

## 2: Funding: Now and for the future

### 2.1 Introduction

Levels of funding, both now and in the future, are of critical importance and serve to set the overall boundaries or constraints of what is possible in terms of the services and care that can be delivered. This first section therefore examines historic and current funding levels in Northern Ireland, tracks current spending from various perspectives and importantly, adapts the approach and results employed by the first Wanless Review of future funding in the UK to suggest possible spending paths for health and social care services in Northern Ireland.

### Section Conclusions

This section of the report has examined the main factors expected to impact on the level of resources required in the Northern Ireland health & social care sector in the coming years. Although there are some variations, these factors broadly reflect international trends. The demand for health care is expected to increase with the expectations of patients and the general public for a high quality, responsive, patient centred service. In terms of supply, technological developments will raise costs.

To quantify future resource requirements, Northern Ireland's need adjusted share of the UK expenditure projections from the Wanless Review was estimated. A range of need factors were considered from the HM Treasury position of no adjustment for need to an optimistic needs adjustment suggested by DHSSPS. Whilst the current HM Treasury approach using the Barnett Formula is sub optimal - because the differing needs of the population in Northern Ireland are not recognised - the changes made to the needs assessment (NAS) model as part of the 2002 Needs and Effectiveness Evaluation could not be endorsed by the Review at this time as the supporting evidence required further development. Given this, the judgement of this Review (to be confirmed or denied in the light of any subsequent results arising from a UK-wide allocation model) is that a reasonable need differential between England and Northern Ireland should be around 7%.

This implies that additional real resources of between £3.3bn and £4.4bn will be required in the coming years to deliver a high quality service. The delivery of such a service is dependent not only additional resources but also how services are delivered. The level of public engagement and health seeking behaviour will also determine whether the resources required will be at the lower end of the range. In terms of immediate Northern Ireland Budget priorities, whilst the preferred need indicator would imply that the health & social care sector in Northern Ireland is currently over-provided relative to England, this does not mean that the health and social care services should receive anything less than its Barnett consequential. However, and as this review explores later, there is a concomitant commitment on the part of the health and social care services to explore ways in which current resources are used more effectively and efficiently to maximise the attainment of key goals for the benefit of patients, clients and users.

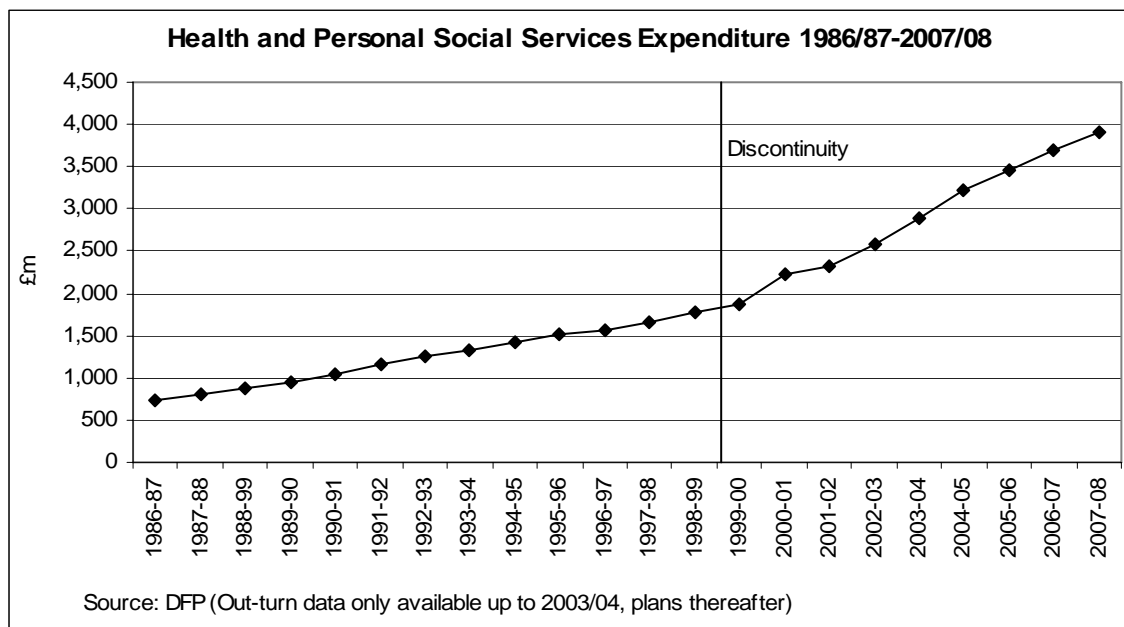
## 2.2 Historic trends in funding

To set some context for possible future spending on health and social care in Northern Ireland here we describe current and historic funding levels, making comparisons where possible with other regions and countries, outlining the global budget setting process for Northern Ireland, and analysing how recent increases in funding have been spent.

### 2.2.1 Funding levels

Figure 2.1 shows that the funding available for health and personal social services (HPSS) has increased significantly over the past twenty years. In addition, whilst comparison are made more complicated by changes in accounting practices there does appear to have been an increase in the growth rate of HPSS spend subsequent to 1999/00 which is expected to continue under current Government spending plans.

**Figure 2.1: Health and Personal Social Services expenditure is expected to have increased by 8.4% a year on average over the twenty years since 1986-87<sup>2</sup>**

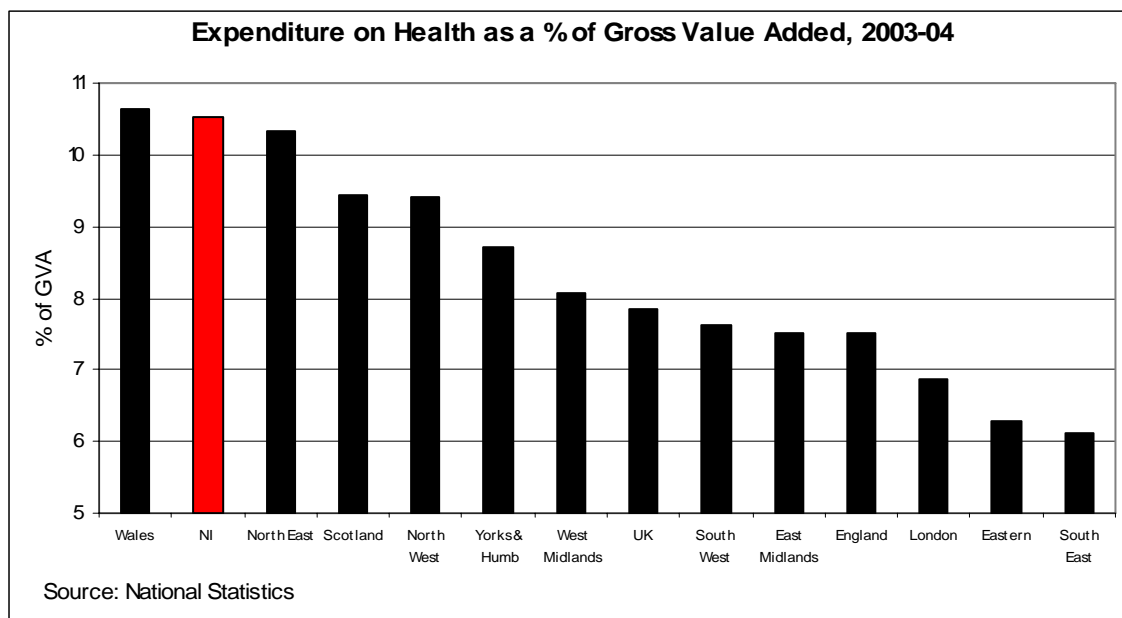


Comparing levels of health and social services expenditure between countries or regions is not an exact science; definitions of care vary and the way spending is accounted for can also differ. Further, it is unwise to assume that higher spending necessarily means better health outcomes or greater activity. And similarly, it should not be assumed that all spending differences are unjustified; differences in the need for health and social care and the efficiency with which different systems convert financial inputs into health care outputs and health outcomes often provide legitimate reasons for differences in levels of spending .

<sup>2</sup> Changes in accounting practices particularly in 2000/01 with the move from cash to accruals means that comparisons in spending over time need to be treated with care whilst the transfer of Preserved Rights and Residential Care Allowances from DSD resulted in a significant one-off uplift. Therefore the Figure is intended to be illustrative only.

Bearing these caveats in mind, there are a number of ways in which relative levels of expenditure on health and social care can be considered. The 2001 Interim Wanless Report presented health expenditure in the context of overall economic activity. On this basis, figure 2.2 shows health spend (excluding social care) as a proportion of Gross Value Added (GVA)<sup>3</sup> for the UK regions.

**Figure 2.2: 11% of the value of all economic activity in Northern Ireland is devoted to health care (health excluding social care spending a percentage of GVA for UK regions, 2003-04)**



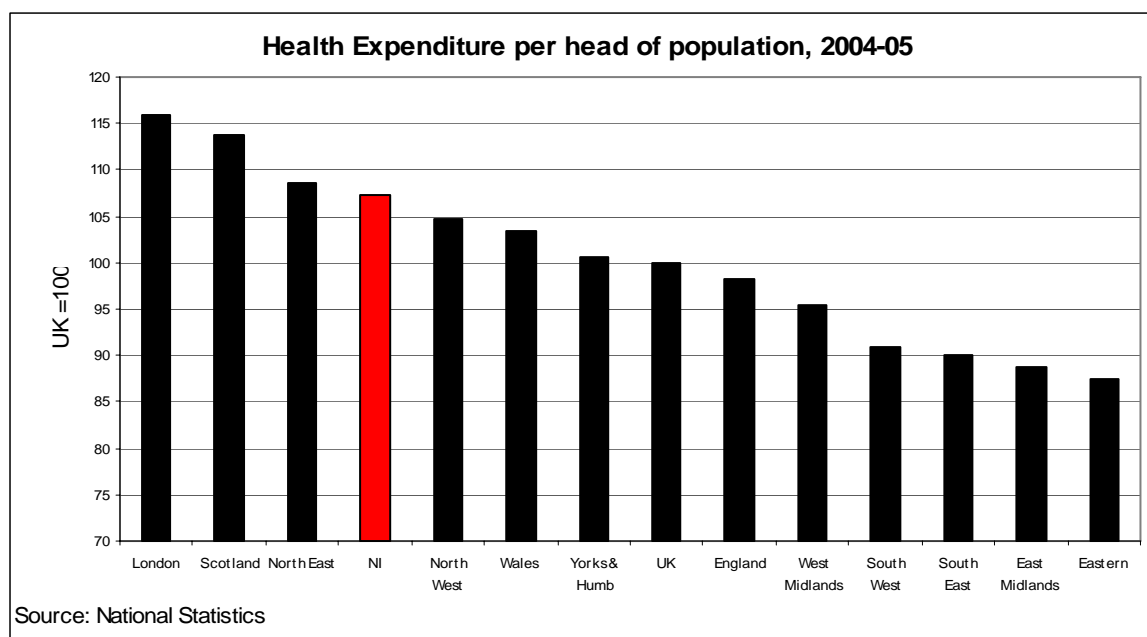
Although on this basis Northern Ireland has the second highest level of health spend, this is more a reflection of the region's relatively low level of GVA per head than its health spend<sup>4</sup>.

A better measure of the relative level of health spend is on a per head basis - as shown in figure 2.3. Figures for 2004/5 show that Northern Ireland had the fourth highest level of spend per head on health of all the UK regions, and spending was 7.3% higher than the UK average. The general pattern revealed in the figure is to a large extent to be expected; per capita funding allocations in England, for example, are specifically designed to be unequal, being driven by the need health care as part of a general policy to improve equity of access to the NHS.

<sup>3</sup> Gross Value Added is the current preferred measure of economic activity for UK regions replacing Gross Domestic Product

<sup>4</sup> Around three-quarters of the difference in health spend as a % of GVA between NI and the UK as a whole can be accounted for by NI's lower level of GVA per head.

**Figure 2.3: Northern Ireland spends 7% more per head of population on health care services (excluding social services) than the UK average(2004-05 (UK =100))**

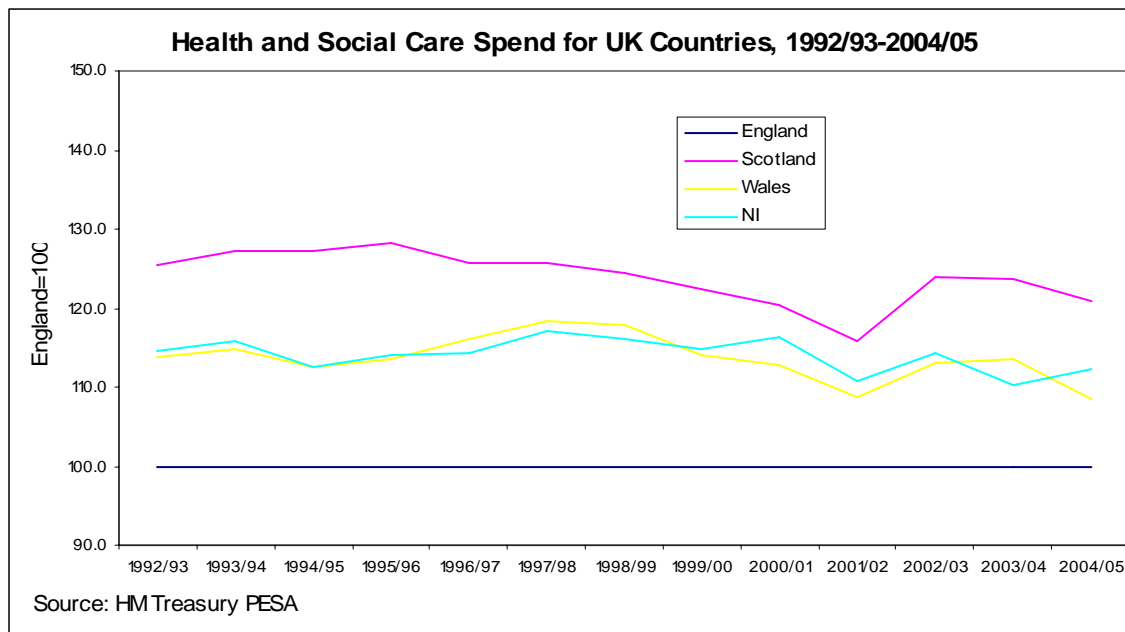


It is important to note, however, that there is no resource allocation mechanism across the whole of the UK; while differences in need may explain some or indeed all of the differences in per capita spend between Northern Ireland and the rest of the UK, this should not be assumed to be the case.

