities' expenditure (DH 1992)), generally increase at a rate in excess of general inflation. If the inflationary effects of changes in NHS pay and prices are removed from expenditure trends since 1979, a smaller, but still significant increase in real (volume) expenditure is revealed, of about 22% over the period (Table 1), an average annual increase of 1.5% per year over the 14 year period.

Table 1 UK National Health and Personal Social Service Gross Expenditure 1978/79 to 1992/93 (£ billion)

Year	Total Expenditure (£bn)	Annual Percentage Increase	Real ¹ Expenditure (£bn) (1991-92 prices)	Annual Percentage Increase	Volume ² Expenditure (£bn) (1990-91 prices)	Annual Percentage Increase
1978/79	9.2	-	24.9	-	30.7	-
1979/80	11.1	20.7	25.7	3.3	30.7	0.1
1980/81	14.1	27.0	27.6	7.4	30.5	-0.8
1981/82	15.8	12.1	28.2	2.3	31.6	3.6
1982/83	17.2	8.9	28.7	1.6	32.3	2.2
1983/84	18.3	6.4	29.1	1.7	32.7	1.2
1984/85	19.6	7.1	29.7	1.9	33.1	1.2
1985/86	20.7	5.6	29.7	0.1	33.2	0.4
1986/87	22.3	7.7	31.1	4.4	33.4	0.8
1987/88	24.5	9.9	32.3	4.1	33.9	1.3
1988/89	27.0	10.2	33.2	2.7	33.8	-0.3
1989/90	29.5	9.3	34.1	2.6	34.5	2.0
1990/91	33.1	12.2	35.4	3.9	36.0	4.5
1991/92	37.4	13.0	37.4	5.6	37.4	3.9
1992/93	41.0	9.6	39.3	5.1	-	-
Overall Percentage Change 1978/79 to 1991/92	305%		50.4%		21.96%	

(1) Cash figures adjusted to 1991/92 price levels using the GDP deflator

(2) Cash figures adjusted to 1991/92 price levels using the Hospital and Community Health Services Pay and Prices deflator.

Source: Public Expenditure Analyses to 1995-96, Treasury 1993

Both deflators can be regarded as ways of measuring 'real' changes (as opposed to nominal cash changes). The first measure however is aimed at assessing the cost of the NHS to the UK economy in terms of spending opportunities foregone, whereas the second more accurately assesses the position of the NHS budget holder, and scope for increasing the numbers of people employed or equipment purchased within the NHS (Harrison and Gretton 1986).

2 EXPENDITURE BY SECTOR

Increases in expenditure on the NHS have not been evenly distributed between the different sectors, as shown in Table 2. The smallest relative increases have been in the hospital sector, which has absorbed a decreasing proportion of overall NHS and PSS expenditure over this time period. Applying the proportions in Table 2 to the expenditure levels shown in Table 1 suggests that in volume terms (deflating nominal expenditure by the NHS pay and prices index) hospital expenditure has risen by 11.6% over the 14 year period, i.e. an average annual increase of 0.8%. This relative restriction on hospital budgets during the 1980s contributes greatly to the public perception of a parsimoniously funded health service. Despite restrictions on hospital funding, in-patient and out-patient throughput has increased over the period, as detailed in Section 6, suggesting that real and considerable "efficiency savings" have been achieved.

Expenditure on community health services has increased by the greatest proportion over the period, and is consuming an increasing proportion of overall expenditure (see Table 2). Applying the expenditure figures from Table 1 to these proportions suggests an increase of 79% in real (volume) expenditure over the period, an average annual increase of around 6%.

This is still however a small proportion of overall expenditure, so increases are on a much smaller base than hospital or family health services. Increases are the result of policy changes emphasising care in the community and the need for community health services as hospital lengths of stay are reduced.

The family health services (FHS) budget, as a proportion of overall expenditure has remained relatively stable over the period (see Table 2). This means the budget has increased in volume terms by approximately 32% over the period.

Figure 1 shows the breakdown of non cash limited family health services expenditure in England in 1991/92 (source Treasury 1993). Over the period 1978-79 to 1991-92 gross expenditure on these services has increased by 52 per cent in real terms, as adjusted by the GDP deflator (Treasury 1993). This is the equivalent of approximately 23 per cent in volume terms (adjusting by the NHS pay and prices deflator).

The largest increase in FHS expenditure is in the general medical services sector, which in England has increased by 79 per cent (adjusted by GDP, Treasury 1993) or 45 per cent (adjusted by NHS pay and prices). This is partly the result of increases in general practitioner (GP) and other staffing since 1979. In 1980 in England there were 21,812 unrestricted general medical practitioners (DH 1992), with an average list size of 2,247 (OHE 1992). By 1991 this had increased to 25,862 GPs (DH 1992), an increase of around 19 per cent, with the average list size decreasing to 1,918 (OHE 1992). In addition, GPs have increasingly employed nursing and other support staff such as health visitors, with primary care becoming the function of multidisciplinary teams.

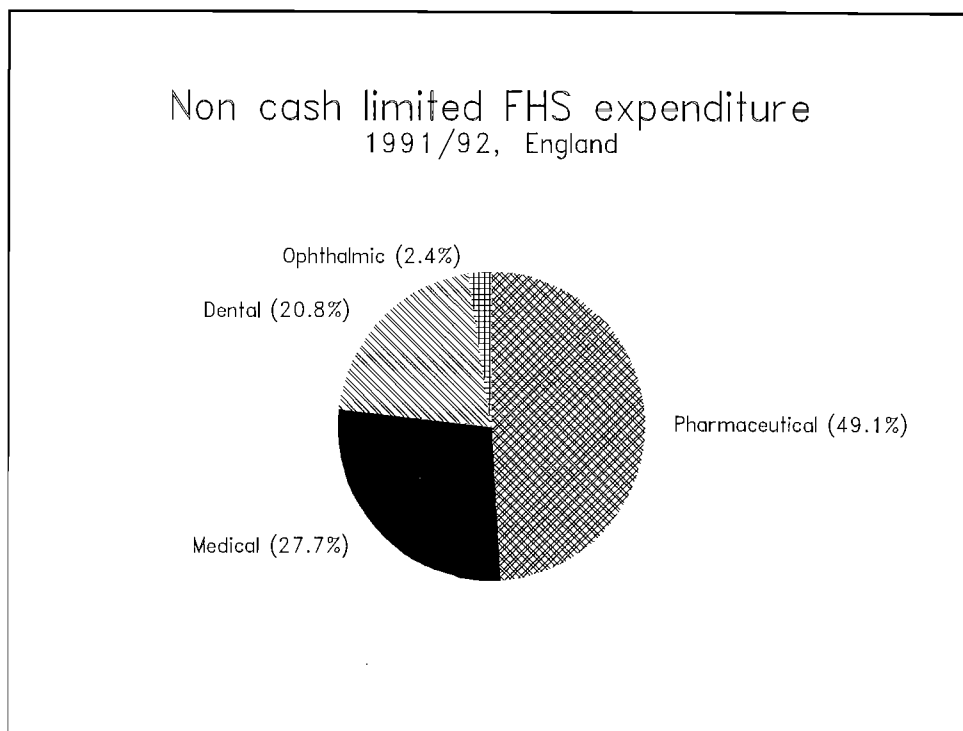
Table 2 UK NHS Gross Expenditure - Proportion Spent on Each Service

Year	Hospital Services %	Community Health Services %	Family Health Services %	Other Services ¹ %
1979	60.9	6.0	21.0	12.1
1980	60.2	6.2	20.5	13.0
1981	60.4	6.2	20.7	12.7
1982	61.8	6.4	22.2	9.4
1983	57.9	6.1	22.2	13.8
1984	58.2	6.3	22.4	13.0
1985	57.6	6.5	22.6	13.3
1986	57.0	6.7	22.6	13.7
1987	55.6	7.6	22.6	13.5
1988	55.5	8.2	23.3	12.8
1989	54.7	8.5	23.2	13.6
1990	55.1	8.7	23.0	13.3
1991e	55.5	8.7	22.6	13.2
1992e	55.8	8.8	22.7	12.7

¹ Includes HQ administrators (RHAs, DHAs, etc), central administration, ambulance services, mass radiography services and centrally financed items such as laboratory services, vaccines, R+D costs etc.

Source: OHE Compendium of Health Statistics 1992.

Figure 1: Family Health Services Expenditure in England, 1991/92



Increasing expenditure on pharmaceutical services has also contributed to the expansion of the FHS budget. Gross expenditure on this sector has increased in real terms by 54 per cent (GDP deflator, Treasury 1993) or 25 per cent (NHS pay and prices deflator) over the period 1978-79 to 1991-92. The proportion of gross costs recovered from prescription charges has risen from 3.5 per cent to 7.4 per cent in the same period. Even allowing for this, the government's net expenditure has increased by nearly 47 per cent in real terms (GDP), or 19 per cent (NHS). In 1991-92, 4,156 million prescriptions were dispensed in England, 27 per cent more than in 1978-79. The drugs bill, the largest component of the Pharmaceutical Services, amounted to £2.3 billion in 1991-92. Its cost, in real terms, has risen in line with the total increase in pharmaceutical services over the period (Treasury 1993). This increase

is despite the many attempts to constrain pharmaceutical expenditure (e.g the provision of prescribing analysis and cost (PACT) data, generic prescribing and limited lists). This may be due to the operation of the Pharmaceutical Price Regulation Scheme (PPRS), which provides a rate of return on historical capital in excess of 20 per cent to pharmaceutical companies, to encourage research and development. This scheme however removes incentives for pharmaceutical companies to minimise their costs and it may negate the effects of economising policies such as generic prescribing through the price-profits regulation.

Other sectors in the FHS budget have been targeted by government cost containment policies, with privatisation of ophthalmic services, constraints in remuneration of dental practitioners, and the partial privatisation of the service. Expenditure on ophthalmic services has decreased by 30 per cent in real terms (GDP deflator) or by 43 per cent (NHS deflator) over the period 1978-79 to 1991-92, reflecting the fact that from April 1989 free NHS sight tests have been available only to certain groups. Expenditure on dental services has increased at a slower rate than that on general medical services and pharmaceuticals. Gross expenditure has risen by 65 per cent (GDP) or 34 per cent (NHS) since 1978-79. In the same period the proportion of gross costs recovered from patient charges has increased from 20 per cent to 32 per cent, which means government net expenditure has increased by 39 per cent (GDP adjusted, Treasury 1993) or 13 per cent (NHS adjusted).