During the 1990's, per capita health and social care spending in Northern Ireland was consistently higher than in England (although lower than Scotland) in spite of the operation of the Barnett Formula<sup>5</sup>(after the former Chief Secretary to the Treasury, Joel Barnett, who, in the 1970s, proposed it as a short term solution to Cabinet disputes over spending). However, in more recent years, the spend per head gap with England has narrowed (see figure 2.4). In the context of this trend continuing, it is important to have clarity as to the extent to which the need for health expenditure in Northern Ireland is higher than in England. This issue is addressed in Section 2.3.4

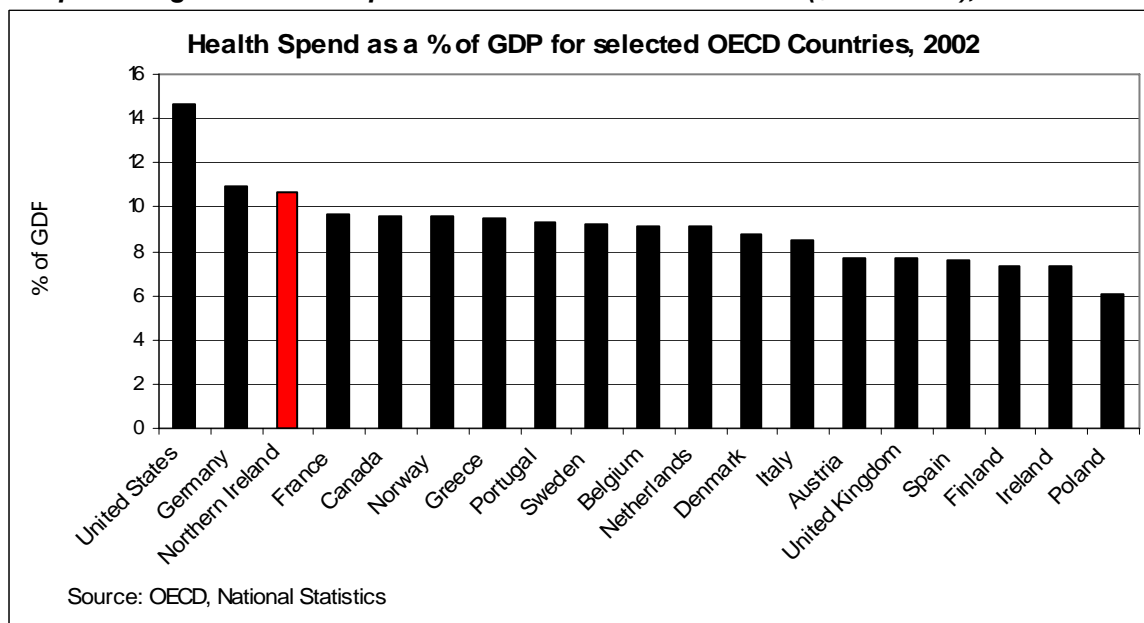
<sup>5</sup> The Barnett formula (discussed below) operates by allocating Scotland, Wales and NI its population share of growth in expenditure in England and as such is expected to lead to asymptotic convergence in spend per head levels between the UK countries. There are other minor adjustments to take account of the fact that some services are delivered on a UK wide basis and it would not be appropriate for the devolved administrations to receive a share whilst there is a VAT abatement factor applied specifically to Northern Ireland

**Figure 2.4: There has been some marginal convergence in the level of Health and Social Care spend per head for UK countries since 1992-93**



Internationally, figure 2.5 shows that expenditure on health care in Northern Ireland as a proportion of GDP is higher than all OECD countries with the exception of Germany and the United States.

**Figure 2.5: Northern Ireland has a relatively high level of Health (excluding social care) Spend as a percentage of GDP compared to selected OECD countries (\$PPP basis), 2002**

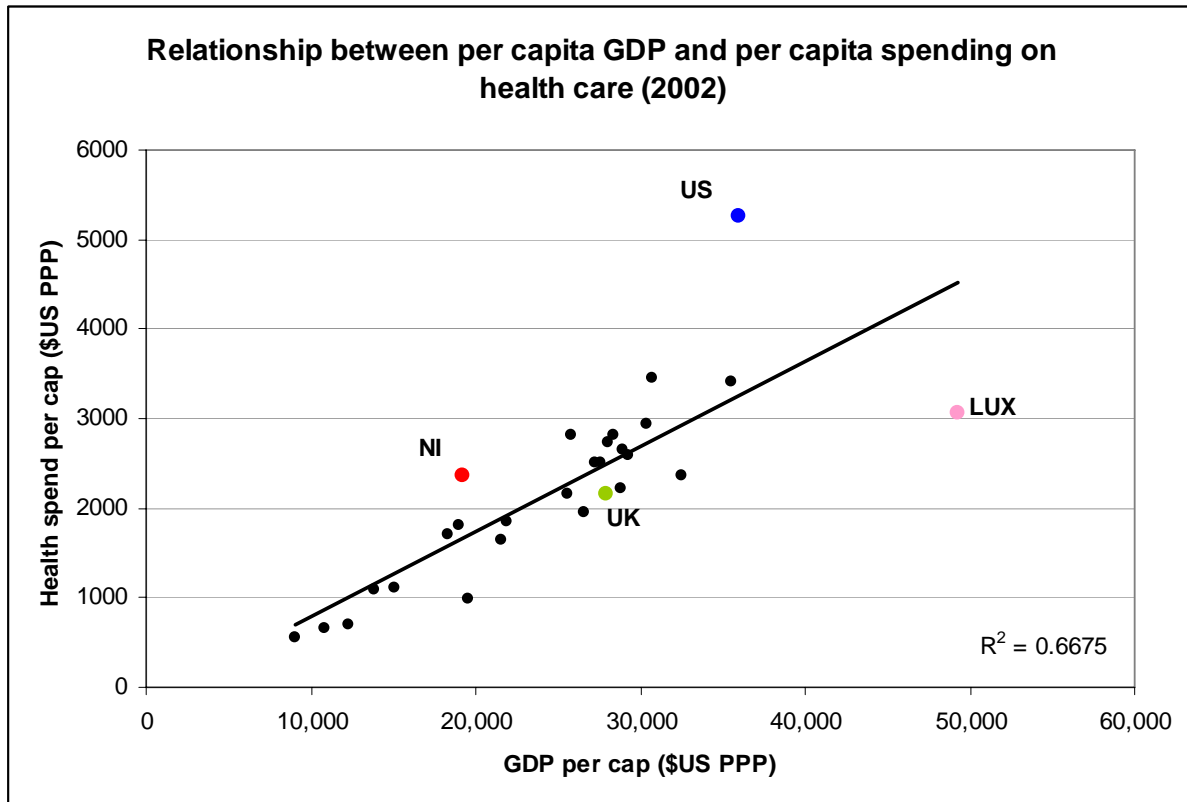


However, as with spend as a proportion of GVA, the relatively high spend as a proportion of GDP is in part explained by the fact that Northern Ireland's per capita GDP is comparatively low. As figure 2.6 shows, Northern Ireland appears to spend more than might be expected given its per capita GDP. In fact, from this point of view, Northern Ireland appears to be spending nearly 30% more than expected. For

comparison, the UK as a whole is spending around 16% less than expected and the US 38% more.

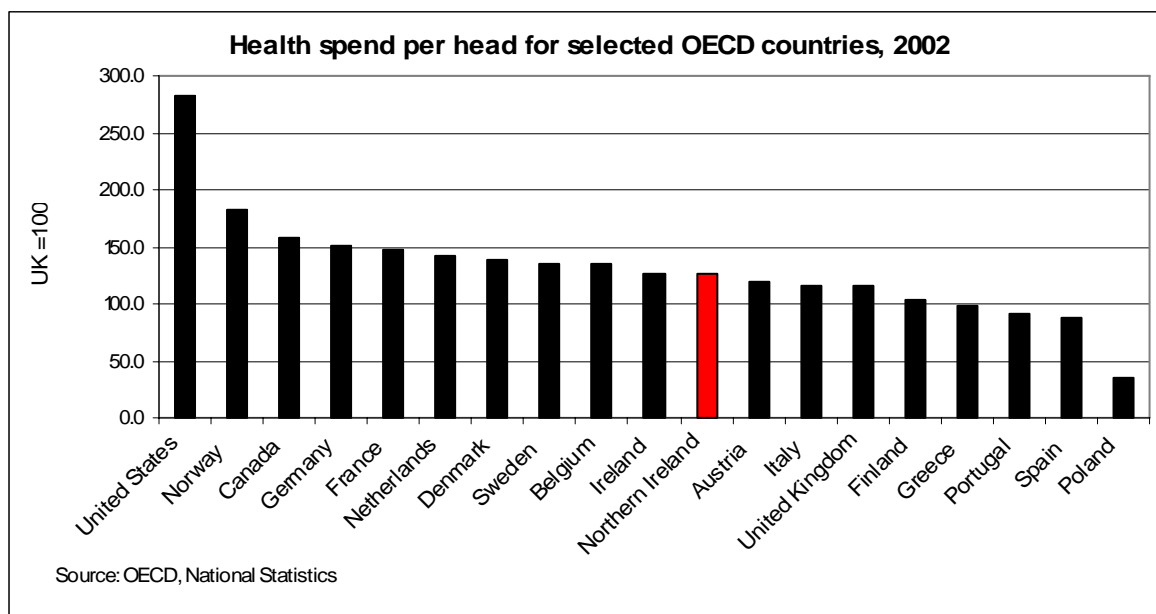
But this apparent position of overspending relative to its GDP is, as already noted, partly explained by Northern Ireland's relatively low level of GDP. In looking forward to what might be a reasonable and, in particular, an *affordable* level of spending we note in section 2.3.4 that international comparisons based on GDP are, for various reasons, problematic when considering Northern Ireland's position.

**Figure 2.6: Northern Ireland appears to spend more on health (excluding social care) care than might be expected given its per capita GDP**



The difficulty of using health spend as a share of national or regional wealth is highlighted when comparing Northern Ireland's spending on a per capita basis. As figure 2.7 shows, from this perspective, Northern Ireland slips down the international spending league table.

**Figure 2.7: Health (excluding social care) spend per head for selected OECD countries (\$PPP basis), 2002**



Overall, while Northern Ireland currently has a higher level of health expenditure than most UK regions, in an international context, spending - in particular, per capita spending - is not particularly high

### 2.2.2 Setting global and local health and social care budgets

Since 1998, the Spending Review - announced bi-annually for public spending commitments three years forward<sup>6</sup> - has set the starting position for determining health and social care spend in Northern Ireland. With regard to the devolved territories, and health and social care spending in Northern Ireland in particular, the Spending Review produced by HM Treasury sets out spending in England, which forms the basis for a specific health and social care allocation through the operation of the Barnett formula.

The 'formula' is not sophisticated; it does not reflect differential health and social care needs or variations in the costs of providing services. In essence it uses the shares of total population to set the *change* in spending (not the total amounts) on certain public services in Scotland, Wales and Northern Ireland to ensure that decisions on spending (primarily in England) are reflected in other parts of the UK.

Currently, for example, a 10% increase in NHS spending in England would - via the formula - translate into an 8.9% increase in the equivalent allocation (from general taxation across the UK) for Northern Ireland<sup>7</sup>. Over the coming years, if the use of the Barnett Formula were to continue, this would suggest that spending increases will converge.

<sup>6</sup> The exception to this was the 5 year commitment to health spending set out by the Chancellor in the Spring of 2002 which was applied to England but not the rest of the UK. In practice DHSSPS have only been able to plan on a one-year basis.

<sup>7</sup> Based on the 12.2% higher level of HPSS spend in Northern Ireland than England in 2001-02

In practice, however, the actual health and social care services spend in Northern Ireland has been supplemented. Firstly, from decisions concerning the annual Northern Ireland Budget, which determines the shares of spending across all public services in Northern Ireland. And secondly, from in-year allocations (and occasionally subtractions (reduced requirements)) from (to) other budgets as a result of in-year monitoring of the state of budgets across the public sector. These latter sources of funding can be substantial, and have, between 2000/1 and 2003/4, accounted for a third of the total increase in Northern Ireland's spending on health and social care services (see Box 2.1)<sup>8</sup>

**Recommendation 1: In the light of suggested future funding (see Recommendation 3), in-year monitoring additions to health and social care budgets should cease other than in exceptional circumstances and solely on a one-off basis.**

### 2.2.3 Tracking spending

Tracking funding from these different sources can be difficult, but it is vital not only to understand in accounting or financial probity terms where and on what budgets were spent, but also to provide policy makers and the public with information which connects up the tax-spend-outputs cycle and to monitor spending associated with policy commitments: in other words, how are the financial inputs connected to the health and social care outputs?