Expenditure on personal social services has increased steadily throughout the 1980s. In 1978-79 total expenditure on health and personal social services in the UK was £9.2 billion, of which health consumed £7.8 billion, around 85 per cent. By 1991-92 the overall NHS and PSS budget had increased to £37.4 billion, of which health consumed £31.5 billion, again

around 85 per cent (Treasury 1992b). Expenditure on personal social services has therefore increased at around the same rate as overall health and PSS expenditure. Net expenditure on local authority personal social services in England has risen from £1,062 million in 1978-79 to £4,999 million in 1992-93. This is an increase in real terms (adjusted by the GDP deflator) of 67%, and in volume terms (adjusted by the PSS pay and prices deflator) of 41% (DH 1993). The implementation of recent community care reforms is likely to continue or increase pressure on resources in this area.

Real expenditure on health and personal social services has increased significantly between 1979 and 1992. This growth however has fluctuated annually (Table 1) and increases are very unequal both between and within the different care sectors (HCHS, FHS, PSS and others).

3 THE INFLUENCE OF PERSONNEL CHANGES

The NHS is a highly labour-intensive service and as such personnel changes have a major influence on overall expenditure and its distribution between sectors. In 1990 there were over a million staff employed in the NHS (DH 1992) and local authority social services, with a total wage bill of approximately £14.9 billion (OHE 1992). The NHS wage bill makes up over 80% of Hospital and Community Health Services expenditure (OHE 1992), and it is therefore clear that expenditure on salaries and wages are the dominant contributing factor to overall expenditure in the NHS.

Trends in NHS and LAPSS staff in England between 1980 and 1990 are described in Tables

3-5. Total staff levels increased over the decade by less than 5% (Table 3), but the distribution between sectors changed much more.

Total staff employed in the Hospital and Community Health Services (HCHS) are described in Table 3. The numbers of directly employed HCHS staff have increased by only 0.3% over the period, but there are more significant increases in some types of staff. Medical and dental staff numbers have increased steadily over the period, particularly hospital medical and dental staff, which increased by 19.6% over the period. Nursing staff form the largest number of employees, and the number also increased steadily over the period, by approximately 8%. The largest relative increase in HCHS staff was in professional and technical staff, which increased in number by over 35% over the period. This sector is made up of professions allied to medicine, such as physiotherapists and dieticians, scientific staff such as biochemists and psychologists, and technical staff such as cardiographers and medical laboratory assistants.

Over this time period there has been a significant reduction in the number of hospital beds in NHS hospitals. In England, the average daily number of available beds in 1980 was 363,395 (OHE 1992). This number decreased steadily to an estimated 265,053 by 1991, during a time when numbers of medical and nursing staff have increased. For example, in England in 1980 there were approximately 10 available hospital beds for each whole-time member of medical and dental staff. By 1990 this had fallen to 6 beds per staff (OHE 1992, DH 1992). An even more marked change is seen in senior medical staff. In England in 1980 there were 11,091 whole-time equivalent consultants and SHMOs (with allowance), with on average 33 available hospital beds per senior medical member of staff. By 1990 there were 13,865 whole-time equivalent consultants and SHMOs, with on average 19 available beds per

senior medical staff member (OHE 1992, DH 1992). Similarly, in 1980 there was approximately 1 available hospital bed for each whole-time member of nursing and midwifery staff. By 1990 this had fallen to 0.6 available beds per nurse (OHE 1992).

Part of this change is attributable to changes in the working week of NHS staff, and part may be a result of increases in technology enabling day surgery and reduced length of stay. However, it does appear that the number and skill level of hospital medical and nursing staff per available bed has increased greatly over this time period.

Significant reductions in numbers of directly employed staff are shown in works professional, maintenance and ancillary staff, due to government policies of contracting out these services. Finally, there have been significant increases in the number of administrative and clerical staff over the period, particularly since 1987, as a result first of the implementation of the recommendations of the Griffiths Report (1983), and then, from 1989 onwards, as a result of the implementation of the recent NHS reforms. The changes in the balance of staff employed in the NHS are illustrated in Figures 2 and 3, which show relative increases in the proportion of nursing and midwifery staff, administrative and clerical staff, professional and technical staff and medical and dental staff. The main relative reductions are in the proportion of works professional staff and ancillary staff.

Table 3 National Health and Personal Social Services Manpower 1980-1990, England

	1980	1985	1986	1987	1988	1989	1990	Overall % Change
NHS & PSS Total	1,036	1,079	1,073	1,079	1,078	1,115	1,086	4.82
NHS Total	837,518	861,930	848,636	847,131	842,092	876,242	845,793	0.98
Directly Employed Staff	793,793	812,896	801,589	799,281	793,392	826,843	776,359	0.32
Medical and Dental Staff	40,152	42,994	43,248	43,418	44,479	46,256	46,849	16.67
Hospital Medical and Dental	35,850	38,573	38,848	39,231	40,643	42,215	42,870	19.58
CHS Medical and Dental	4,303	4,421	4,401	4,187	4,106	4,041	3,978	-7.55
Nursing and Midwifery	370,080	401,151	402,690	404,041	403,883	405,281	402,066	8.64
Nursing	349,820	378,081	379,358	380,493	380,265	382,255	378,300	8.14
Midwifery	20,260	23,070	23,332	23,548	23,618	23,026	23,976	18.34
Professional and Technical	61,893	74,298	76,083	78,975	79,775	81,168	83,987	35.69
Works Professional	5,931	6,081	5,843	5,708	5,323	4,642	3,902	-34.21
Maintenance	20,572	19,758	19,140	18,471	17,331	16,541	16,019	-22.13
Admin and Clerical	105,430	111,048	111,351	111,595	115,951	121,450	129,716	23.03
Ambulance	17,768	18,188	18,965	19,010	18,761	18,862	18,131	2.04
Ancillary	171,967	139,379	124,267	115,063	107,619	102,360	95,689	-44.35

Source: Health and Personal Social Services Statistics for England, DH 1992.

Table 4 Family Health Services Practitioners, 1980-1990, England

<u>FHS Practitioners</u>	1980	1985	1986	1987	1988	1989	1990	Overall % Change
Total	NO 43,725	49,034	47,047	47,850	48,700	49,399	49,434	13.1
General Medical Practitioners	NO 23,674	26,190	26,529	27,023	27,420	27,749	27,523	16.2
General Dental Practitioners	NO 12,415	14,334	14,516	14,765	14,070	15,351	15,480	24.6
Ophthalmic Medical Practitioners	NO 837	844	869	849	832	784	779	-6.9
Ophthalmic Opticians	NO 4,715	5,055	5,133	5,213	5,378	5,514	5,652	19.8
Dispensing Opticians	NO 2,084	2,611	-	-	-	-	-	-

Source: Health and Personal Social Services Statistics for England, DH 1992.

Table 5 Local Authority Personal Social Services Staff, 1980-1990, England

	1980	1985	1986	1987	1988	1989	1990	Overall % Change
Total	198,408	217,013	223,898	232,019	235,969	238,754	240,342	21.1
Senior Managers etc	3,700	4,948	5,214	5,521	5,849	6,319	6,778	83.1
Field Social Work Staff	22,968	24,773	25,914	27,016	27,865	28,598	29,672	29.1
Other HQ etc	19,344	1,937	20,232	21,309	21,859	22,352	23,365	20.7
Home Help Service	48,808	54,705	56,566	59,510	60,435	60,411	59,772	22.4
Day Care (Adults)	12,103	15,680	16,383	17,776	18,440	19,423	19,720	62.9
Day Care (Children)	8,523	9,392	9,497	9,396	9,522	9,434	8,892	4.3
Residential Care (Adults)	57,503	65,603	67,138	69,478	70,212	70,775	71,041	23.5
Residential Care (Children)	23,887	19,852	19,556	18,765	18,285	17,510	16,817	-29.5
Other Staff	1,572	2,673	3,397	3,258	3,502	3,932	4,284	172.5

Source: Health and Personal Social Services Statistics for England, DH 1992.

Figure 2

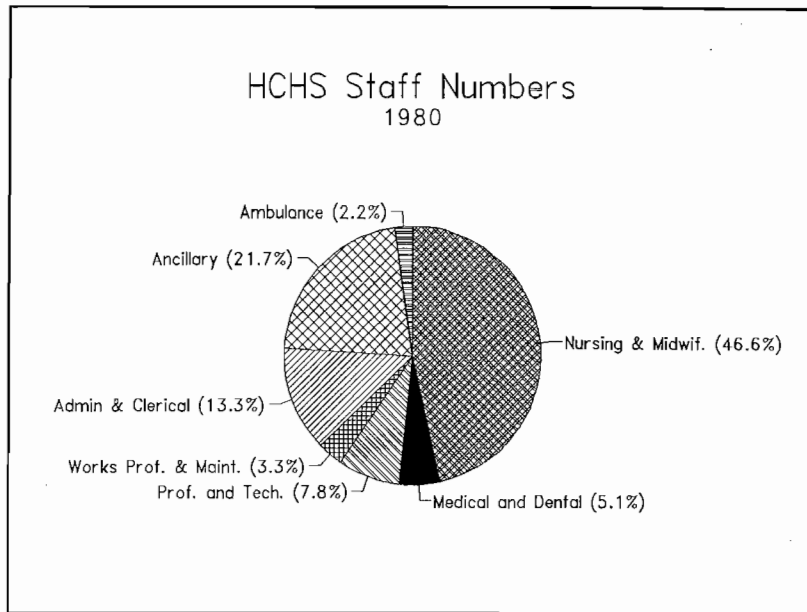
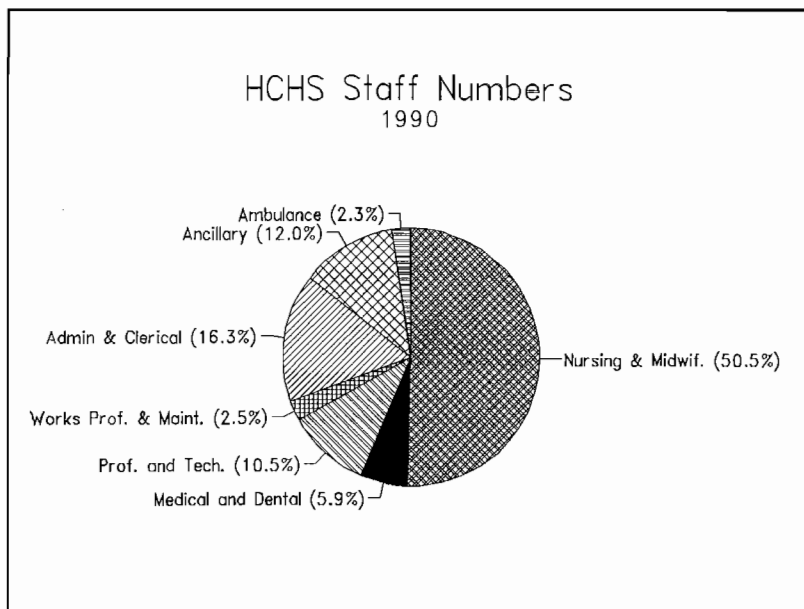


Figure 3



These changes in personnel trends have potentially significant resource consequences. Despite overall increases in directly employed HCHS staff of only 0.3%, some types of staff have increased more significantly, i.e. medical and nursing staff, professional and technical staff and administrative staff. These are all relatively highly paid staff compared to those types which have reduced in number - primarily ancillary workers and maintenance staff. If these trends continue, the overall wage bill for the NHS will continue to increase considerably even if staff numbers do not. Expenditure on salaries and wages by Regional, District and Special Health Authorities in England increased from £3.99 billion in 1980 to £11.23 billion by 1991, an increase of around 28% in real terms, as adjusted by the GDP deflator at factor cost (DH 1992).

Between 1980 and 1992 the salary levels of senior medical staff have increased significantly. The highest basic salary for a consultant has risen from £19,870 in 1980-81 to £46,390 in 1991-92 (Review Body reports, various). This is an increase of approximately 19 per cent in real terms (adjusted by the GDP deflator). The intended net income of GPs has increased from £16,290 in 1980-81 to £37,022 in 1991-92 (Review Body 1992), an increase of approximately 16 per cent in real terms.

The largest relative increase in salary levels over recent years has been that of nurses and midwives. Since the introduction of the Pay Review Body in 1984, the mid-point salary of a staff nurse has increased from around £5,546 in 1983 to £12,520 in 1991-92, (assuming mid-point of salary Grade E) (Review Body reports, various). This is an increase of approximately 41 per cent in real terms, although the two figures are not directly comparable due to changes in the grading structure.

The real increase in wages of nurses has potentially significant implications for skill mix. If nursing tasks are substitutable, and the demand curve for nurses slopes downwards it could be that the previous trend of increasing numbers of nurses may be reversed. The response to increased real wages is likely to be delayed, but there is some evidence of a decline in numbers of nurses since 1990 (McFarlane 1993). This is despite recent evidence suggesting that quality of patient care is higher the higher the grade of the nurses who provide it (Carr-Hill et al 1992). The issue of skill mix in nursing care is controversial and of current debate, provoked particularly by Professor Eric Caines, who recently suggested that ministers had through political cowardice protected nursing (and doctors) from efficiency scrutinies while happily hammering the low paid hospital ancillary workers (Guardian 16 June 1993). This view is understandably challenged by the Royal College of Nursing, and the debate is unlikely to progress without further evidence.

Numbers of hospital medical staff are broken down by grade in Table 6. There has been an overall increase in numbers of medical staff of 19.6% over the period, but this increase has been most significant in the senior grades. The number of whole time equivalent consultants increased from 11,000 in 1980 to over 13,800 in 1990, by on average 2.2% per year (Medical Manpower Standing Advisory Committee 1992). The policy of consultant expansion was confirmed in 1987 by the government White Paper 'Achieving a Balance' (DH 1987). This indicated that the existing rate of consultant expansion of about 2% per annum should be maintained and additionally a greater proportion of patient care should be provided by fully trained doctors. The number of senior registrars increased from 2,454 in 1980 to 3,139 in 1990. The number of registrars however, considerably decreased, from 5,273 in 1980 to 2,932 in 1990, with numbers of house officers and senior house officers increasing, but at a

slower rate than the senior medical grades. This is also consistent with the policies of 'Achieving a Balance'.

The resource consequences of this relative shift towards senior medical grades are considerable, and these can only be increased by the recent initiatives to reduce the working hours of junior doctors by employing more senior staff, expanding the number of consultants and introducing the staff grade practitioner.

Trends in numbers of practitioners in the family health services are shown in Table 4. The numbers of general medical, dental and ophthalmic practitioners have all increased steadily over the period, with numbers of ophthalmic opticians decreasing slightly, and dispensing opticians no longer employed by the NHS since their privatisation in 1985.

Of the three sectors, the largest relative increases in numbers of staff over the period have been in local authority social services (Table 5). Overall whole time equivalent staff have increased by over 21%, with the largest relative increases being in numbers of senior managers, adult day care staff and field social work staff. The only type of staff to decrease in number over the period were childrens' day care staff. The continuing implementation of policies to improve care in the community is likely to continue to increase the need for staff in the social services sector.

4 THE REVENUE/CAPITAL SPLIT

The majority of NHS expenditure is current (revenue) expenditure, primarily on salaries and wages. This is illustrated for England in Table 7, where it is shown that capital represented around 5-6 per cent of total NHS expenditure over the period 1978/79 to 1991/92. The split between revenue and capital expenditure changed very little over the decade, but there does appear to be a slight trend towards proportionally increasing capital expenditure since 1988, excluding a fall in 1991/92, which is reversed in the future expenditure plans.

Table 8 shows UK NHS hospital net revenue and capital expenditure and the expenditure per person over the last decade. In the hospital sector, real net capital expenditure did increase at a faster rate than revenue expenditure with real overall percentage changes of 101% and 1.9% respectively, and a real average annual growth rate in expenditure per person of 0% in revenue and 6.4% in capital expenditure. There is therefore some evidence of the much publicised 'hospital building programme', but capital expenditure is still a very small proportion of HCHS expenditure. In addition, much of the recent capital expenditure in this sector has been funded by sales of land and buildings by health authorities due to hospital closures and reorganisations. The backlog of repairs required on hospitals and other NHS buildings is large and increasing. A recent parliamentary written answer shows that the backlog of repairs has risen by more than 40 per cent since 1990, with £2.2 billion of work needed in England (Guardian, 8 November 1993).

Table 7 Net NHS Current and Capital Expenditure 1976/79 to 1991/92, England

Year	Volume ¹ Current Exp (£m)	As % Total NHS	Volume ¹ Capital Exp (£m)	As % Total NHS
1978/79	19820	94.2	1217	5.8
1979/80	19702	94.6	1126	5.4
1980/81	19687	94.3	1193	5.7
1981/82	20323	93.8	1344	6.2
1982/83	20855	94.1	1313	5.9
1983/84	21009	94.2	1283	5.8
1984/85	21256	94.1	1337	5.9
1985/86	21243	93.5	1485	6.5
1986/87	21350	93.8	1420	6.2
1987/88	21734	94.4	1280	5.6
1988/89	21874	95.0	1152	5.6
1989/90	21762	93.8	1426	6.2
1990/91	22729	93.6	1550	6.4
1991/92	24106	95.1	1250	4.9

1 Figures are in 1991/92 prices, adjusted by the NHS pay and prices deflator.

Source: The Government's expenditure plans, various years.

Table 8 NHS Hospital Net Revenue and Capital Expenditure, UK, 1980-1991

Year	Net Revenue Exp (£m)	Net Revenue Exp Per Person (£)	Net Capital Exp (£m)	Net Capital Exp Per Person (£)	Total Net Exp (£m)	Total Exp Per Person (£)	% Capital	% Revenue
1980	5,440	97	504	9	5,944	106	8.5	91.5
1982	7,799	138	801	14	8,600	152	9.3	90.7
1983	8,366	149	834	15	9,200	164	9.1	90.9
1984	8,823	157	870	15	9,693	172	9.0	91.0
1985	9,324	165	960	17	10,284	182	9.3	90.7
1986	9,801	173	1,073	19	10,874	192	9.9	90.1
1987	10,427	184	1,107	20	11,534	204	9.6	90.4
1988	11,134	196	1,176	21	12,310	217	9.6	90.4
1989	12,312	216	1,279	22	13,591	238	9.4	90.6
1990	13,120	229	1,543	27	14,663	256	10.5	89.5
1991e	14,145	246	1,669	29	15,814	275	10.6	89.4
% Change ¹ 1980-90	1.9		101					
AGR ¹ 1980-90		0		6.4				

Source: OHE Compendium of Health Statistics 1992

1 Figures relate to percentage change at constant prices between financial years 1979/80 and 1989/90, as adjusted by the NHS pay and price indices of H+CHS in England.

In the family health services authorities it is difficult to identify total capital expenditure. In 1990-91 English FHSAs spent £5.4 billion. FHSA administration expenses accounted for 2.2% of this, £116.5 million, with administration capital expenditure at £12.6 million, only 0.2% of the total FHSA budget. The majority of FHSA expenditure is on the family practitioner services (general medical, dental, ophthalmic and pharmaceutical services), which account for £5.3 billion (37% of the FHSA budget is spent on general medical services, 46% on pharmaceutical services, 13% on dental and 2% on ophthalmic services). Within this budget it is not possible to break down expenditure into capital and revenue components.

5 GEOGRAPHICAL DISTRIBUTION OF EXPENDITURE

The distribution of expenditure between regions in the National Health Service is unequal, despite the implementation of the RAWP formula for Hospital and Community Health Services in England in 1977, with similar formulae in the rest of the UK, and subsequent use of weighted capitation formulae since the 1989 NHS reforms. Table 9 shows the expenditure of the English Regional Health Authorities (RHAs), with the total net expenditure of Scotland, Wales and Northern Ireland, from 1980 to 1991. The percentage of overall expenditure allocated to each region has not varied a great deal over the period, but there has been some change. In the UK as a whole, between 1980 and 1990 there was a 13% increase in real total net expenditure by RHAs and Health Boards. This increase varied between regions from a 4% increase in NW Thames to a 27% increase in Wales.

In considering the regional distribution of expenditure it is clearly important to take account of the population of each region. Table 10 shows total net NHS expenditure per person by

RHAs and Health Boards in 1980 and 1991. Expenditure per person in the UK as a whole in 1980 was £162. This varied between regions from £136 per person in the Oxford region to £176 in NW Thames, £189 in Scotland and £202 in Northern Ireland. In percentage terms this ranged from 16% below the UK average to 25% above it. In 1991 those regions above and below average expenditure per person had not changed. In addition, the range of expenditure has also decreased very little despite the aims of RAWP and other formulae, and weighted capitation. In fact, the relative position of Oxford RHA and East Anglia RHA had worsened (to 18.6% and 10.6% below the average expenditure per person for the UK). Whilst most of the relatively high spending regions (Thames regions, Scotland and Northern Ireland) had decreased relative spending, NE Thames relative expenditure increased from 6% above the UK average per person in 1980 to 11% above average in 1991.

6 WAITING LISTS AND HOSPITAL ACTIVITY

6.1 Waiting Lists

Statistics on in-patient waiting lists have been gathered since 1948, but information on waiting times has only been collected since 1975. Figure 4 shows the trends in waiting lists and times between 1979 and 1991. Over this time total cases waiting have changed little, from 752,000 in March 1979 and 665,000 in March 1980 to 693,000 in March 1991. Cases waiting over one year have also remained fairly constant, at 185,000 in 1979, and 176,000 in 1990, but falling to 145,000 in 1991. Since 1987, when waits of over two years were distinguished from the data for the first time, numbers waiting for more than two years has fallen from 79,000 to 44,000 in 1991. Published statistics from 1992 onwards are not comparable due to the inclusion of day cases.