This section of the Review, therefore, attempts a broad audit of recent years' health and social care spending.

Total health and social care spending can be analysed from a number of points of view. Below we examine spending on the basis of:

- Global spending trends in HSPSS capital and revenue
- Cost pressures (for example, pay inflation)
- Trends by sector (such as hospital and community health services)
- Organisation
- Programme of Care (POC) - such as acute and mental health
- Hospital, social and community care
- Labour inputs - health and social care staff expenditure

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<sup>8</sup> The DFP view is that In-year monitoring is to cater for unforeseen pressures – not an opportunity to bid for resources not obtained in the previous budget, although this is often the case.

## Box 2.1: Sources of funding for health and social care services

The Northern Ireland Priorities and Budget process is an annual budget process which allocates the resources to central government departments and public bodies in Northern Ireland in line with local priorities and needs. Departments submit bids for additional resources detailing the specific purposes for which they are intended which are then analysed and prioritised by DFP. Recommendations on the level of funding, and the purposes for which it is intended, are submitted to the Finance Minister for consideration and discussion with ministerial colleagues. Following public consultation and further ministerial discussions and agreement, the Secretary of State approves the final Priorities and Budget outcome.

Departmental budgets are agreed by the Secretary of State at Unit of Service level (see Figure 2.11) and a detailed control annex listing specific allocations at Unit of Business level is notified to each department (neither of these are aligned with Programmes of Care). While departments have always been expected to adhere to the allocation detail included within the control annexes or to discuss any proposed reprioritisations with DFP, there is some concern that in some material cases, this was not happening. As a result, this year, for the first time, Settlement Letters have been issued to departments (with the associated control annexes), emphasising that departments must consult with DFP before using resources specified for particular purposes (as noted in the control annexes) for any other purpose. As regards HPSS spend, this is intended to provide an assurance that the wishes of Ministers are being respected.

Allocations to Boards represent the bulk of the HPSS budget and are distributed according to a capitation formula taking account of issues such as age, sex, poverty, sparsity of population etc. While DHSSPS ring-fence certain allocations prior to applying the capitation formula, Boards, in discussion with Trusts, determine how each share is allocated to meet the needs of local populations. The other significant element of the HPSS budget relates to the funding of Family Health Services which, on the whole, operates on the same basis as in England. The remainder is accounted for by an array of centrally managed programmes for example medical/dental education and training.

While the DHSSPS allocation is agreed by the Secretary of State at Unit of Service (and implicitly at Unit of Business) level, other than where certain allocations are ring-fenced, most of the allocations to Boards are made on a bulk capitation basis. Therefore, although the Department establishes PSA targets that are subsequently linked to the HPSS PfA, Boards' business plans, and Trusts' Delivery Plans, it has proved very difficult for DFP to track whether specific budget allocations have been used for the purposes intended.

### ***Global spending trends***

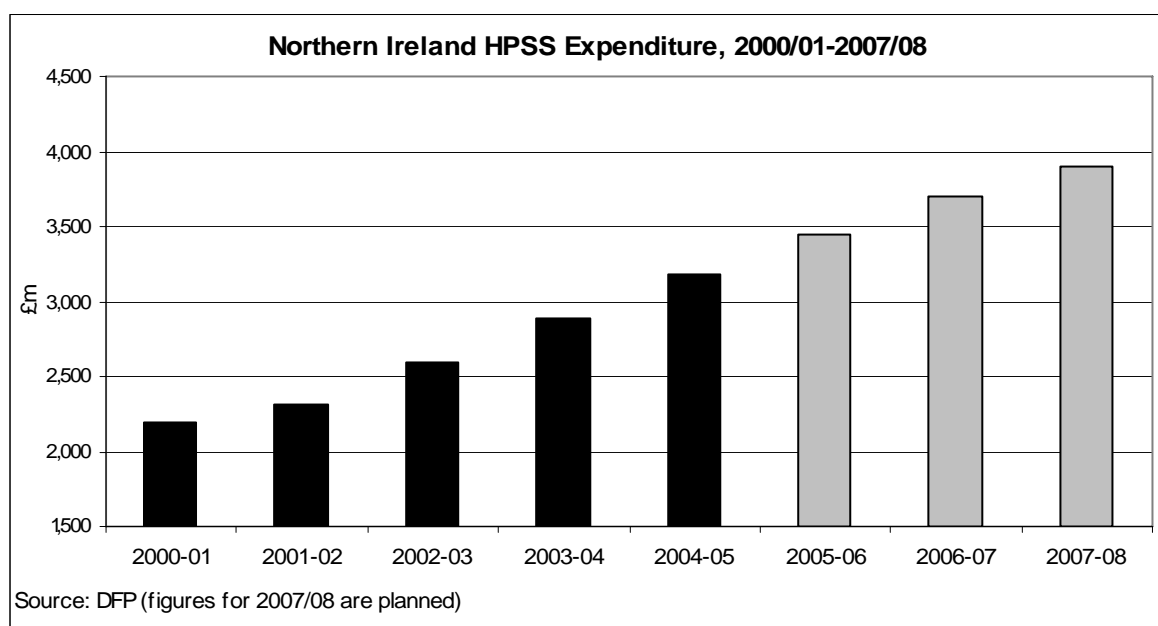
Expenditure data taken from the final out-turn Budget position held by the Department of Finance and Personnel<sup>9</sup> shows that between 2000-01<sup>10</sup> and 2004-05, health and personal social services expenditure increased by £981m or 9.5% per annum on average (figure 2.8). Over the next three years the pace of growth is planned to slacken to around 6.7% per annum, although this still represents an additional £700m of resources between 2004/5 and 2007/8 at a time when total planned allocations will increase by only 5.1% per annum.

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<sup>9</sup> All data is final out-turn except for 2004-2005 where only February monitoring is available, consequently the expenditure for the current year may change between final expenditure as currently planned and the outcome as reported after the financial year has ended. Any changes should however be minimal and the data reported here should be broadly accurate.

<sup>10</sup> This data has been prepared from the final out-turn Budget position and exclude non-budget items and PSS accruals.

**Figure 2.8: Northern Ireland HPSS spending has increased by nearly 10% per year in cash terms since 2000/1, but planned increases to 2007/8 will be around 7% per annum.**



### **Cost pressures**

Every year, a significant proportion of the cash allocated to HPSS is swallowed up by higher costs arising from increases in prices and pay. Here we examine these and other cost pressures over recent years and expectations for years up to 2007/8.

Figure 2.9 shows that almost half of the health and personal social services Budget allocation in Northern Ireland is, as expected for a labour intensive industry, spent on pay. The next largest share is on medical supplies, catering & cleaning which also includes hospital drugs, residential home costs, domiciliary care and foster care allowances.

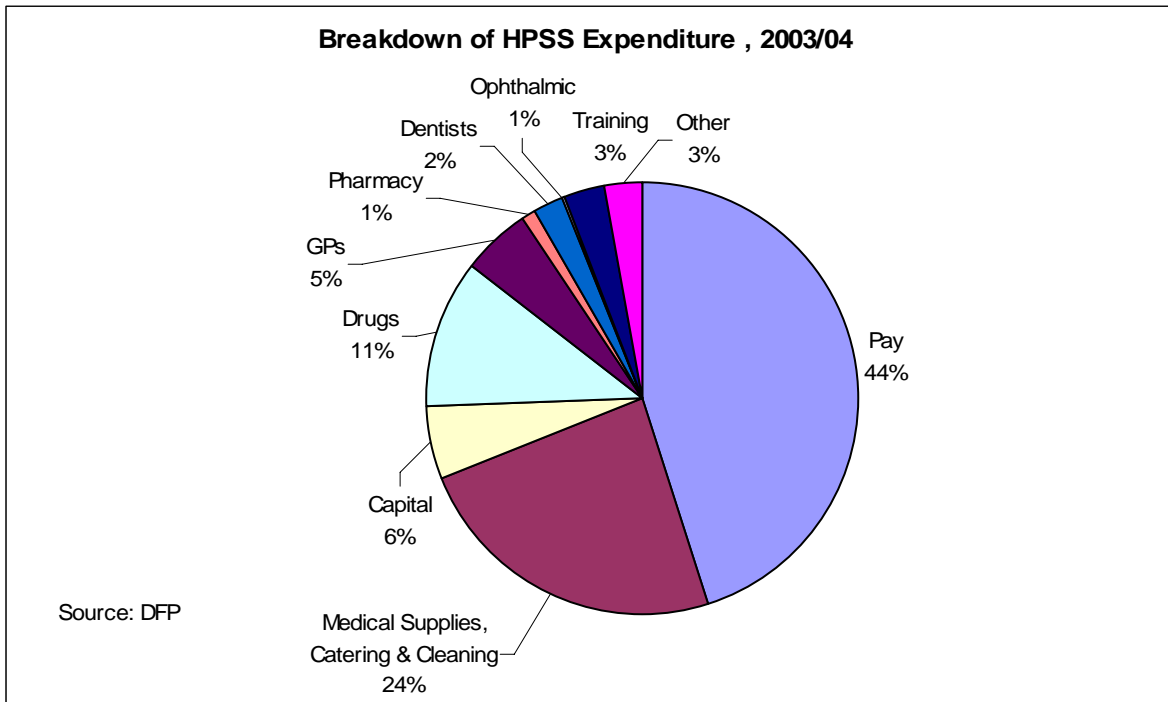
Between 2001/02 and 2003/04 approximately a quarter of the additional funds allocated to HPSS were made available for additional services with around three quarters required for pay and price uplifts<sup>11</sup>. However, allocations from the Northern Ireland Budgets for 2002 onwards, imply that only 5.8% of the growth in spending between 2004/05 and 2007/08 is likely to go towards service developments

Most of the cost pressures relate to inflationary uplifts for pay and prices - as shown in figure 2.10. New contracts and staff reviews are also expected to increase HPSS expenditure between 2003/04 and 2007/08 by around £134m with £62m attributable to the implementation of Agenda for Change, £41.4m for the new GMS contract and £14.5m for the new consultants' contract<sup>12</sup>.

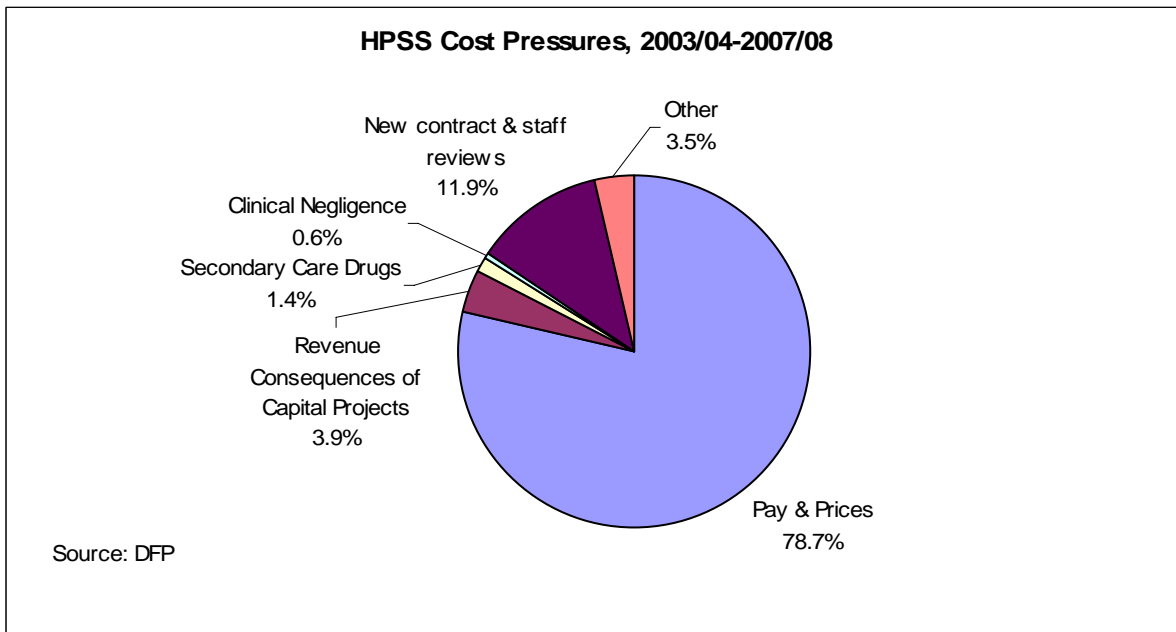
<sup>11</sup> There is some disagreement between DHSSPS and DFP on this matter with DHSSPS arguing that only 14% of funds were available for service developments.