Table 9 Total Net NHS expenditure by region, 1980-1991

Year ending 31 March	1980	% UK	1985	% UK	1987	% UK	1989	% UK	1991	% UK	% Change 1980-1991 ¹
UK	9,097	-	16,124	-	18,381	-	22,529	-	26,975	-	13
England	7,341	80.7	12,987	80.5	14,794	80.5	18,100	80.3	21,879	81.1	12
Northern	474	5.2	841	5.2	953	5.2	1,151	5.1	1,390	5.2	11
Yorkshire	534	5.9	945	5.9	1,091	5.9	1,319	5.9	1,590	5.9	12
Trent	641	7.0	1,154	7.2	1,325	7.2	1,636	7.3	1,976	7.3	16
E Anglia	274	3.0	491	3.0	571	3.1	713	3.2	864	3.2	19
NW Thames	608	6.7	992	6.2	1,112	6.0	1,391	6.2	1,673	6.2	4
NE Thames	634	7.0	1,186	7.4	1,327	7.2	1,644	7.3	1,974	7.3	18
SE Thames	622	6.8	1,058	6.6	1,206	6.6	1,472	6.5	1,764	6.5	7
SW Thames	485	5.3	818	5.1	918	5.0	1,184	5.3	1,432	5.3	11
Wessex	388	4.3	727	4.5	834	4.5	1,005	4.5	1,235	4.6	20
Oxford	312	3.4	561	3.5	643	3.5	811	3.6	984	3.6	19
S Western	474	5.2	851	5.3	976	5.3	1,190	5.3	1,454	5.4	16
W Midlands	741	8.1	1,333	8.3	1,544	8.4	1,828	8.1	2,242	8.3	14
Mersey	397	4.4	681	4.2	776	4.2	925	4.1	1,115	4.1	6
N Western	655	7.2	1,168	7.2	1,301	7.1	1,572	7.0	1,862	6.9	7
SHAs	102	1.1	183	1.1	220	1.2	259	1.1	325	1.2	20
Wales	462	5.1	839	5.2	968	5.3	1,271	5.6	1,429	5.3	27
Scotland	985	10.8	1,752	10.9	2,008	10.9	2,425	10.8	2,795	10.4	12
N Ireland	308	3.4	517	3.2	611	3.3	732	3.2	872	3.2	8

Source: OHE Compendium of Health Statistics 1992

1 Figures have been adjusted by the NHS pay and price indices in England.

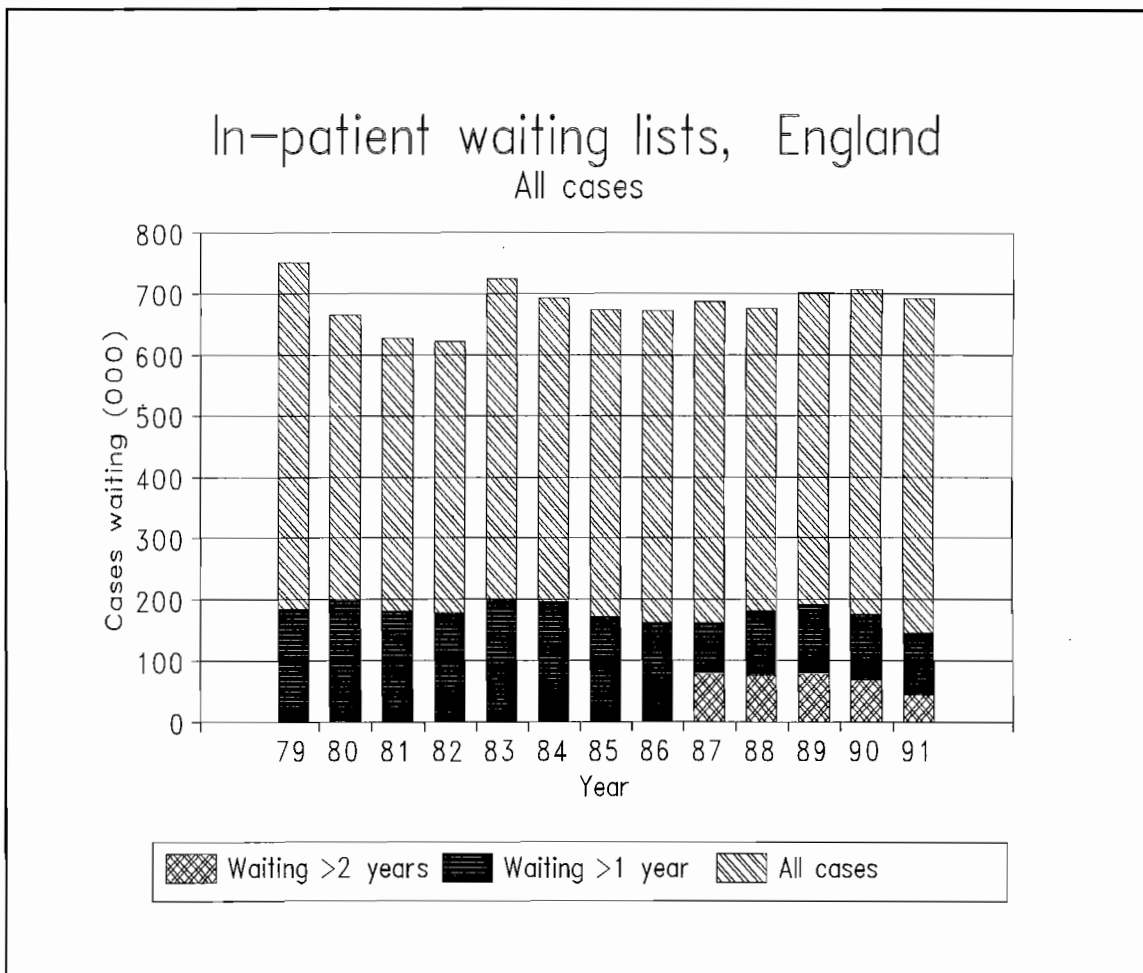
Table 10 Total Net NHS Expenditure Per Person by RHAs and Health Boards

	1980 (£)	Rel. to UK (UK = 100)	1991e (£)	Rel. to UK (UK = 100)
UK	162	100	470	100
England	157	96.9	457	97.2
Northern	151	93.2	452	96.2
Yorkshire	148	91.3	435	92.6
Trent	140	86.4	420	89.4
E Anglia	146	90.1	420	89.4
NW Thames	176	108.6	478	101.7
NE Thames	168	103.7	419	110.4
SE Thames	174	107.4	482	102.6
SW Thames	165	101.9	481	102.3
Wessex	142	87.7	420	89.4
Oxford	136	84.0	384	81.4
S Western	155	95.7	446	94.9
W Midlands	143	88.3	429	91.3
Mersey	161	99.4	464	98.7
N Western	161	99.4	464	98.7
Wales	164	101.2	496	105.5
Scotland	189	116.7	548	116.6
N Ireland	202	124.7	549	116.8

Source: OHE Compendium of Health Statistics 1992

From 1987 onwards, the government has published in-patient and day case waiting lists. Inclusion of day cases in September 1987 meant that the total list was over 848,000, (661,000 in-patients), increasing to over 976,000 by December 1992, and over 1,030,000 by September 1993 (Department of Health Press Release). A large proportion of this increase is in day cases.

Figure 4



Source: DH Statistical Bulletins

In 1987, the Department of Health introduced the 'Waiting List Initiative', expecting the NHS to reduce waiting times by analysing the underlying causes of excessive waiting lists and taking action to address them. A waiting list fund was established, and in the four years 1987-8 to 1990-1, allocations to the fund totalled £119 million (National Audit Office 1991). From 1989 onwards there has been a reduction in the number of cases waiting over two years and over one year. In March 1989 there were 194,000 in-patients waiting over one year and 80,000 waiting over two years. By March 1991 this had fallen to 145,000 and 44,000 respectively. At this time the NHS Management Executive aimed to eliminate all waits of over two years by March 1992. This aim was backed by government and the then secretary of state, William Waldegrave, offered £35 million to the NHS if this was achieved. Previously, the waiting list initiative had encouraged regions to set targets with districts for progressive reductions in waiting times, but had not imposed targets on regions from the centre. By March 1992 there were only 1,600 cases (in-patient and day cases combined) waiting more than two years and the number waiting more than one year had fallen to 79,496. By March 1993 all RHAs had eliminated waits over two years and only 291 remained in SHAs. Waits of 12-23 months had also continued to fall, to 56,308 (DH Press Release).

The government has continued to focus on waiting times since 1992, with pledges in the 'Patients' Charter' (DH 1991) to guarantee that no-one waits over two years for any in-patient or day case treatment and that no-one waits more than 18 months for a hip or knee replacement or a cataract operation. In 1992-93 a waiting time fund of £33.712 million was allocated to regions and special health authorities, which could be clawed back if targets are not met. In addition, regions were to match these

allocations, so over £67 million was targeted at the waiting time problem. In 1993-94 the central waiting time fund has increased further, to £39 million (£10 million set aside for London). Regions are no longer required to match allocations £ for £ but "should nevertheless contribute from their own resources if this is necessary to ensure that the 1993/94 national policy objectives are met" (NHSME, 1993). Allocations can again be clawed back if regions fail to achieve Patients' Charter guarantees and targets for numbers of 1-2 year waiters. No information is published by the DH regarding how the figure for the annual waiting time fund is determined.

The waiting time fund was established to address the causes of 'excessive' waiting lists and to identify and tackle bottlenecks. Districts are expected to use the fund to treat patients from waiting lists in specialties where there are long waiting times, for example by providing extra operating sessions and beds, appointing extra staff or buying equipment, to make use of spare capacity (NAO 1991). In 1991, the National Audit Office found that while specialties with projects resulting from the waiting list fund did reduce numbers waiting compared with an increasing trend nationally, there was evidence that, as more patients were treated, increased numbers were added to waiting lists, increasing the demand for treatment (NAO 1991). The reason for this increasing demand is not known and the NAO emphasised the need for further research to try and identify this reason. It may be a result of GPs referring more patients as waiting lists decrease, and/or less patients choosing private treatment as an alternative to waiting.

The focus on reducing waiting lists puts pressure on health care providers to increase activity, without necessarily increasing efficiency. Targeting non-urgent cases waiting

for long periods may be at the risk of not spending on more urgent cases with shorter waits (Yates 1991). The NHS may be doing more, but is it effective and efficient?

Gudex et al (1990) present waiting lists as "improvements in health waiting to be delivered to people". In prioritising waiting lists it is necessary to know the composition of the list - a long list of minor cases could be a lower priority use of additional resources than a short list where the benefits from earlier treatment are large. The authors examined the general surgical waiting list at Guy's Hospital and estimated the expected net benefits (in terms of quality adjusted life years) from treatment one year earlier than might otherwise have been the case, identifying which treatments offered the greatest additional benefit per unit of resource. This study illustrates how thoughtful management of waiting lists, even with the restricted data available, could result in greater health benefits than all-encompassing targets which imply that the person with the longest waiting list should have more resources, with no consideration of the composition of the lists.

The waiting time initiative allocated approximately £225 million between 1987 and 1993-94. It is not clear where these funds have been used. The total waiting time fund is distributed between regions without any formal mechanism, and the projects which use these funds are not clearly documented. One way of assessing the success of the projects implemented by these funds is to look at overall waiting lists, waiting times and hospital activity. Overall waiting lists have not fallen, but the stated aim of the initiative, to reduce the number of patients waiting over one year and to eliminate waits of over two years, has been achieved. This is largely due to increases in hospital

activity, which are now considered.

6.2 Hospital activity

6.2.1 Stock of hospital beds and throughput

Since 1981, the average daily number of available beds has fallen in all sectors. For all specialties the number has fallen from 352,000 in 1981 to 242,000 in 1991-2 (Table 11), an average annual reduction of around 10,000 beds or almost 3 per cent. Acute beds are the largest proportion of all specialties, 46% in 1991-2. The largest reductions in available beds are in mental illness and mental handicap, with 85,000 and 48,000 respectively in 1981, falling to 50,000 (59% of the 1981 level) and 21,000 (44% of the 1981 level) in 1991-2. This is the result of increased care in the community, both by closing hospitals for mentally ill and mentally handicapped people, and transferring patients to the community, and by admitting less new patients to hospital, reducing the need for beds as older patients die.

The reduced number of available beds is a product of faster throughput of patients and reducing lengths of stay. The throughput of patients (average cases per available bed per year) in all specialties has increased from 16.4 (discharges & deaths) in 1981 to 32.0 (FCEs) in 1991-2. This is an average annual increase of 5.3% to 1990-1 and 8.7% between 1990-1 and 1991-2. Geriatric throughput has increased from 5.1 cases in 1981 to 12.1 cases in 1991-2. Mental illness throughput has increased from 2.2 cases to 6.6 cases and mental handicap throughput from 0.6 cases to 2.6 cases over the

period. Average lengths of stay for ordinary admissions (non-psychiatric hospitals, excluding day cases) has fallen in the acute medical sector from 10.2 days in 1981 to 6.5 days in 1991-2, in acute surgical from 7.5 days to 5.9 days, in geriatrics from 66.1 days to 32.7 days and in maternity from 5.5 days to 3.5 days.

Table 11 Stock of Hospital Beds and Patient Throughput, England

	1980	1985	1991	% Change 1980-90
Number of average daily available beds (all specialties)	352,000	325,000	242,000	-24
Acute specialties; numbers of discharges and deaths (000s)	3,962	4,865	5,867	46
Acute specialties: average length of stay	8.8	7.6	6.0	-30

Sources: OHE Compendium of Health Statistics, 1992
DH Statistical Bulletins

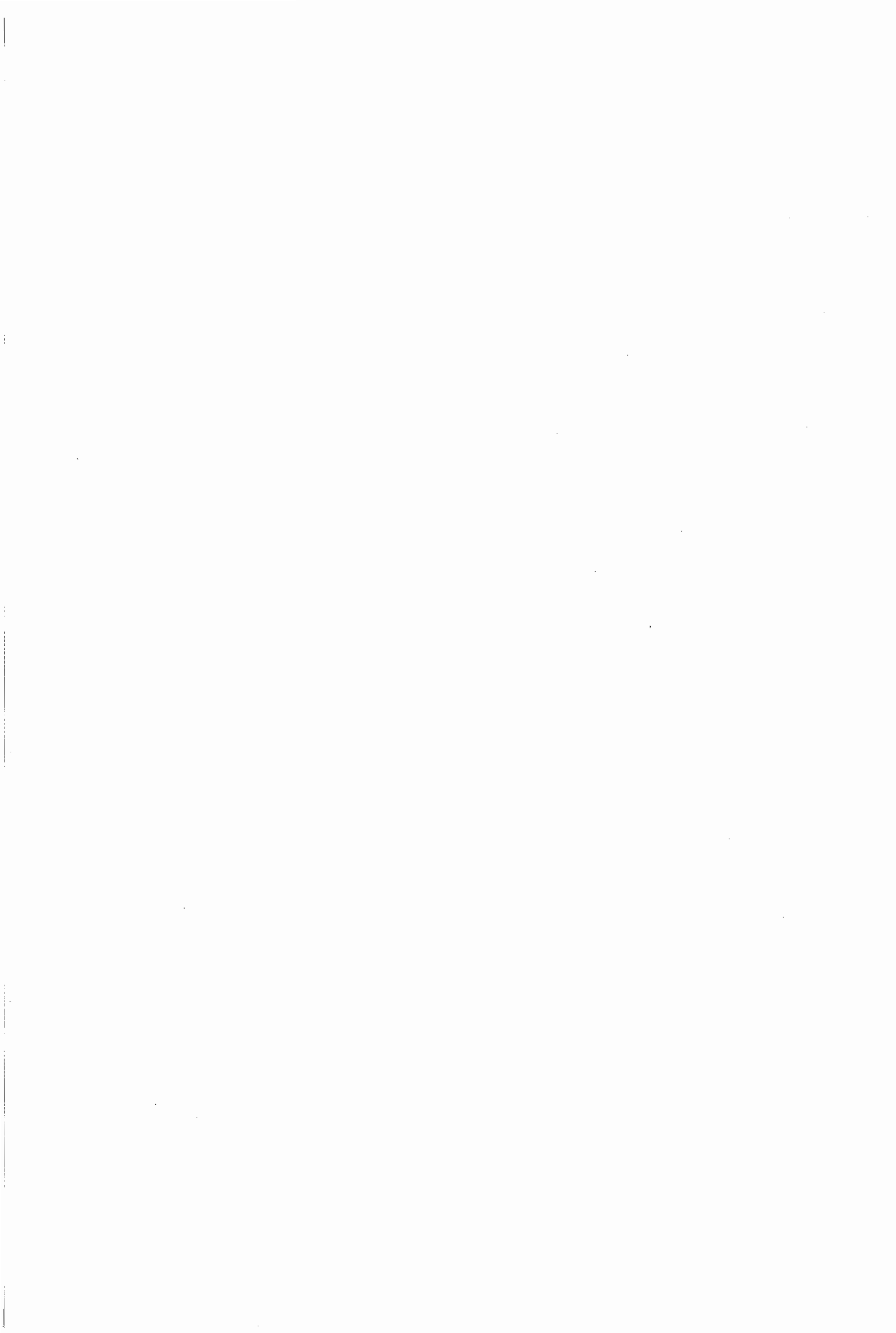
6.2.2 Total activity

National statistics on hospital activity, including numbers of patients treated, are published at six monthly intervals. The most recent available activity statistics are 1991/92 (DH 1993). Data up to 1986-7 refer to discharges and deaths, and data from 1987-8 onwards refer to finished consultant episodes (FCEs). This change, with the change in year ends from December to April, explains the discontinuity in the time series.

The use of finished consultant episodes as measures of activity has been the subject of some debate. FCEs record occasions on which an inpatient is under the care of a consultant, giving no indication of numbers of hospital admissions, let alone actual numbers of patients being treated. Increasingly, diagnosis and treatment of a single disease takes place during a series of admissions, for example when test results are awaited, or during a course of treatments such as chemotherapy. In addition, increasing specialisation may lead to transfer of a patient's care from one consultant to another, for example when one consultant provides initial care and another less acute care. In this case, the recorded number of FCEs will increase (Clarke & McKee 1992). While the previous system of recording discharges and deaths was flawed, potential ambiguities remain with the use of FCEs.

In 1980, the number of ordinary admissions (discharges and deaths) in NHS hospitals in England was 5.67 million. By 1991-2 this had risen to 7.76 million FCEs, an average annual percentage change of 1.7% between 1981 and 1990-91, and 3.1% between 1990-91 and 1991-2 (see Figure 5).

Activity in the surgical acute sector in England has increased at a slower rate than other sectors, with an average annual increase of 0.7% between 1981 and 1990-91, and 2.4% in 1990-1 to 1991-2. This may be a result of the increasing numbers of surgical procedures which are carried out as day cases, with no need for full ordinary admission to hospital. Non-surgical acute admissions grew faster than the average, with an average annual increase of 2.5% between 1981 and 1990-91 and 3.7% between 1990-1 and 1991-2. This may reflect the use of new medical therapies, for example the use



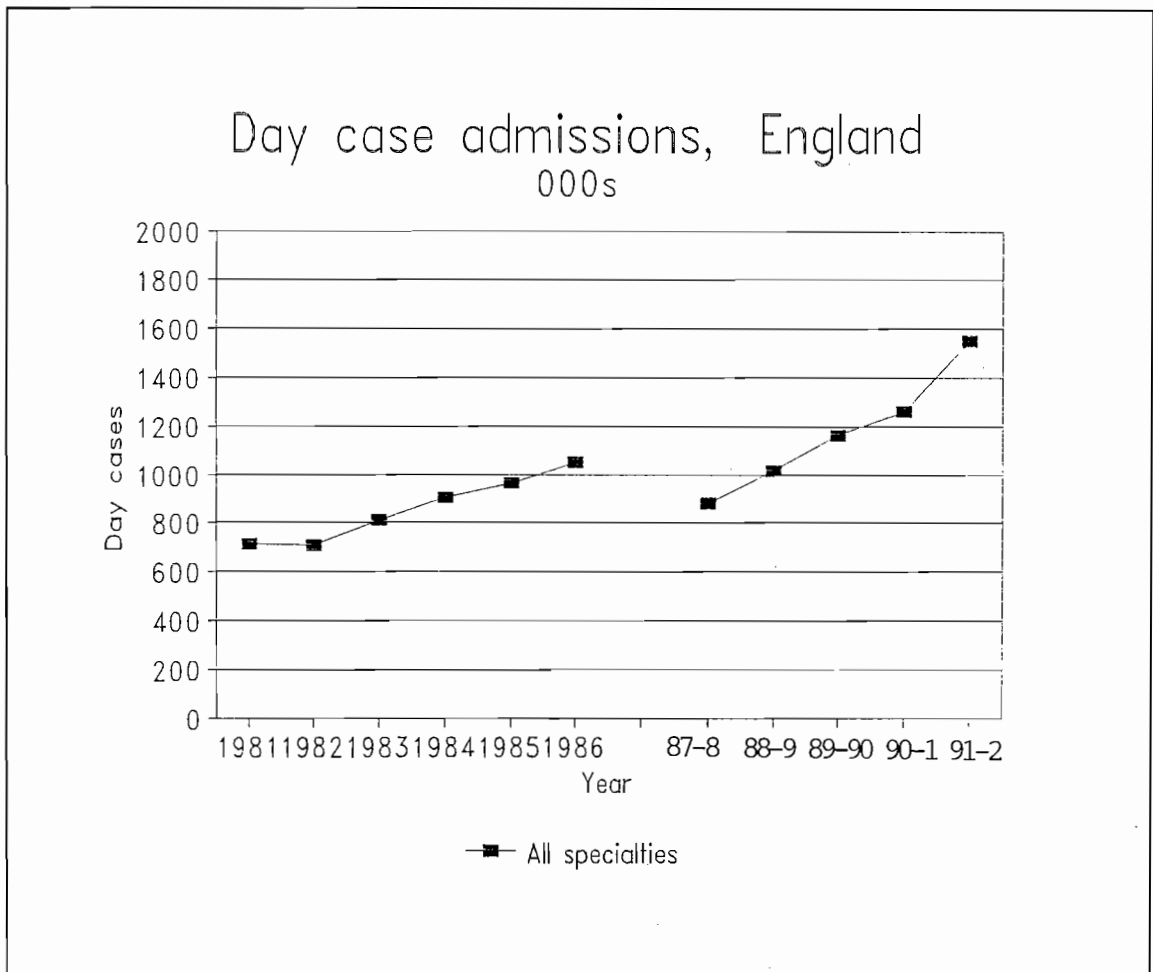
between 1981 and 1990-91 and 8.6% between 1990-1 and 1991-2. Mental illness admissions have risen from 188,000 in 1981 to 221,000 in 1991-2 and mental handicap admissions have increased from 28,000 in 1981 to 54,000 in 1991-2.