<sup>12</sup> Collectively pay reforms are expected to increase HPSS staff costs by 7.2% (i.e. £92.5m/£1,283m.) in addition to the general pay uplift for performance and cost of living

**Figure 2.9 Pay is the largest single item of the Health and Personal Social Services Budget allocation, 2003/04**



**Figure 2.10: The most significant HPSS Cost Pressure over the period 2003/04-2007/08 will be pay & prices inflation<sup>13</sup>.**



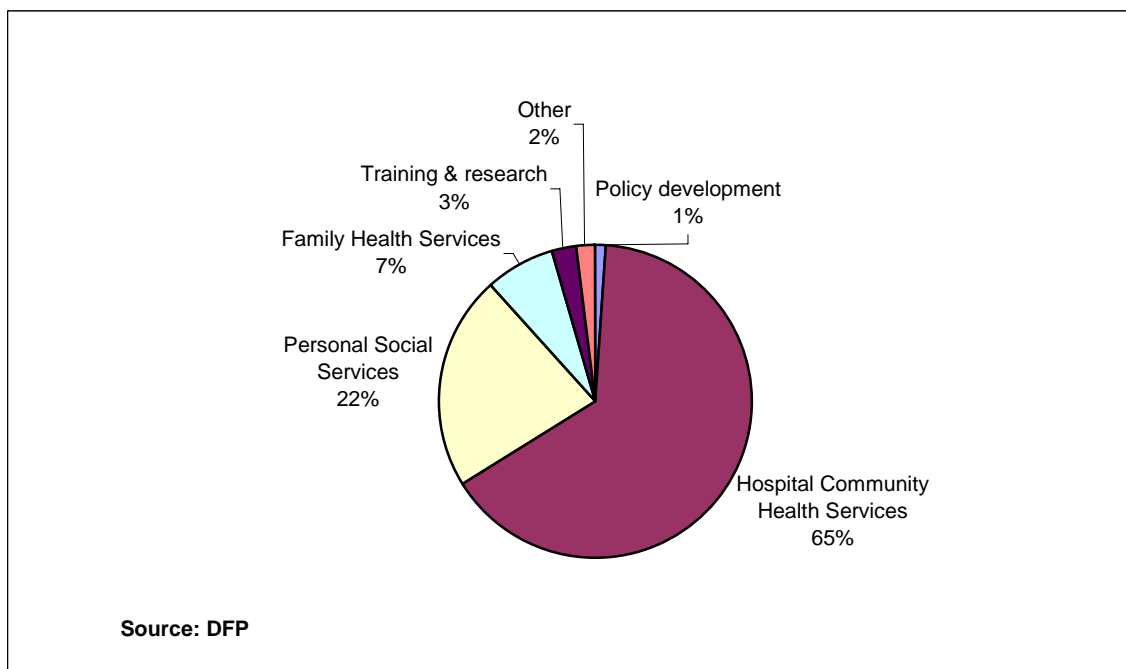
**Trends by sector**

The HPSS budget is agreed by Ministers in terms of the ten Units of Service, although figure 2.11 shows that the bulk of HPSS expenditure is concentrated in the Hospital and Community Health Services (HCHS), Personal Social Services (PSS), and Family Health Services (FHS). However, when the budget allocations are formally notified to DHSSPS, a more detailed description of what they are intended

<sup>13</sup> Pay and Prices cost pressure include an element of drugs.

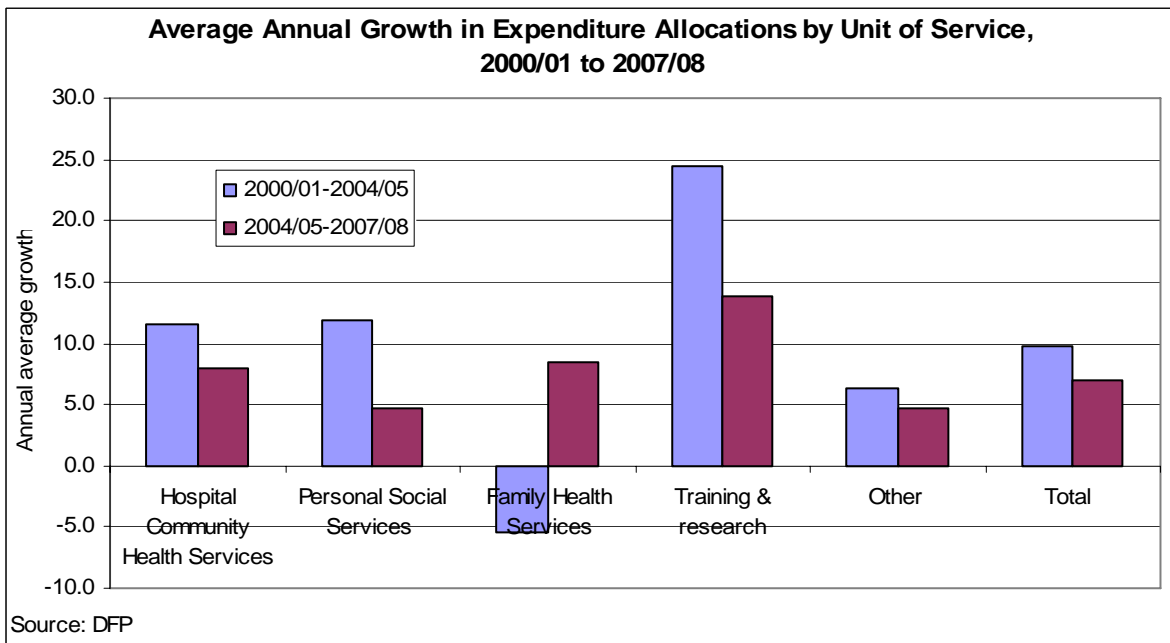
to be spent on is included in what is known as the budget control annex. In an effort to track allocations agreed by Ministers to actual spend, a settlement letter has been issued to each department for the first time this year, emphasising that departments must discuss with DFP before re-allocating any resources for purposes other than what was agreed as part of the budget process.

**Figure 2.11 The majority of the HPSS Expenditure allocation by Unit of Service is expected to be spent on Hospital and Community Health Services, 2004/05**



HCHS have absorbed an increasing share of total resources (a trend that is expected to continue) as shown in Figure 2.12. In 2007/08, HCHS is expected to account for nearly 70% of all spending - an increase of 6 percentage points since 2000/01. The higher growth in HCHS spend between 2000/01 and 2004/05 is in part due to the re-allocation of pharmaceutical spending from the FHS. The higher growth in HCHS spend appears to be inconsistent with general move to shift treatment from a hospital to a community/social setting where appropriate.

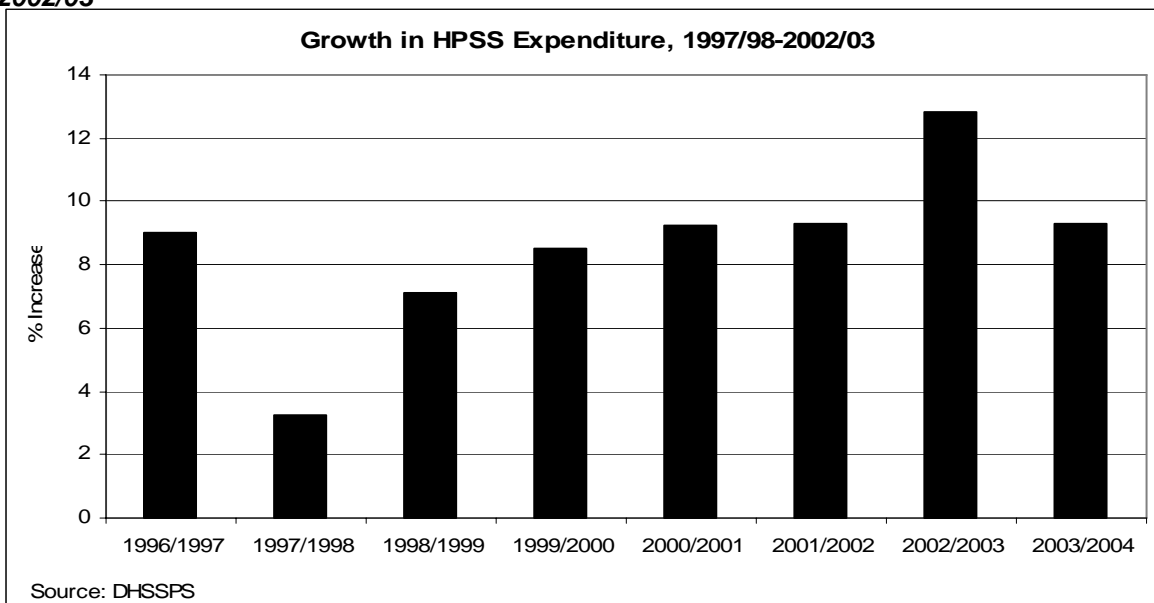
**Figure 2.12: The annual average growth in spend for Hospital Community Health Services has been greater than that for Personal Social Services over the period 2000/01 to 2007/08<sup>14</sup>.**



## Trusts

Around three quarters of the total HPSS spend is accounted for by trust spending with remainder carried out by GP's or centrally by DHSSPS. Expenditure by Trusts has increased by almost £950m - 8.5% per year - between 1995-96 and 2003/04 to stand at £2.0bn. Figure 2.13 shows that there was a steady increase in the growth rate of HPSS expenditure since up until 2002/03, whilst the slower level of growth in 2003/04 is expected to continue over the current budget period.

**Figure 2.13: Growth in HPSS expenditure has increased year on year between 1997/98 and 2002/03**



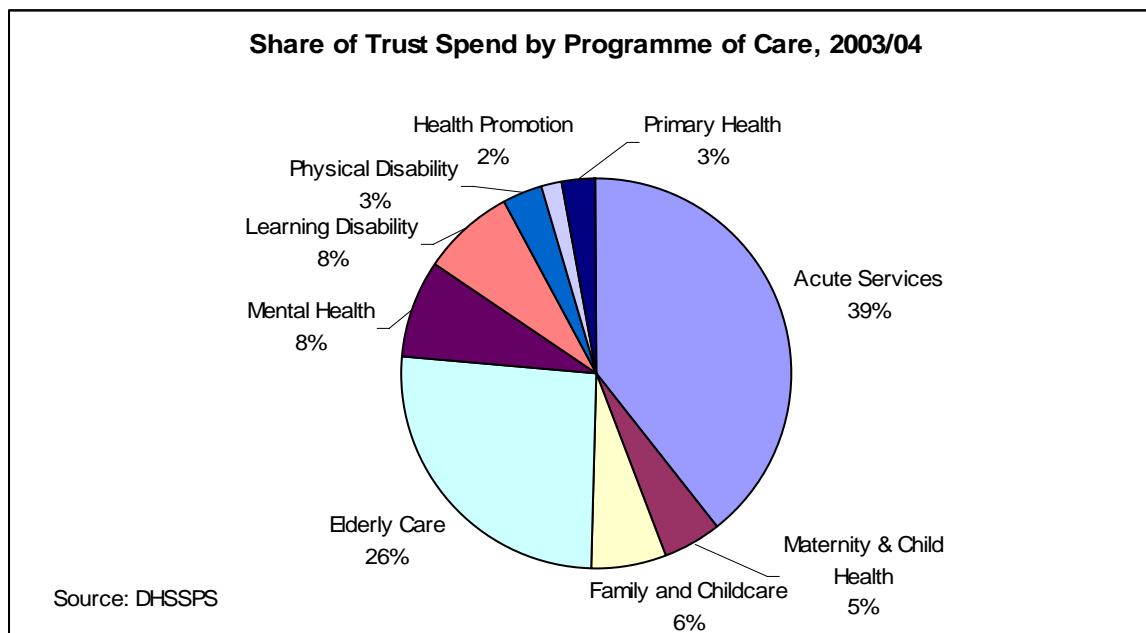
<sup>14</sup> However there appears to be a significant changes over time in the unit of service that particular items of expenditure are classified under. Whilst, DFP have provided as consistent a series as possible the chart should still be treated as indicative only

Three trusts - the Royal Group, Ulster and City, located in the Greater Belfast area - collectively account for over a quarter of total HPSS spending in 2003/04. These trusts have also experienced growth in expenditure significantly higher than the average for Northern Ireland Trusts. For example, expenditure at the Royal Group of Hospitals increased by 10.7% per annum compared to the Northern Ireland average of 8.5% over the period 1995/96-2003/04

### **Programmes of care**

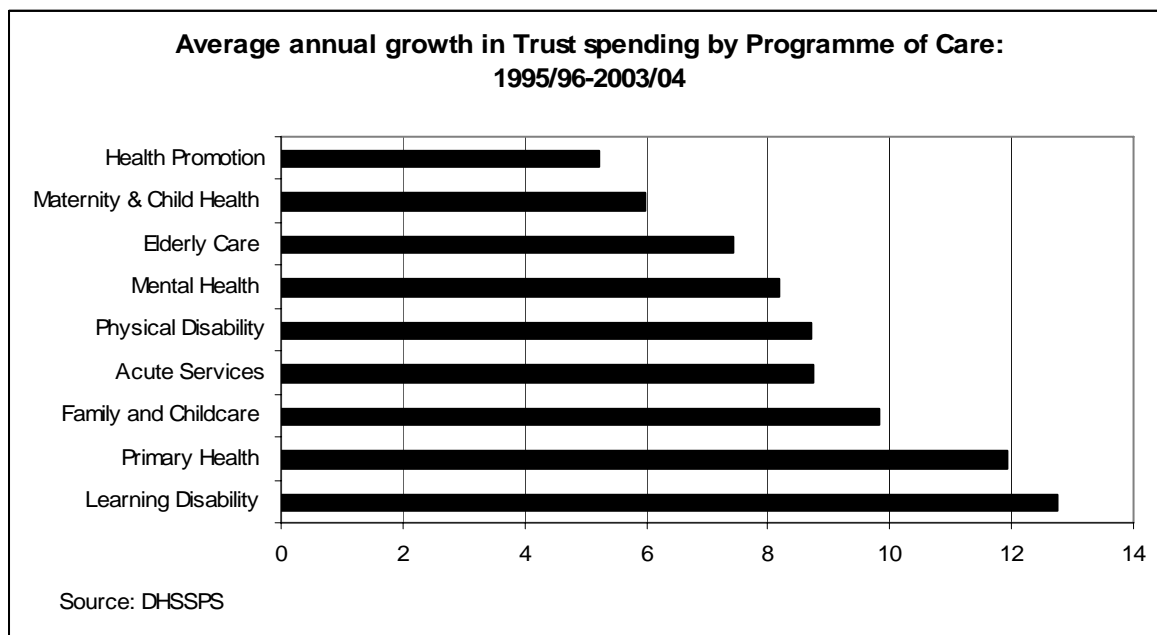
DHSSPS tracking of HPSS trust expenditure is currently available from 1995/96 to 2003/04. This allows trends in expenditure by Programme of Care<sup>15</sup> (POC). From this point of view, one of the consistent themes from the consultation process was the perception that funds were being diverted from other POC's towards the acute sector. Whilst DHSSPS bids for expenditure to DFP relate in many cases to specific POC's the block allocation of funding through the capitation formula would suggest that it is at the discretion of Boards and Trusts as to the distribution of expenditure between POC's. However, DHSSPS have indicated that in recent years there has been greater direction given by the Department to ensure that funds are used for the purpose intended. Although acute services dominate the HPSS sector - accounting for two-fifths of total spend (figure 2.14), at least over the period 1995/96-2003/04, growth in spend for the acute services was only slightly higher than the overall average (figure 2.15). However, its share of the total has increased slightly in recent years, and anecdotal evidence would suggest that this has continued in 2004 and 2005.

**Figure 2.14: Acute services account for nearly two fifths of total spend....**



<sup>15</sup> Programmes of Care are divisions of healthcare, into which activity and finance data are assigned, so as to provide a common management framework. They are used to plan and monitor the health service, by allowing performance to be measured, targets set and services managed on a comparative basis. In total, there are nine Programmes of Care.

**Figure 2.15....but acute services spending has grown more slowly than a number of other services.**



Whilst the Learning Disability POC had the highest level of growth in expenditure over the period 1995/96-2003/04, its relatively small scale meant that it only accounted for a tenth of the overall growth. Given the demographic trends in Northern Ireland with a falling birth rate and ageing population it is to be expected that spend on Maternity and Childcare should have grown at a slower rate than the Northern Ireland average. However it is surprising that growth in spend on elderly care should be lower than the overall average whilst the low level of growth in expenditure on health promotion suggests a lack of investment for the future<sup>16</sup>. The dominance of the three largest Belfast Acute Trusts (Royal, City & Ulster) can be seen particularly with respect to the Acute POC where they account for 47% of total Northern Ireland spend in 2003/04 and 53% of spend growth since 1995/96.

In 2003/04 hospitals accounted for 54% of trust spend, reflecting the importance of the acute programme of care, followed by personal social services (33%) and community services (12%). Over the period 1999/00-2003/04 growth in hospital expenditure was less than both PSS and community services. The greatest contribution to the increase in trust spend over this period was from acute services (41% of total growth). More detailed analysis of Trusts Expenditure is set out in Annex C

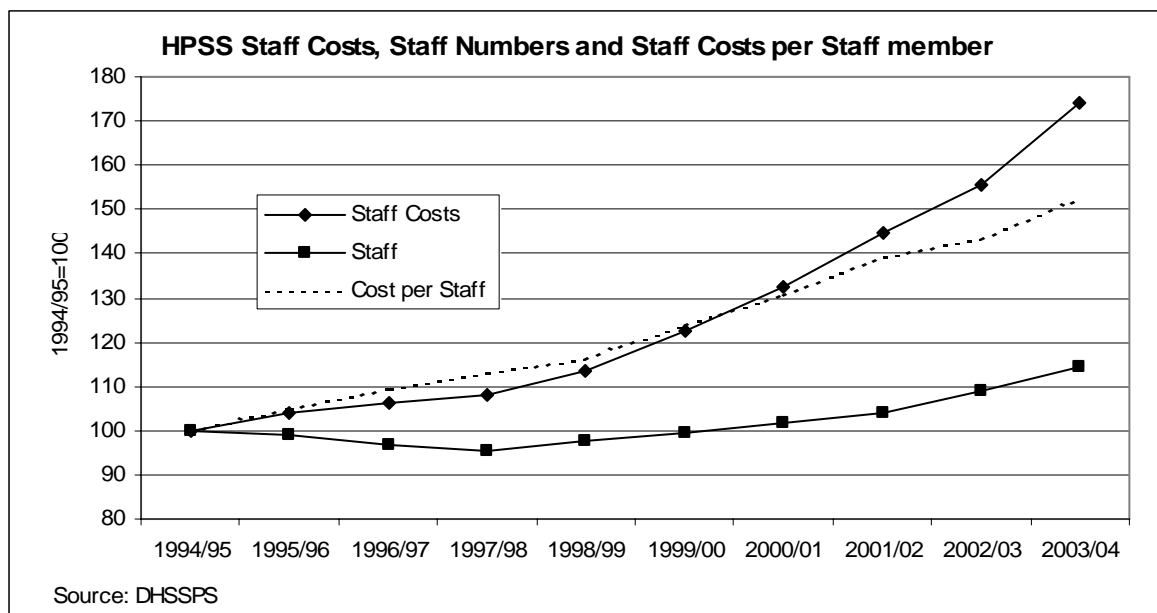
### **Health and social care staff**

Current allocations (post initial implementation of Agenda for Change, Consultants' Contract and GMS Contract) show the proportion of all HPSS expenditure accounted for by direct pay and pension cost remaining stable at just over one half for the next number of years. In the entire period 2000-01 to 2007-08 just under 60% of the increase in HPSS expenditure will have been absorbed in pay costs.

<sup>16</sup> DHSSPS have suggested that the slower growth in the funding for elderly services may be due to previous over-funding of this POC. This raises the question as to whether DHSSPS should be more aware as to the appropriate level of funding across POCs.

Figure 2.16 shows that spending on staff costs by HPSS trusts has increased by 6.4% per annum from 1994/95 to 2003/4. Whilst wages and salaries have risen by 4.8% over this period, the number of staff has only increased in recent years, and at a slower rate (1.5% pa)<sup>17</sup>.

**Figure 2.16: Staff Costs have increased at a faster rate than the number of staff in the HPSS between 1994/95 and 2003/04**



Over the period 1997/98- 2003/04, approximately 59% of the increase in HPSS expenditure was due to staff costs. This means that approximately 37% of the increase in HPSS expenditure over this period was due to increases in staff costs per head, with the remaining 23% due to increase in staff numbers<sup>18</sup>. However, there is significant variation in the rate of increase in staff costs per head between staff groups. Medical staff enjoyed growth of 7.6% per year in wages and salaries compared to the HPSS average of 5.1%, and 4.9% for trained nurses. The increase in wages and salaries within HPSS trusts was higher than those in the general economy (on a mean or median basis) as measured by the Annual Survey of Hours and Earnings.

### **Linkage between allocations and actual expenditure**

As referred to above, a key concern regarding the health & social care sector in Northern Ireland has been the apparent lack of linkage between specific funding allocations to the department and subsequent service delivery. This has led to the description of the health & social care sector as a financial black-hole where despite apparent significant additional funds there is little progress in resolving problem areas such as waiting lists. This phenomenon relates not only to Northern Ireland

<sup>17</sup> Between 1994/95 and 2003/04 the number of whole time equivalent staff in the HPSS has increased by just over 6,100 or 14.6%. The administration & clerical staff grouping experienced the largest increase in numbers (+2,400) whilst medical staff and trained nurses each increased by between 700-800.

<sup>18</sup> Between 1997/97 Total HPSS spend increased by £819m whilst staff costs increased by £487m with growth of 5.1%pa in staff costs per head and 3.0%pa in staff numbers.

but to the rest of the UK where the additional funds allocated do not appear to have resulted in a commensurate increase in activity. Whilst there are a number of reasons why the impact of additional funding has to date not been captured by headline indicators of performance there remains the concern that value for money has not been achieved.

In order to shed some light on this issue DHSSPS were asked to produce evidence linking as closely as possible their successful bids for expenditure with subsequent patterns of spend. Additional funds are allocated to the health & social care sector through a range of mechanisms including the outcome of Northern Ireland Budget Rounds, In –Year Monitoring, Northern Ireland Executive Programme Funds and European Funding. Whilst the largest share of additional funding comes from the Northern Ireland Budgets, the allocations from these sources are hardest to link to specific activities as they tend to fund general uplifts for pay and prices. It can be seen that additional funds are allocated for a broad range of services. For example, over the period 1999/00 to 2003/04 an additional £22.8m was allocated to dealing with Waiting Lists, £20.9m for Winter Pressures and £24.3m for Child Care services.

These additional funds were then linked to changes in spend for Hospital, Social and Community Services from Trust accounts data. Table 2.1 below shows that the increase in real Hospital spend for 2000/01 of £37m is equal to the associated budget bids.

In respect of hospitals, therefore, it does appear to be possible to track the funds through to actual expenditure. However, there are a number of caveats to this assertion, in particular that the correlation between bids and expenditure growth might have been achieved by simply allocating the large number of bids selectively to ensure the desired result.

**Table 2.1: Reconciliation of Budget bids and real hospital expenditure growth 2000/01**

	Budget Bids (£m)	Real Increase in Expenditure (£m)
Cancer Services	8.0	
Dependency Beds	2.4	
Fracture Services	1.0	
Medical Emergency	5.0	
Waiting List	1.3	
Winter Pressures	3.0	
Acute Services	5.0	
South Tyrone	5.5	
Causeway	0.5	
Clinical Waste	4.2	
Omagh	0.6	
MRI	0.5	
Hospital Total	37.0	36.4

In addition, the figures are insufficiently detailed to check whether, for example, the £8m allocated to Cancer Services was spent on those services rather than another aspect of hospital services. Indeed, even if there was an additional £8m spent on

Cancer Services this may have not have had the impact on actual outcomes for patients that would have been expected when the bid was agreed by Ministers.

In the case of community and social services, the transition was less transparent, mainly because funds tended to be allocated in the form of general funds to be shared across services and programmes of care. There were also a number of adjustments of significant scale such as the transfer of Preserved Rights which also distorted comparisons<sup>19</sup>.

Further, as the actual expenditure data relates to trusts only there were a significant number of bids that were not allocated to a particular service such as equality and training.

Analysis of spend data has shown the difficulty of tracking expenditure throughout the system. Greater transparency would require more detail to be set out when putting forward bids in terms of the specific service/programme of care that the bid relates to and where possible what the resources will be used for in terms of staff, equipment or care packages. Whilst it is reasonable that there should be appropriate control on the use of public funds the cost of excessive micro-management particularly in the context of greater devolved decision making to frontline staff also needs to be recognised. There is however scope to tighten up the target setting process particularly with respect to Public Service Agreements to ensure that the objectives which resources are allocated to, lead to measurable improvements in service.

**Recommendation 2: Over and above the need to track spending for reasons of financial probity, the main performance policy monitoring focus should be on tracking outcomes, not spending per se. A programme budgeting approach - as currently being developed in England for 23 disease/service groups - in addition to traditional accounting would be of help with this.**

## Conclusion

The HPSS sector in Northern Ireland appears on initial analysis to be well funded in a UK context and reasonably funded in an international context. However, this is based only on analysis of the level of spend per capita and takes no account of the potential need for higher spend in Northern Ireland, which will be discussed at a later stage.

The decision making process when allocating health and social services expenditure appears to be convoluted. Although the expenditure bids agreed by Ministers include detail as to how the resources are to be used the subsequent block funding of Boards to distribute money to Trusts would suggest that decisions are also made at this stage based on local needs as to how funds should be allocated. Whilst there is direction from and monitoring by the DHSSPS as to the use of resources there remains considerable scope for confusion with same decisions being made at various stages in the process. There is a tension between the need for clear direction and control from the centre to ensure that the wishes of Ministers are

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<sup>19</sup> Whilst additional funds were transferred with Preserved Rights, the view of DHSSPS is that the cost of funding residential nursing care was in excess of these funds

implemented and the need for flexibility to ensure that local needs can be satisfied in the context of changing circumstances.

In terms of how the additional funds allocated to the HPSS sector have been used, the evidence available to date would suggest that the distribution of funds reflects past spending patterns, with the largest share going to the Acute Sector although not on a significantly disproportionate basis.

Since 1997/98 although the share of total expenditure accounted for by staff costs has declined, this item still accounts for a significant share of the overall growth in spend as has been the case in England. In particular, growth in wages and salaries accounts for over two-fifths of the increase in HPSS expenditure. Staff numbers have also risen with the largest increase in terms of administrative & clerical staff. Whilst it can be argued that wages are an important element in the recruitment, retention and motivation of staff and support to frontline services is also important, the relatively moderate increase in hospital activity over this period relative to England is of concern.

A key concern that was raised as part of the consultation process was that the funds allocated to the health & social care sector were not being used for the purpose intended. It has been shown, however, that there does appear to be a reasonable link between budgetary allocations and subsequent expenditure for Hospitals. For social and community services on the other hand, the link is much less clear although this is in part due to the way in which the funds are allocated.

## 2.3 Funding in the future

An important part of the terms of reference for this Review was to examine the:

*‘Technological, demographic, medical and other trends over the next two decades that may have implications for the future resource needs of the HPSS sector in Northern Ireland consistent, where possible, with the approach adopted in the Wanless Review.’*

In approaching this aspect of the Review two points need to be kept in mind. First, there is no objectively correct answer to the question of how much should be spent on health and social care.