6.2.3 Day cases

The number of day cases has increased steadily over the period, with an average annual growth rate of 6.3% to 1990-1 and 22.7% between 1990-1 and 1991-2 (Figure 6). 99% of day cases are in the acute sector. The non-surgical acute sector has grown slightly faster than the surgical acute sector, with average annual growth rates of 7.9% to 1990-91 and 28.4% between 1990-1 and 1991-2, compared to 6.2% and 20.6% for the surgical acute sector.

The growth in day case admissions between 1987-8 and 1991-2 is considerable. In 1987-8 there were 881,000 day case admissions in all specialties, and this increased by 667,000 to 1,548,000 in 1991-2. At an average cost per day case of £300 (estimated from CIPFA 1991), this implies an increase in NHS costs of £200 million (1992 prices) over a four year period. This is of course an overestimate, as day cases are replacing in-patient admissions rather than new additions to the health service budget. However, day cases, while saving in-patient hotel costs, are unlikely to result in overall expenditure savings as the throughput of patients is higher, which implies higher overall expenditure despite savings in cost per case.

Figure 6



Source: DH Statistical Bulletins

6.2.4 Out-patients

Out-patient attendances at NHS hospitals have increased at a much slower rate over this period. In all specialties, there was a 2% increase in total out-patient attendances, from 35.57 million attendances in 1981 to 36.94 million in 1991-2. New out-patient attendances increased from 8.03 million in 1981 to 8,97 million in 1991-2.

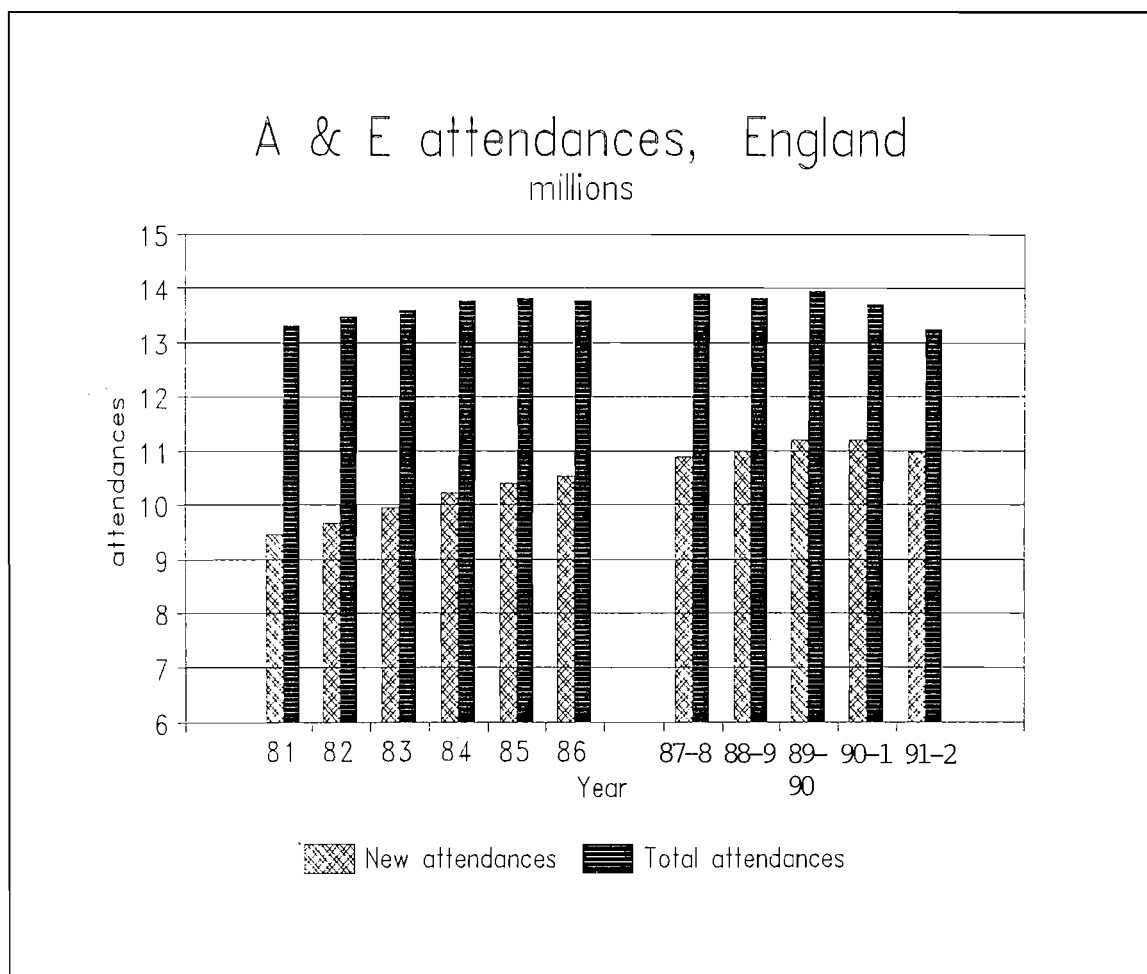
6.2.5 Accident & Emergency

Attendances at accident and emergency departments increased steadily to a peak in 1989-90, and appear to have been falling since then (Figure 7). The reason for this is unclear. A possible explanation, from one official at the Department of Health is that this may be a result of patients being treated more appropriately, and encouraged not to re-attend A & E departments (Nicolayson, personal communication).

6.2.6 Operating theatre use

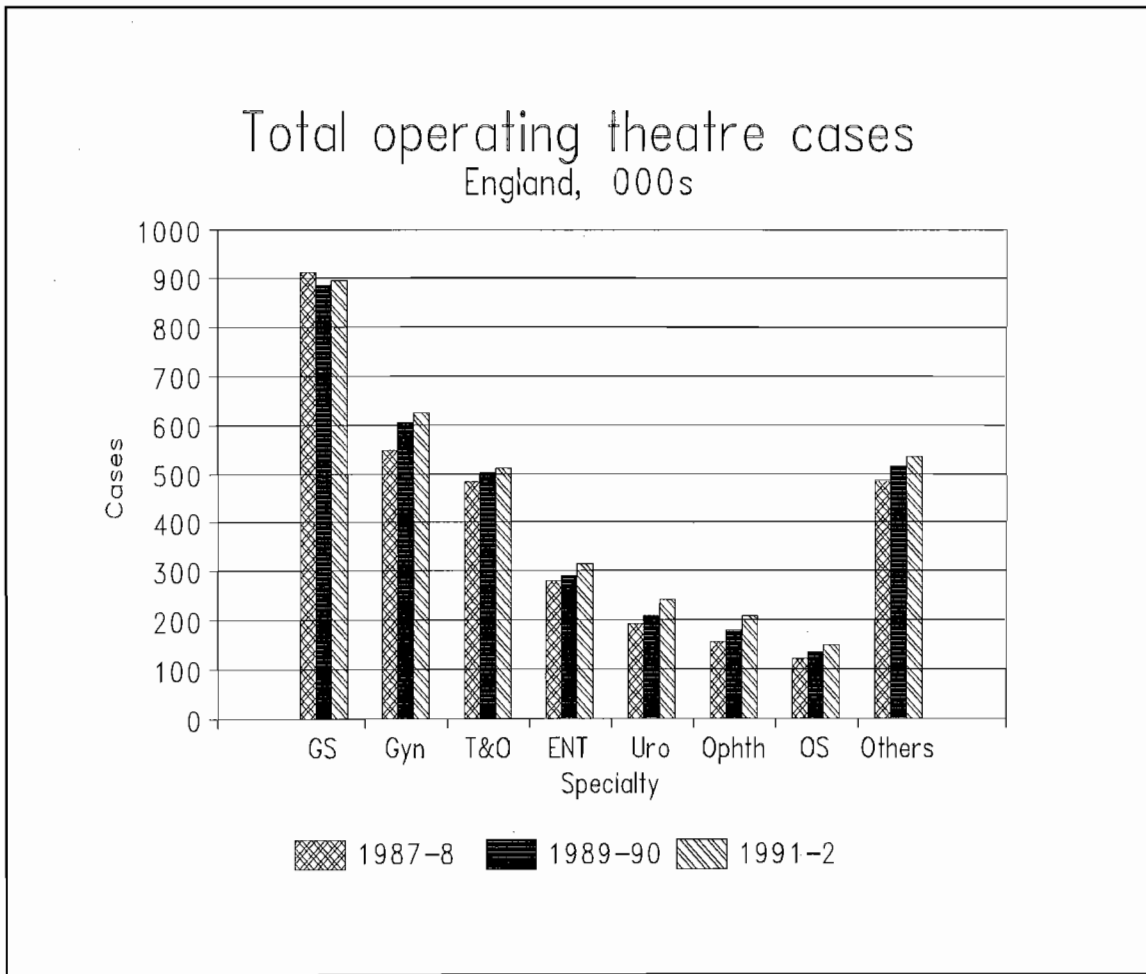
The waiting time fund, initiated in 1987, was intended to tackle bottlenecks and make faster progress in specialties with excessive waiting times by enabling districts to provide extra operating sessions and beds, appoint extra staff etc (NAO 1991). In England in 1987-8 there were a total of 693,000 scheduled operating sessions, with an average of 3.8 cases operated on per session, a total of 2.66 million cases in scheduled sessions and 3.177 million cases operated on. By 1989-90 this had risen to 741,000 scheduled sessions, 2.78 million cases in scheduled sessions and 3.321 million cases in total. This upward trend has continued, with 792,000 scheduled sessions in 1991-2, 2.955 million cases in scheduled sessions and a total of 3.519 million cases. Figure 8 shows this increase by main specialty group.