For health and social care in Northern Ireland, as for other publicly funded care systems, total spending levels are a matter of fiscal choice. This does not mean that such decisions have to be taken in a data-free environment; choices are not wholly subjective and can be informed by, for example, evidence of what benefits (in particular the value of these benefits) are likely to accrue from particular levels of spending, the opportunity costs of spending on health and social care and comparative benchmarking with spending levels in other countries and regions. Spending levels will also be informed by the values society wishes to pursue - for example, equal access for equal need in health and social care will not only imply a particular distribution of spending within Northern Ireland, but different levels of funding overall in comparison with other parts of the UK.

Secondly, while total funding levels - the *inputs* to health and social care - are important, of even greater significance are the *outcomes* from the system as experienced by patients and the population at large; if the system is inefficient at maximising outcomes for a given level of inputs, then it is not only money that is wasted, but lives too.

Bearing these issues in mind, the broad question we address here is: given multiple calls on limited public sector funding, what should Northern Ireland reasonably expect to devote to its health and social care system now and in the future?

Our approach has been to firstly adopt the assumptions and ‘vision’ underlying the original Wanless models used to produce spending paths for total (and NHS) spending paths into the future. Secondly, we have adapted the results from the Wanless Review to produce future shares of these UK totals for Northern Ireland.

The rationale for setting long-term projections of resource requirements holds equally for Northern Ireland as the rest of the UK in terms of allowing more effective long-term planning and management of the health & social care sector.

In projecting the future resource requirements for the UK, the approach of the Wanless Review was to focus on England and then use population uplifts for Scotland, Wales and Northern Ireland to produce a total for the UK. Whilst there are a number of areas where this assumption might be open to challenge, the responses to the Wanless Interim Report did not suggest that such an approach was unreasonable. An option that was considered early in our Review was to populate the Wanless (English/UK) model with Northern Ireland data. However, we were advised that this approach was not feasible, and instead decided to take the

Wanless UK projections as given and apply a range of population share adjustments to estimate Northern Ireland's future resource requirements.

Underlying Wanless's future vision were a number of factors that can be expected to increase the pressure to spend more on the health & social care sector in future years. In addition, whilst it would be unrealistic to assume that as spending increases, such pressures will reduce<sup>20</sup> given historical trends, there are actions that Government can take to ameliorate spending pressures. For example, public health promotion and improving the effectiveness of service delivery.

Key factors which drive the pressure to spend more on health and social care include:

- technological developments and medical advance
- higher expectations regarding the range and quality of health care provided,
- demographic and patterns of morbidity,
- extent to which resources are used efficiently

To these might also be added likely changes (increases) in the *value* society attaches to states of good health, with the implication that if the benefits (health) of the system are valued more highly, then this justifies higher costs (that is, spending)<sup>21</sup>

Although surveys suggest that the public are generally satisfied with the health service in the UK (and particularly in Northern Ireland - 79% satisfaction levels were reported for 2004 compared to 74% for 2003<sup>22</sup>), nonetheless, public pressure on services to provide increased responsiveness and quicker access to more effective care is evident.

Demographic changes over the next twenty years will clearly impact on demand for health and social care spending. However, as Wanless and others have noted, the relationship between need for health and social care and, for example, the proportion of the population who are elderly is not straightforward. Although those aged over 65 are among the main users of health services, it is proximity to death rather than age per se which is more important in modelling future health care costs. In terms of the sorts of health and social care problems services will have to deal with over the next twenty years, then the likelihood is that these will remain largely similar in type and scale to those they face now but in line with downward trends in overall mortality.

Although technological and medical advances may in some cases lead to reductions in unit costs, in general it is expected that by allowing more people to be treated for a wider range of conditions (and for a longer time and more effectively) these advances will put upward pressure on costs. Whilst there is considerable uncertainty regarding the future uses of existing technologies, as well as those that have yet to emerge, there is no reason to believe that the trend over the past thirty years (when

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<sup>20</sup> Although this runs counter to the assumption at the institution of the NHS in 1948 that resource requirements would fall as the population became healthier.

<sup>21</sup> Jones CI (2002) Why have health expenditures as a share of GDP risen so much? NBER working paper 9325.

<sup>22</sup> DHSS&PS Public Attitudes to Health and Personal Social Services in Northern Ireland 2004

a significant proportion of the increase in health care costs was due to technological improvements) should not continue.<sup>23</sup>

The improved standard of care expected by public and patients will require a significant increase in the number of health care professionals. In addition, the roles and responsibilities of health care professionals will change, with changes in the skill mix within professions and changes in roles between professional groups.

### 2.3.3 Wanless expenditure projections for the UK

The projections of future health service resource requirements set out in the Wanless Review were based on the achievement of improved health services in the UK, with a high level of clinical standards to meet the rising expectations of patients and the public.

Some of the main costs of achieving this vision and identified by Wanless include:

**National Service Frameworks:** Whilst the present reality was considered to be far from this vision, it was anticipated that the NHS Plan will bridge this gap. A key element of the NHS Plan is delivery on the National Service Frameworks (NSFs) which set out national standards for service delivery. There are NSFs in place in England for the following areas; coronary heart disease, cancer, renal disease, mental health services and diabetes.

The Wanless Review projected that an additional £12bn would need to be spent by 2022/23 to deliver the NSFs for these areas. In addition, in recognition that the Government intends to extend the NSF approach to other disease areas it was assumed that similar growth in expenditure would be required to bring service in these areas up to and maintain the required standard. The cost of introducing NSFs to Northern Ireland would depend to a large extent on the level of morbidity for particular diseases and the current level of service provision and organisation.

**Clinical governance:** In order to provide continual improvements in the quality of service provided it is necessary for health care staff to have additional “protected time” devoted to clinical governance structures and schemes. The Wanless Review assumed that all healthcare staff will need to devote 10 per cent of their time to clinical governance compared to the current position of 5 per cent for medical staff and 2 per cent for other professional staff. Whilst this will increase costs in terms of additional staff it will also reduce hospital acquired infections, adverse incidents, avoidable emergency admissions and clinical negligence claims so that the additional net cost across the UK would be around £1.4bn by 2022-23.

**Fast access:** whilst waiting times in England are significantly lower than in Northern Ireland, the view of the Wanless Review was that substantial additional activity and hence resources would be required to match the outcomes in the best performing comparator countries. Overall it was estimated

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<sup>23</sup> The general view of those who were consulted as part of the Wanless Review was that the nature, scope and pace of technological advance in the next ten years will not look radically different to the past ten years- P 173 on Wanless Interim Report.

that around an additional £12bn would need to be spent by 2022-23 to deliver such improvements.

In addition, given uncertainty regarding the impact of cost drivers such as the health needs and demands of the population, technological developments and workforce issues, and in particular the achievement of assumed productivity improvements, the Wanless Review built up three scenarios:

**‘Solid progress** – people become more engaged in relation to their health: life expectancy rises considerably, health status improves and people have confidence in the primary care system and use it more appropriately. The health service is responsive with high rates of technology uptake and a more efficient use of resources;

**Slow uptake** – there is no change in the level of public engagement: life expectancy rises by the lowest amount in all three scenarios and the health status of the population is constant or deteriorates. The health service is relatively unresponsive with low rates of technology uptake and low productivity; and

**Fully engaged** – levels of public engagement in relation to their health are high: life expectancy increases go beyond current forecasts, health status improves dramatically and people are confident in the health system and demand high quality care. The health service is responsive with high rates of technology uptake, particularly in relation to disease prevention. Use of resources is more efficient.’

It is worth noting here (and for reference in section 3.7 on efficiency) that the Wanless Review made assumptions about improvements in productivity in health care and which underpinned its final spending projections. Table 2.2 details the productivity assumptions made by Wanless and which, given this present Review’s approach to projecting spending for Northern Ireland, also underpin our future funding requirements.

**Table 2.2: Breakdown of productivity assumptions, per cent a year**

	Unit cost reduction		Quality improvement		Quality-adjusted productivity	
	Lower	Higher	Lower	Higher	Lower	Higher
2003/04 - 2007/08	0.75	1	0.75	1	1.5	2
2008/09 - 2012/13	0.75	1.25	0.75	1.25	1.5	2.5
2013 - 2017/18	1	1.5	0.75	1.5	1.75	3
2018/19 - 2022/23	1	1.5	0.75	1.5	1.75	3

Source: Wanless Review Final Report

Wanless identified two components of productivity - cost-reducing and quality-improving. Over the twenty year period to 2022/23, feasible average annual quality-adjusted productivity improvements were assumed to lie between 1.5% and 3%.

Bringing together these scenarios, assumptions and vision for health services in the future through models to estimate, for example, activity needed to sustain very short waiting times, provided some broad estimates of possible spending levels for health care into the future for the whole of the UK (see table 2.3).

**Table 2.3: UK Health Spending projections from Wanless Review**

	2002-03	2007-08	2012-13	2017-18	2022-23
Total NHS Spending (£ billion 2002-03 prices)					
Solid Progress	68	96	121	141	161
Slow Uptake	68	97	127	155	184
Fully engaged	68	96	119	137	154
Average annual real growth in NHS spending (per cent) <sup>1</sup>					
Solid Progress	6.8	7.1	4.7	3.1	2.7
Slow Uptake	6.8	7.3	5.6	4.0	3.5
Fully engaged	6.8	7.1	4.4	2.8	2.4

Source: Wanless Review Final Report

Note: Growth figures are annual averages for the five years up to date shown (four years for 2002-03)

The table shows that under all scenarios the greatest growth in resources is required in the first ten years of the projections, as the UK ‘catches up’ with its European neighbours, with slower growth thereafter. As would be expected, the Fully Engaged scenario has the lowest cost whilst the Slow Uptake has the highest.

### 2.3.4 Application of Wanless projections to Northern Ireland

In estimating the long-term sustainable resource requirements of the health & social care sector in Northern Ireland, the approach involved taking the Wanless spend projections for the UK and estimating Northern Ireland’s need-adjusted share (see Annex D for further details). A key (and acknowledged) gap in the Wanless work was the exclusion of projections for social care services. With no future estimates for social care spending across the UK, for Northern Ireland projections it is assumed that social care receives increases in funding similar to health care.

There has been considerable debate as to Northern Ireland’s “fair share” of any growth in UK/England spend. Therefore, this analysis presents a range of outcomes based on alternative models embodying differing views as to the quantum of the fair share.

Our approach implies a set of criteria or objectives for the distribution of resources under devolution. In particular, that each country should receive resources that would *enable* it to provide the same standard and mix of services as the average for the UK as a whole, independently of local ability to pay. Whether an individual country chooses to provide higher or lower standards or a different mix is purely a local policy issue. It has long been accepted that differences in need will affect the cost of providing equivalent services and therefore must be incorporated into an estimate of “fair shares”. An implication of this approach is that the relevant “needs” factors and their weights must be those applied to the UK as a whole.

The main problem with this approach is that there is no pan-UK derived allocation formulae - that is, one using UK data to construct the appropriate weights for needs factors. However, there are a number of allocation formulae - for individual parts of

the UK , for example - which we examine in our analysis. However, it must be emphasised that in the absence of a UK-wide formula based on appropriate UK data, choosing between the results of our modelling work is, for now, more a matter of judgement than empirical fact.

Under current public sector funding mechanisms for the devolved administrations, changes in English spending departments' allocations drive changes in allocations in Scotland, Wales and Northern Ireland - primarily on the basis of population via the Barnett Formula as discussed in section 2.2. For example, as Northern Ireland's population is currently 3.4% of that in England, an increase in English public expenditure of £100m translates into an increase of £3.4m for Northern Ireland. There has been concern in Northern Ireland that the Barnett Formula is intrinsically unfair because it takes no account of the relative need for expenditure. In addition, the out workings of the Formula mean that when a Devolved Administration has a higher level of public expenditure per head of population than England (as is currently the case for Scotland, Wales and Northern Ireland), the growth in expenditure is lower than in England.

On this basis it is argued that Northern Ireland should receive funds *in addition to its population share*. In previous years, this has been accomplished through 'formula bypass', where Northern Ireland was allocated additional funding for specific areas - although more recently HM Treasury has adopted a stricter approach to the application of the Barnett Formula. As a result, Ministers in the previous Northern Ireland Executive lobbied for a review of the Barnett formula with a view to adopting a needs-based approach. On this basis, in the example above, if Northern Ireland's per capita need for expenditure was agreed to be 10% higher than in England then it should receive an additional £3.74m.

Of course, critical in this respect is the extent to which the need for expenditure is actually higher in Northern Ireland than England. In 1979, and as part of preparations for greater devolution, HM Treasury conducted a Needs Assessment Study (NAS) to develop a model to estimate the public expenditure need factor (with England =1) for Scotland, Wales and Northern Ireland across a range of public services - including health and social services - although the analysis was never formally agreed. The NAS model was based on a weighted average of a range of factors including age structure, morbidity, deprivation, rurality and other cost drivers, and is in some ways comparable in approach to current weighted capitation allocation formulae used in England, Northern Ireland, Wales and Scotland to allocate NHS global budgets within countries.

In 2001, the Northern Ireland Executive commissioned a series of **Needs and Effectiveness Evaluations (NEE)** for five public expenditure areas. A significant part of each study was to update, where available, the existing HM Treasury NAS model and suggest evidence-based changes to the construct of the model. Whilst the results of the needs element of each study have not been published, the details of the models have been made available to this Review and updated for the latest available data. Three basic scenarios had been developed as part of the 2002 NEE:

**NAS Update** - based on updated data to populate the HM Treasury Model, this implies a need indicator of **1.0395** for the latest available data - that is, given the relative difference in the need for health care (based on factors such as

population structure and mortality) Northern Ireland should spend **3.95%** more per head of population on health services than England.