Figure 7



Source: DH Statistical Bulletins

Figure 8



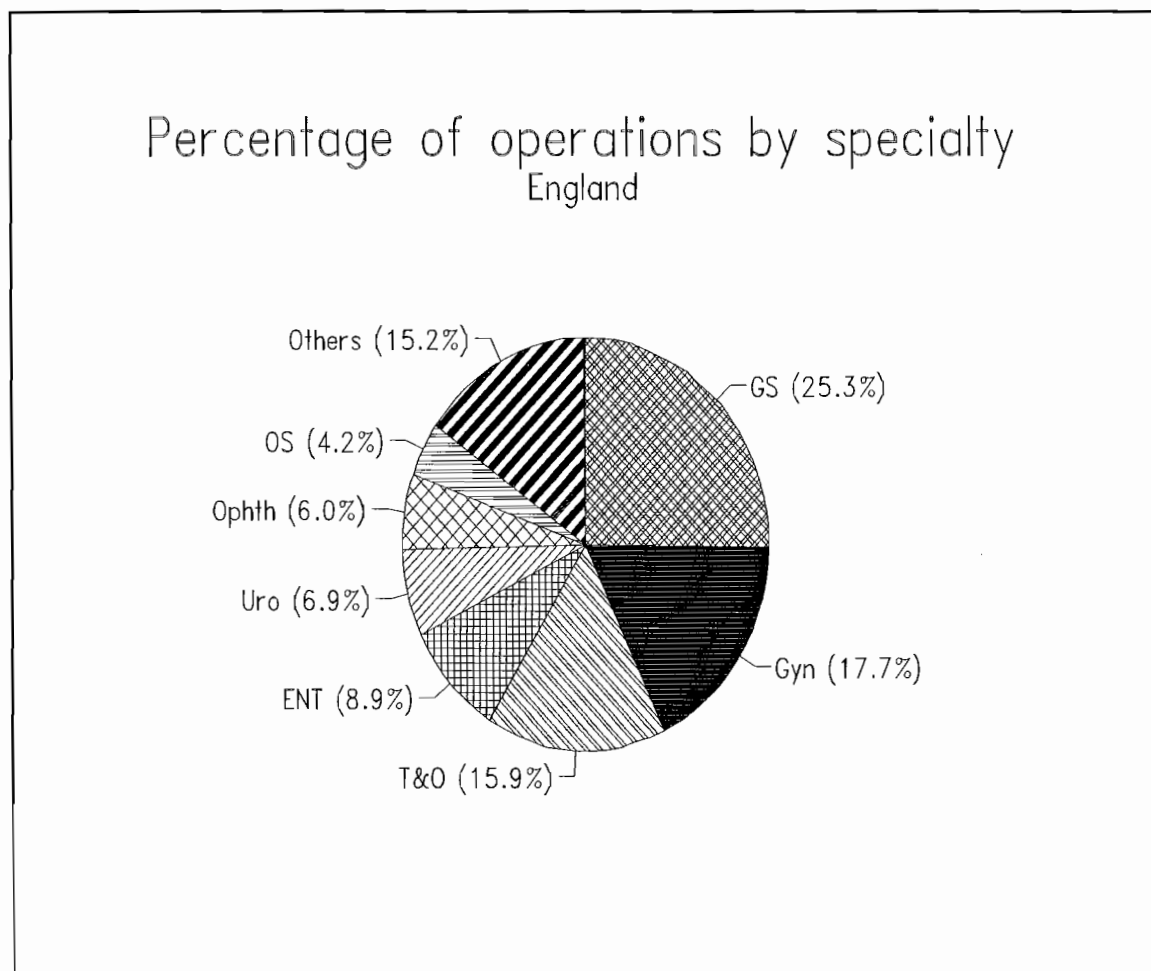
Source: DH Statistical Bulletins

Notes: GS = General Surgery
Gyn = Gynaecology
T&O = Trauma and Orthopaedics
ENT = Ear, Nose & Throat
Uro = Urology
Ophth = Ophthalmology
OS = Oral Surgery
Others includes Neurosurgery, Plastic Surgery, Cardiothoracic Surgery, Paediatric Surgery and others.

The number of operations in all of the main specialties have increased since the introduction of the waiting time fund, except for general surgery which has decreased slightly. The rates of increase are similar, with the exception of trauma and

orthopaedics, which has increased at a slower rate than other specialties. Figure 9 shows the proportion of all operations by main specialties in 1991-2.

Figure 9



Year: 1991-92

Source: DH Statistical Bulletins

Notes: abbreviations as in Figure 8

6.3 Conclusions

The 'Waiting List Initiative' and more recent government pledges in the 'Patients' Charter have aimed to reduce waiting times, particularly the number of long waits, with guarantees that no-one should wait more than two years for a procedure. This policy concentrates on hospital activity, and measures success or failure in these terms. It is apparent that hospital activity has increased in recent years, and long waiting times have been reduced. However, the utility of these achievements could be ambiguous. No consideration has been given to the composition of waiting lists, or to the proven effectiveness of treatment in terms of health benefits. Many procedures for which waiting lists exist are of unproven effectiveness. A good example of this is the surgical procedure for treating glue ear in children. There is a relatively long waiting list for grommet insertion to treat this condition, but in many cases the condition is resolved without treatment before surgery takes place (Effective Health Care Bulletin 1992, Sheldon et al 1992). In this case, the existence of a waiting list reduces unnecessary surgery. There may well be other conditions where 'watchful waiting' is the most efficient course of action.

The composition of waiting lists must be considered if waiting lists are to be dealt with efficiently. As shown by Gudex et al (1990), it is possible to prioritise waiting lists and devote more resources to conditions where the greatest additional health benefits are achieved per unit of resource. Policy initiatives which concentrate on long waits (over one and two years) may be devoting resources to minor conditions at the expense of more urgent cases with shorter waits.

The policy focus on *activity* is an unsuitable goal and an unsuitable measure of 'success'. In allocating resources to deal with waiting lists as in all other policy areas the appropriate target should be *efficiency*, which requires the analysis of costs and outcomes. Increasing activity, where this activity is often of unproven effectiveness is inefficient and inappropriate.

The waiting time initiative has been allocated a total of over £225 million (NAO 1991, DH Press Releases) between its introduction in 1987 and 1993-4. While activity has increased significantly over this period it is difficult to identify how much of this activity is a result of programmes funded by the waiting time fund. Funds are allocated at the discretion of the Department of Health and Regional Health Authorities without any explicit criteria, and there is no clear mechanism for evaluating the success of any schemes.

7 FORMATION OF NHS EXPENDITURE PLANS

The overall budget of the NHS, as of all central government expenditure, is determined by the annual public expenditure round. This is a complex procedure of bargaining between the Treasury and all government departments which culminates in the Chancellor's Autumn Statement, every November. The case for increased funding of the NHS is prepared each year by officials in the Department of Health, who then formulate a bid by the Secretary of State for Health to the Treasury. Bilateral discussions between the Department and the Treasury then take place to negotiate a compromise between the Departmental bid and the Treasury "bottom line".

In the Department of Health, bids for the three main sectors (hospital and community (HCHS), primary care (FHS) and personal social services (LAPSS)) are formulated separately.

The FHS bid is derived from forecasts of demand for primary care services, using forecasting models which are not publicly available. These expenditure trends are greatly influenced by demographic change, particularly the increasing proportion of dependent elderly people who are heavy users of primary care services, and technological change, particularly the introduction of new pharmaceutical products.

Until 1985 the HCHS bid was formulated on the basis of the forecast effects of demographic and technological change and other factors such as HIV-AIDS. Since 1985 this process has been informed by a "future cost of present policies" model which extrapolates unit costs by sector to maintain present policies thereby estimating future costs. Other factors such as demographic and technological change, the impact of "efficiency savings" and different policy objectives can then be added to the model. The "future costs" model is however not publicly available.

Demographic and technological change elements are very crudely incorporated into the forecasting procedure. The estimated increases in expenditure arising from the increased number and dependency of elderly people (eg 0.5% in 1993-94, see Table 12) are computed by multiplying the numbers in the 65-74, 75-84 and over 85 age groups by average present expenditure on these groups. The resulting estimates of growth in demand for HCHS from demographic change is shown in Table 12. The use of this

average expenditure figure begs the question of whether present expenditure is appropriate and also whether the additional expenditure intended to deal with demographic change is allocated efficiently.

The impact of technological change on resource allocation is incorporated into expenditure forecasts by an assumption that technology inflation increases expenditure by 0.5% each year. This figure dates from a calculation made by DH officials in the early 1980s. The increase in cases handled, after allowing for demographic change in unit cost, was combined with the increase in average costs due to changes in the specialty mix towards higher cost techniques. These two effects combined were estimated to add 1.2% to acute sector costs, or about 0.5% for hospital and community services as a whole (Harrison and Gretton, 1986) and this figure has been used as an estimate of the cost of technology since. This takes no account of the distinction between technology which increases costs, for example expensive drugs for previously untreated conditions, and that which decreases costs, for example by reducing the need for surgery. It also ignores the changes in the standard of care that more advanced techniques may bring about (Harrison and Gretton 1986).

The LAPSS bid is not determined by the Department of Health although DH officials are involved, with those in the Department of the Environment (DoE) who have responsibility for local government. The joint DoE-DH committee is chaired by a DoE official and DH involvement appears to be minimal.

Table 12 **Estimated growth in demand for HCHS from demographic changes**

Year	Increase Over Previous Year
1978/79	1.0
1979/80	1.3
1980/81	1.1
1981/82	0.4
1982/83	0.4
1983/84	0.5
1984/85	0.6
1985/86	1.3
1986/87	0.9
1987/88	1.4
1988/89	1.0
1989/90	0.9
1990/91 (e)	0.7
1991/92 (e)	0.6
1992/93 (e)	0.7
1993/94 (e)	0.5
1994/95 (e)	0.5
1995/96 (e)	0.9

Source: The Government's Expenditure Plans 1992-93 to 1994-95, Treasury 1992a.

The two models used to construct HCHS and FHS bids relate primarily to current (revenue) expenditure. Capital bids made by the Department are not subject to any formal process. Individual proposals from Districts and Regions for capital expenditure are required to undergo formal investment appraisal procedures in order to prioritise expenditures. However, the overall budget to fund these proposals appears to depend on DH officials' views of what is a "reasonable" bid in the current public expenditure round.

The formulation of the Departmental funding bid is clearly important in determining overall NHS expenditure. However, trends in expenditure between sectors cannot always be explained by this procedure. For example, trends in demography and technological change significantly influence hospital expenditure, but this has been increasing relatively slowly throughout the 1980s, with an increase of only 11.6% in real (volume) terms since 1978/79 (see Section 2). In order to deal with the changes in demography and technology there must therefore have been savings in other parts of the budget.

Increasing expenditure on family health services may be at least partly due to demographic factors, as elderly people (an ever increasing proportion of the population) are major users of primary care, particularly general medical practitioners and pharmaceutical services. However, expenditure in these areas is demand determined, and therefore outside the direct control of the DH. Expenditure on GPs is determined by the supply of newly graduating doctors going into general practice, which had increased considerably in recent years. New recruits have outweighed retiring GPs and this has increased the GP stock and reduced average list sizes over recent years.

Expenditure on pharmaceuticals is primarily dependent on the prescribing behaviour of doctors, particularly GPs. Whilst the DH has attempted to influence this with the encouragement of generic prescribing, selected lists, use of prescribing analysis and cost (PACT) data and the recent introduction of the indicative prescribing scheme, expenditure on pharmaceuticals has increased at a faster rate than overall NHS expenditure. This may be partly due to the introduction of new high-tech drugs, which can in some cases reduce overall costs by eliminating the need for surgery. However, the working of the Pharmaceutical Price Regulation Scheme also serves to negate pharmaceutical cost-containment policies through price-profits regulation.

8 CONCLUSION: NHS EXPENDITURE - ITS GROWTH AND UTILISATION

As in other parts of the public sector, the rhetoric of expenditure cutting during the Thatcher years is not reflected in the reality of NHS funding. Since 1979, real NHS expenditure has increased significantly, whether adjusted from nominal levels by the GDP deflator, which shows a real increase of 50%, or by the NHS pay and prices deflator, which shows a smaller, but still significant increase of 22%. It is not immediately clear where these real increases have been consumed, although some indication of the utilisation of this growth in NHS expenditure has been described above.

The hospital sector has been the most constrained in terms of expenditure increases. In volume terms (adjusted by the HCHS pay and prices index), expenditure in the hospital sector has increased by 11.6%. Salaries and wages of staff directly employed by the NHS have remained around 70 per cent of Health Authorities' expenditure in

England since 1979 (HPSS statistics, various). It is therefore clear that the majority of expenditure increases in the hospital sector are on personnel. As described in Section 3, there have been some changes in the personnel employed by the hospital sector. In particular, there have been increases in medical staff, more specifically senior medical staff, as a result of deliberate policies of moving from a consultant led service to a consultant based service (MMSAC 1992), and attempts to reduce the hours of junior doctors. Numbers of nursing staff have also increased, but at a slower rate, and administrative and managerial staff numbers have increased greatly as a result of the implementation of the Griffiths report (1983) and the 1989 reforms. Reduced expenditure on ancillary staff and works professional and maintenance staff due to contracting out has to a certain extent cancelled out the increases in staff in other occupations.

The staff increases in the hospital sector have permitted significant increases in activity, as discussed in Section 6. Government publications compare increases in activity levels with increases in expenditure in a cost weighted activity index (Treasury 1993). Activity increases in various areas of HCHS since 1978-79, weighted by the proportion of expenditure they receive suggests that activity levels (including in-patient and day case episodes, out-patient attendances, A & E services and community health services) have increased by nearly 29 per cent to 1991-92, while HCHS input costs have increased by around 9 per cent over the period (Treasury 1993). The Department of Health interprets this information to state that "efficiency" has grown by almost 20 per cent over the period (Treasury 1993). This implication however is very misleading. The cost weighted activity index is not a true measure of efficiency as it considers only

inputs and processes in health care, at no time considering outcomes. In addition, as discussed in section 6, the change in measures of activity to finished consultant episodes (FCEs) leads to potential ambiguities. The aim of increasing 'activity' using this measure can create undesirable incentives for service provision. For example, in surgical specialties, the 'output' measure is an operation, or a finished consultant episode. Switching from more complex surgical procedures to quicker, simpler procedures such as from coronary artery bypass grafts to tonsillectomies would, by this measure, raise activity and therefore 'efficiency'. Finally, the policy of increasing service activity can be questioned on efficiency grounds, as many of the 'activities' are of unproven cost-effectiveness. Advocacy of increasing activity may therefore result in increased funding for interventions of little value. A more sensible policy would be to focus on underfunded opportunities for areas where proven quality improvements are possible.

The increases in NHS expenditure in the hospital sector appear therefore to have resulted in increasing staff numbers, which have in turn resulted in increasing activity. In addition, there have been some small increases in expenditure on capital, as discussed in section 4.

Increases in family health services (FHS) expenditure have been proportionally much greater than in the hospital sector, with volume increases (adjusted by the NHS pay and prices deflator) of 32%. Again, the majority of these increases have been spent on increasing staff levels, with significant increases in the number of general medical and dental practitioners over this period. In addition, GPs have increasingly employed other

staff in general practice, particularly practice nurses and practice managers. The contract for general practitioners, implemented in 1991, also gives incentives for increased activity, by encouraging screening, health promotion clinics and other activities of largely unproven cost-effectiveness (Scott & Maynard 1991). In June 1993, the Department of Health announced that 90 per cent of GPs are planning to run programmes for the prevention of coronary heart disease and stroke, and to offer asthma and diabetes management clinics.

Finally, expenditure on pharmaceutical services has increased significantly over the period, as a result of both increasing numbers of prescriptions and increasing drug prices. Expenditure on personal social services has increased significantly over the period. This is also a highly labour intensive area, and expenditure increases have funded relatively large increases in staff numbers, particularly senior staff (Table 5).

The National Health Service is a labour intensive service. Over the period 1978-79 to 1992-93 there have been considerable increases in staff numbers in many parts of the service, and also increases in real wages at a faster level than in the rest of the UK economy (which is reflected in the fact that the NHS pay and prices index, dominated by wage rates, has consistently increased at a faster rate than the GDP deflator). In many areas of the service there have also been trends towards proportionally increasing numbers of senior staff relative to junior staff members. This is the case in medical staff, administrative staff and personal social services staff members. Increasing expenditure on salaries and wages is therefore a product both of increasing staff numbers and increasing relative wages.

Another area of significantly increasing expenditure is in pharmaceutical services. Again this is a product both of increasing volume and prices. Numbers of prescriptions dispensed has increased over this period, and at the same time the average net ingredient cost (NIC) per prescription has increased from £1.96 in 1979 to £6.15 in 1991 (OHE 1992), an increase of approximately 24 per cent in real terms (adjusted by the GDP deflator). This is largely due to changes in product mix rather than increases in the prices of established drugs. New drugs tend to be more expensive, particularly as more pharmaceutical products are manufactured using costly processes such as genetic engineering. The research and development costs of drugs manufactured in this way are high, and the industry demands a return on such investments. Studies have suggested that on average the R & D cost per approved new chemical entity is over US\$200 million (in 1987 prices) (DiMasi et al 1991). As a consequence, drugs such as G-CSF (Neupogen, a treatment to prevent neutropenia in patients undergoing chemotherapy) costs up to £630 for a course of five treatments, and r-tPA (Actilyse, a thrombolytic agent used in patients after acute myocardial infarction) costs up to £816 for a single dose (MIMS 1992). While the government has attempted to stem the increase in the pharmaceutical budget by encouraging generic prescribing, provision of PACT data, limited lists and other initiatives, the cost of drugs continues to increase rapidly.

In the future there is likely to be continuing if not increasing pressure on health care expenditure. The government is committed to a number of policy and service developments including the implementation of Patients' Charter (DH 1991) initiatives, the Health of the Nation (DH 1992) and obligations to fund European Community

initiatives.

The preceding analysis of the utilisation of past expenditure trends gives some indications of where there is likely to be pressure on expenditure in the future. The hospital budget, while this has been relatively constrained since 1978-79, with real (volume) increases of around 11.6 per cent, much lower than other areas of the health service, is not likely to increase in the future, as possibilities of cost cutting through contracting out remain substantial. In addition, the relative shift in recent years towards more highly paid members of staff, particularly medical staff and administrative staff is likely to cause budgetary pressures in future as senior staff are likely to demand proportionally higher relative wage increases.

There are however some influences which could counter the budgetary pressures on hospitals. In the years 1993-95, public sector pay has been tightly controlled, delaying budgetary pressures from wage increases. In addition, reviews such as the Tomlinson report (DH 1993b) are likely to result in hospital closures which, while they will require considerable expenditure to implement, could result in the long run in further shifts in NHS expenditure away from the hospital budget. Finally, the trend towards shorter lengths of stay and more day case surgery is likely to continue. Average lengths of stay in the UK are still high relative to other countries such as the USA, and there could therefore be potential to reduce these further. This is likely to lead to resource savings per case and increased patient throughput.

Community health and personal social services have both increased significantly over the

past decade, and this is likely to be an area of continuing increases in expenditure as policies to improve care in the community are implemented. Investment in community health care is also required to deal with demographic changes, particularly the ageing population, and to support hospital services as lengths of inpatient stay continue to fall.

Current trends in general medical services have indicated increasing numbers of practitioners and falling list sizes. If the BMA target of an average list size of 1,700 is to be met, this will require a continuing but slowing increase in the number of GPs (MMSAC 1992). However, it is not obvious that this target is necessary. There is some evidence that list sizes could increase to ratios of 1 GP to 3,000 or 4,000 patients with nurse substitution (Fry 1977, Marsh 1991). Such changes in skill mix could result in considerable resource savings.

The budget for pharmaceutical services has increased considerably despite recent government initiatives. This is likely to continue unless there is some change in the pharmaceutical price regulation scheme (PPRS), which sets a minimum rate of return on historic capital of around 20 per cent. This means that if DH policies to reduce the size of the pharmaceutical budget are successful, they are likely to be negated by the PPRS, which would permit price increases in drugs if industry profits fall.

The level of public expenditure devoted to the national health service is largely a political decision - the overall budget, as with all other departments, is determined by the political bargaining of the annual public expenditure round. Government claims of real increases in expenditure since 1979 are valid, although the increases are smaller

than claimed when nominal figures are adjusted by the NHS pay and prices deflator, which more accurately reflects the goods and services which can be bought with NHS expenditure. However, it is not generally possible to discern accurately what these expenditure increases have financed in terms of patient care. The growth in expenditure has been very uneven between different sectors of the NHS. Whether these differences are the unintentional product of institutional arrangements or proven cases for increased funding is not clear. To achieve efficiency in the NHS, expenditure increases must be directed to areas of proven cost-effectiveness. This goal would be assisted by publication of more detailed breakdowns of expenditure increases, and more economic evaluation of new and existing health care programmes. In future there will be increasing pressure on limited NHS resources due to demographic change and technological advance. The vague ways in which NHS expenditure is monitored and "value for money" determined will have to be replaced by more sophisticated monitoring of spending and the provision of cost effectiveness data to ensure society's scarce health care resources are used effectively. There is evidence of considerable scope to improve the efficiency of resource allocation in the NHS and this may best be achieved by the 'leverage' of parsimonious funding.

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