**NI Executive Update** - based on changes to the *structure* of the model, in particular, greater weight given to deprivation factors where Northern Ireland's need relative to England is high. This implies a need indicator of **1.132 (+13.2%)** for the latest available data.

**NI Executive+ Update** - based on the NI Executive update plus additional adjustments where the supporting evidence is less robust. These include adjustments to take account of differences in the ability to pay, private provision and community tensions. Overall, this implies a need indicator of **1.165 (+16.5%)** for the latest available data.

In addition to these modelling approaches, this Review has also looked at four further potential methods for arriving at a fair share for Northern Ireland of the Wanless UK projections:

**EQ-5D health status model:** The needs assessment models detailed above use a number of proxy variables for the need for expenditure on health & social care services which in reality relate primarily to the incidence of illness in a given population. The reason such proxy indicators are used is that there is generally very little data collected on the real factor of interest - *health*. However, the EQ-5D survey on health status discussed in Section 3.2.2 provides a direct measure of health status which can be compared with similar information for England. The results of the EQ-5D survey indicate that the average level of self-reported health in Northern Ireland is approximately 96% of that in England, implying a need indicator of **1.04 (+4%)**. This makes the strong assumption that there is a one to one relationship between the relative EQ-5D score and the need for spending.

A number of approaches were also considered based on the application of Northern Ireland data to the needs-based formulae for allocating health funding *within England, Scotland and Wales*. Unfortunately it was not possible, due to lack of available data, to use the models for Wales and Scotland, whilst the results set out below based on analysis carried out by DHSSPS using Northern Ireland and English allocation methods are subject to a number of caveats.

**Northern Ireland allocation model:** DHSSPS have populated the allocation formula for Northern Ireland with the latest data for England. This resulted in a set of need indicators for 11 programmes of care (POC) which ranged from **0.867 (-13.3%)** for the Elderly POC to **1.711 (+71.1%)** for the Physical & Sensory Disability, whilst Acute Services had a need indicator of **1.041 (+4.1%)**. Overall, the basic need indicator across all POCs was **1.095 (+9.5%)**. There are additional factors that are not material in an internal Northern Ireland formula but are significant when comparing with England. Including adjustments for rurality (+0.027) and resource costs increases the need indicator to **1.116 (+11.6%)**

**English allocation model:** DHSSPS have also populated the allocation formula for England with the latest available data for Northern Ireland. The

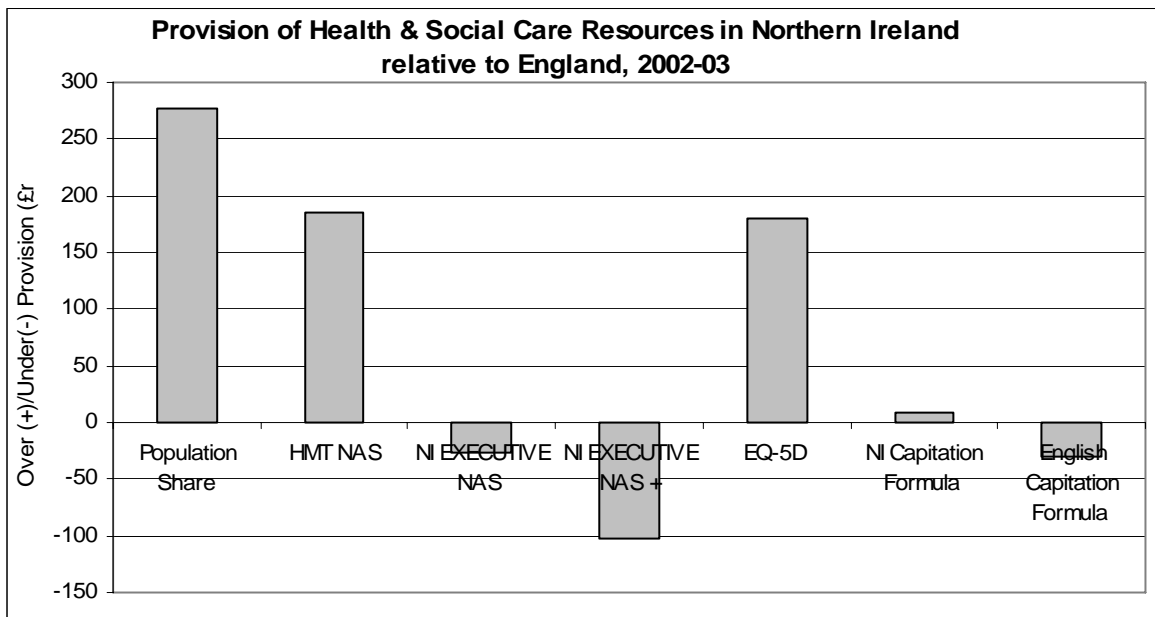
analysis was restricted to expenditure covered by hospital and community health services (HCHS) which accounts for approximately 77% of total spend. The main omission was social services which, if included, would have been expected by DHSSPS to increase Northern Ireland's relative level of need. The overall Northern Ireland age-need indices for Acute/Geriatric/Maternity and Mental Health are **1.065 (+6.5%)** and **1.541 (+54.1%)** respectively which translates into an overall need indicator of **1.133 (+13.3%)**.

**International benchmarking:** In order to provide a slightly different perspective - although one which in part reflects the Wanless Review's perspective concerning 'catch up' and 'keep up' - linkage between national per capita income and per capita health expenditure, which can be seen in an international context, was considered. Although the direction of causation may flow both ways, it is useful to estimate the level of health expenditure that Northern Ireland could afford given its level of economic activity without external financial support. On this basis, relative levels of economic activity (GDP) per head would suggest that Northern Ireland could only afford to spend 77% of the English level per head of head of population on public services.

Throughout the consultation process a consistent theme has been that health and social services in Northern Ireland are under-funded, and that, for example, initiatives in England cannot be replicated locally because of insufficient funds related to the lower growth in spend, or that activity growth necessary to tackle waiting times problems cannot be generated, again due to lack of funds.

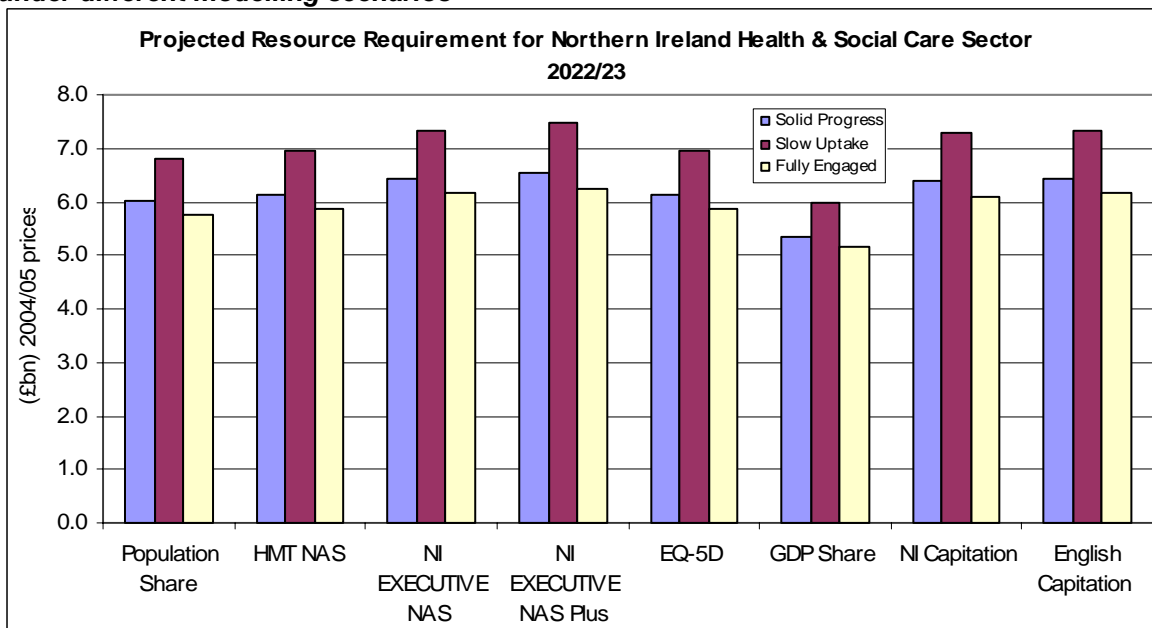
In order to assess the current position, figure 2.17 shows the results of applying each of the above spending models to the 2002/03 level of health & social care spend in Northern Ireland relative to England. For 'status quo' comparison, the figure also includes estimates based on application of the Barnett formula ('population shares'). It can be seen that the estimates range from an over provision of £276m, to an under provision of £103m. In addition, on the basis of its level of economic activity relative to England, it is estimated that expenditure on Northern Ireland's health & social care sector should be £800m *lower* than the current level (not shown on the figure). It should be noted however that these comparisons are based on HM Treasury figures which indicate that spend on health and social services per head of population is significantly higher in Northern Ireland than England, whilst it is the view of DHSSPS that there is parity in spending levels. The Review has been advised by DFP that as National Statistics, the HM Treasury figures should take precedence.

**Figure 2.17: Estimates of Northern Ireland's current HPSS spend range from underprovision of £103 m to an over provision of £276 m.**



In examining future trends in spending, one option was to assume that under a needs-based approach, the adjustment would be applied to all expenditure initially, with the same growth in spend as England thereafter. However, this would have been unrealistic, as with some models which have suggested current overprovision, the changes in expenditure would have placed substantial resource pressures on the system. Instead, as with the Barnett Formula, the needs-based adjustment is assumed to apply *only to additional spend*. Figure 2.18 therefore sets out the range of projections for the resources required for the health & social care sector in Northern Ireland in 2022/23 under different modelling scenarios.

**Figure 2.18: Wanless-based 2022/23 resource requirements suggests variations in spending under different modelling scenarios**



Under the Solid Progress scenario, projected spending for 2022/23 ranges from £5.3bn to £6.5bn; That is, a real increase over twenty years of between £2.7bn to £3.9bn. Under the Slow Uptake scenario, additional resources of £3.3 to £4.8bn would be required, whilst under the Fully Engaged scenario additional real spending of £2.5 to £3.6bn would be required. However, as figure 2.19 shows, a significant increase in resources is projected compared to historic trends regardless of the assumption on relative need.

**Figure 2.19: Although there is some variation in projected expenditure, all scenarios continue the significant growth in HPSS spend.**

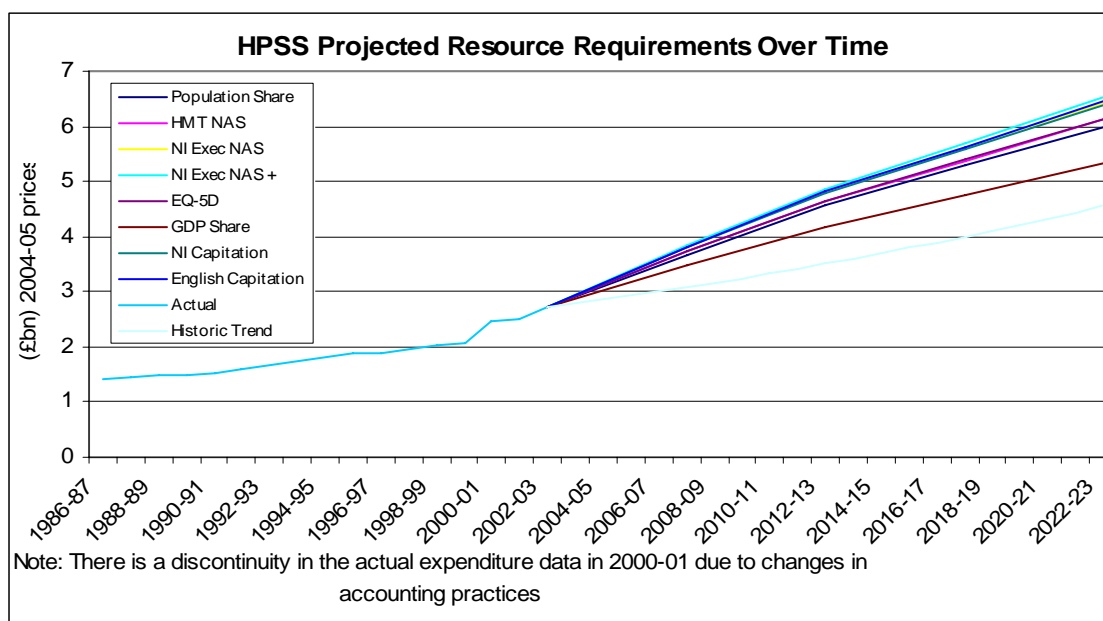
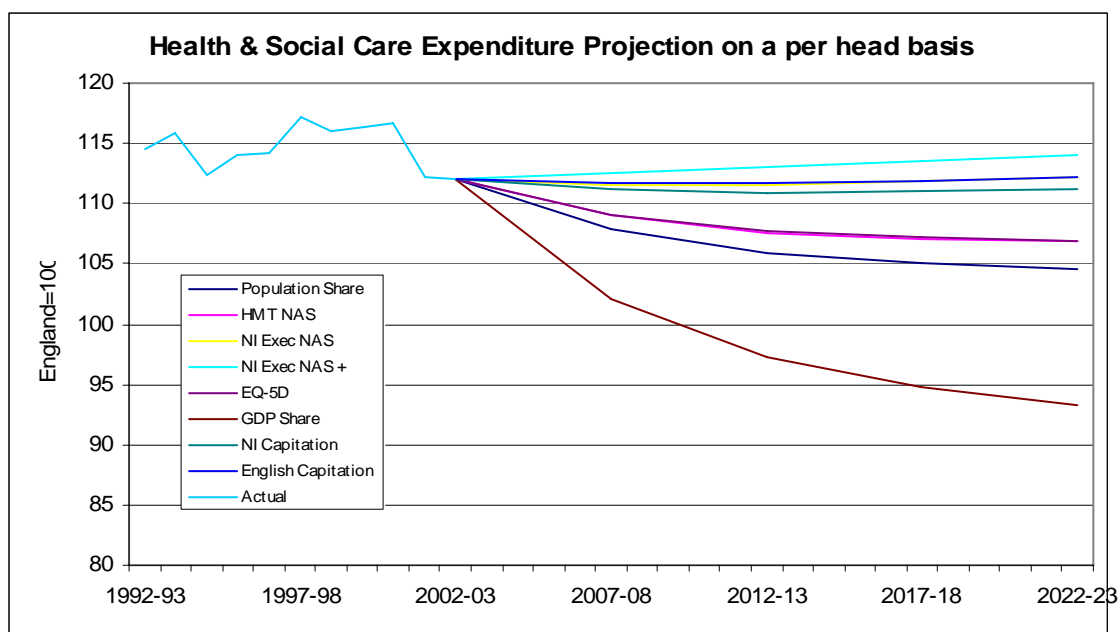


Figure 2.20 sets out the overall spend figures translated into spend per head relativities between Northern Ireland and England. If the assumed difference in need is greater than the 2002-03 difference in expenditure per head between Northern Ireland and England then expenditure per head relative to England is projected to rise over the next twenty years. It can be seen under the Northern Ireland Executive version of the NAS model with additional adjustments, spend per head is projected to rise to 114% of the English level by 2022-23 whilst under the GDP share scenario spend per head falls to 93% of the level for England. Under the Barnett formula spend per head is 4.6% higher than in England by 2022/23.

In many ways, these are somewhat pessimistic projections as, even under the Wanless 'fully engaged' scenario, they assume a continuation of the gap in relative need between Northern Ireland and England. It would be hoped that given efforts to meet the requirements of the fully engaged scenario, in the longer term the relative need gap would reduce.

**Figure 2.20: Expenditure projections imply that Northern Irelands spend per head on Health and Social Services will range from 6.8% below the level in England to 14.1% above by 2022-23.**



Although a range of estimates are set out above, it is important that the Review expresses a view as to which is the most appropriate.

### ***International benchmarking (GDP share)***

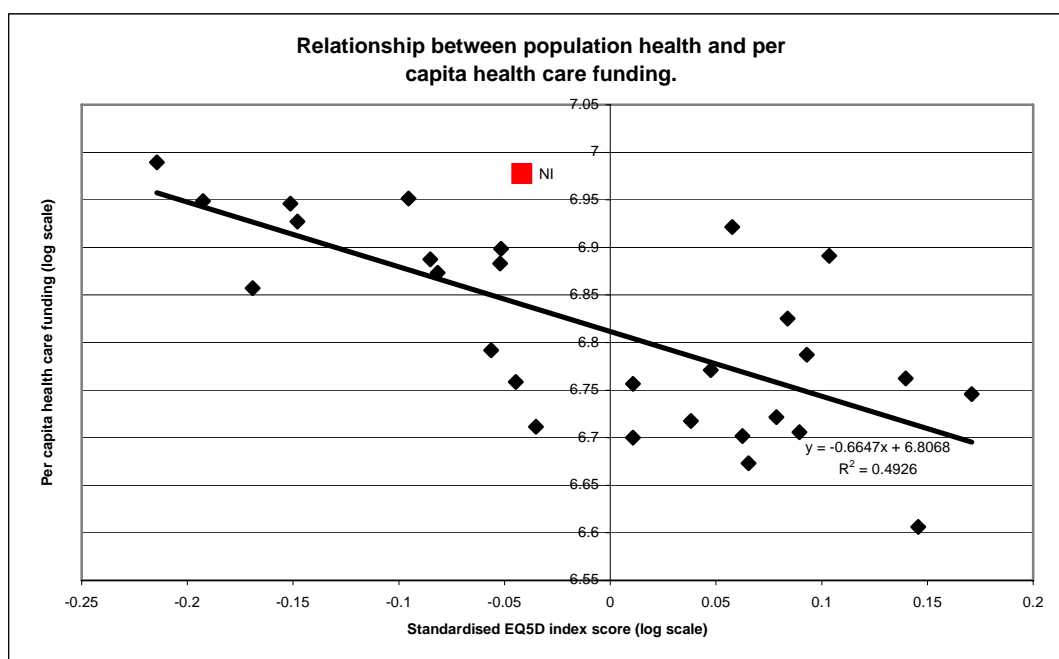
In its current constitutional state there is only a limited link between the amount of revenue raised by the Government in Northern Ireland and the subsequent expenditure on public services in the region. Therefore, the scenario based on a GDP share has been included for illustrative purposes only and does not represent a serious possible outcome.

### ***EQ-5D health status model***

Intuitively, sharing out health care resources on the basis of differences in population's health status is not only a more direct method than using proxies for health status, but a better approach too. Figure 2.21 below shows that there is a reasonably strong relationship between standardised EQ-5D scores for Strategic Health Authorities (SHAs) in England for 2003/4 (derived from the 2003 Health Survey for England) and SHA weighted capitation allocations (based on mortality and deprivation weighted populations) adjusted for differences in the cost of living, with a correlation coefficient of around 0.70 and an  $R^2$  of 0.49<sup>24</sup>. In other words, variations in health explain around 49% of the variation in per capita funding between English SHAs.

<sup>24</sup> Including a dummy variable to take account of two outliers (North Central and North West London) further increases the  $R^2$  to 0.68.

**Figure 2.21: Northern Ireland receives significantly higher levels of health spending per head of population than would be expected given its health status relative to English SHA's.**



In terms of funding implications, the trend line slope coefficient of 0.6647 suggests that the 4% poorer (self reported) health status in Northern Ireland relative to England should translate into a 2.8% higher level of spend per capita - considerably less than is the actual situation now.

This model is, however, simplistic, and could no doubt be improved with further work and the addition of other variables. As it stands, and even though there is an argument that the EQ-5D data is better than the available evidence on morbidity, judging Northern Ireland's relative expenditure need on the basis of relative needs as reflected by overall standardised EQ-5D scores provides at best a guide to spending. In the results summarised in figures 2.17-2.20 we have assumed a one to one relationship between EQ-5D score and spending.

### ***Barnett Formula (Population shares)***

The population share or Barnett Formula approach reflects current Government policy for funding Scotland, Wales and Northern Ireland. A key weakness of the Barnett formula is that it does not take into account the differing needs for expenditure between areas. Whilst Barnett might have been useful in the past as a means of narrowing the gap in levels of spending per head between UK countries (and acting as a rough rule of thumb to, in Joel Barnett's view, curtail wrangling over allocations) there is an argument for a more sophisticated approach to be adopted. All countries of the UK distribute the funding for services within their borders on the basis of needs-adjusted formulae; It is not clear why this principle cannot be extended to the allocation of funding between UK countries.

### ***Northern Ireland allocation model***

Populating the Northern Ireland allocation model with English data produced an overall basic need indicator across all POCs of **1.095 (+9.5%)**. However, this result is very sensitive to the need estimates for just two POC's (Learning Disability, and Physical & Sensory Disability) which together account for less than a tenth of overall spend. If the indicators for these POCs are set to one, then the overall need indicator falls to 1.04.

The very high relative level of need for these two POCs appears to be driven to a considerable extent by relative levels of benefit receipt. For example, a key driver for Physical & Sensory Disability is the percentage of 16-64 year olds in receipt of Disability Living Allowance, which is 141% higher than in England, whilst the proportion of people with a long-term illness is only 34% higher. Setting the benefit receipt element of the model to zero reduces the need indicator from 1.711 to 1.155 for this POC.

Moreover, given this model's implicit argument that there is much greater need for spending in the areas of learning, physical and sensory disabilities, it would be expected that this higher level of need would be reflected in a higher level of relative spend for these POCs. However, whilst the need for expenditure in these two POCs is estimated jointly to be 63% higher than in England, the actual level of expenditure is only 36% higher. This is also the case with respect to the Mental Health POC, where need is estimated to be 43% higher, but actual spend per head is the same as in England<sup>25</sup>..

### ***English allocation model***

As with the Northern Ireland allocation model, the results of populating the English weighted capitation formula with data from Northern Ireland are sensitive to changes in a small number of factors. For example, in respect of the Acute/Geriatric/Maternity index, one element - the circulatory system morbidity factor - is based on 2001 data which indicates that Northern Ireland has a 7.3% higher rate of death from this group of diseases than England. However, between 2001 and 2003 the number of deaths from diseases of the circulatory system has continued to fall at a faster rate in Northern Ireland than England and Wales so that the gap is projected to have fallen to 3.4%<sup>26</sup>. On this assumption, the respective need indicator falls from 1.065 to 1.045.

The same principle applies to an even greater extent with respect to the mental health indicator which, at 1.541, is elevated by an estimate for a psycho-social morbidity index which was proxied using Northern Ireland survey data indicating that the proportion of those aged 16+ showing signs of possible mental health problems was considerable higher than in England. However, the EQ-5D survey carried out for this Review shows, for example, that mental health status in Northern Ireland is actually better than in England<sup>27</sup>. If this assumption is applied to the model then the mental health need indicator falls to 1.10.

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<sup>25</sup> Spend data taken from the 2002 Needs and Effectiveness Evaluation.

<sup>26</sup> The number of deaths caused by circulatory diseases fell by 6.5% in Northern Ireland over the period 2001-2003 compared to 3.0% in England & Wales- Table 9.6 Annual Abstract of Statistics.

<sup>27</sup> The proportion of respondents to the Northern Ireland EQ-5D survey (2005) reporting any problem with anxiety/depression was 15.2%; the equivalent proportion for England in 2003 was 19.2%

The need indicator quoted in applying Northern Ireland data to the English Capitation Formula does not include a market forces factor to take account of variations in the unavoidable cost of providing healthcare. Whilst it has not been possible to estimate a comparable market forces factor for Northern Ireland, data is available from National Statistics indicating that the cost of living is around 5% lower than in England.

Overall, adjusting for more recent changes in deaths from circulatory diseases and the differential cost of providing services has the impact of reducing the overall need indicator - based on the allocation formula for England - from 1.14 to 1.07.

DHSSPS have indicated, however, that these models do not include a number of factors that are relevant when comparing the relative need between Northern Ireland and England. For example, taking account of additional costs incurred in supporting services in areas of high community tension as well as the lower level of private provision in Northern Ireland compared to England increases the overall need indicator by 0.02.

It has not been possible in the time available to carry out the level of critique required to come to a final position on the relative level of need for health & social care expenditure in Northern Ireland relative to England based on the respective allocation formulae. Therefore, the results of applying these models (set out in figure 2.17-2.20) are based on the results of the initial update provided by DHSSPS.

Overall, therefore, whilst on first sight the capitation formulae for England and Northern Ireland would suggest that spend per head should be 10-14% higher in Northern Ireland, the results are highly sensitive to the data used. In particular, changes in the assumptions behind one or two key factors can significantly reduce the overall level of need. Depending on the assumptions used, in particular the choice of data used where no direct substitute is available, the formulae can be used to support the original HMT NAS model or the subsequent revisions made by the Northern Ireland Executive.

### ***HM Treasury NAS Model***

Whilst the HM Treasury NAS model has been used to inform funding decisions, it has not been used to allocate resources directly across UK countries, with the continued preference being the Barnett Formula. Since 1979 there have been some small changes in the methodology of the NAS model with the last completed update taking place in 1994.

In the subsequent period there has been a large amount of empirical analysis carried as part of the further development of the internal health resource allocation formulae of the four countries of the UK. In addition, there have been significant changes in some of the socio-economic indicators used in the model which means that it may no longer be appropriate for them to be included. For example, there has been significant progress in terms of housing conditions, with only 0.5% of households in England lacking or sharing the use of bath/shower and/or inside WC, so that it is unlikely to be as important a factor as it has in the past.

The main criticism put forward by the Northern Ireland Executive, however, was that insufficient weight was given to deprivation factors in the HM Treasury NAS model. For example, in the HCHS element of the model mortality has ten times the weight of deprivation. However the latest internal allocation formulae of England, Scotland, Wales in Northern Ireland all place significant weight on deprivation factors although it is difficult to estimate precisely a weighting factor relevant to the NAS model from this work because of differences in the way the formulae are constructed

### ***NI Executive Update and NI Executive Update+ models***

The University of York was commissioned to provide an initial assessment of the evidence used by DHSSPS to suggest changes to the HM Treasury NAS model. It was acknowledged that there were weaknesses in the NAS model and that there might be a case for increasing the weight of deprivation in assessing relative need. However, the evidence put forward (including background statistical work) was considered to be insufficiently robust for all the revisions to be accepted in full and that more research would be required for the argument to have sufficient weight to affect a change in the NAS model (see Annex E). These criticisms are endorsed by this Review. However, it should be emphasised that the criticisms relate to the standard of evidence reviewed. It may be that a UK-wide analysis to derive an allocation model could endorse the suggested updates of the NAS model. However, as things stand, it is not possible to endorse all the revisions.

In addition, as with the use of the English and Northern Ireland allocation models, the relative needs estimates obtained from the Northern Ireland Executive updates of the HMT NAS model are very sensitive to just a few health needs proxy variables.

For example, overall the need indicator for the Northern Ireland Executive revised NAS model is 1.132. However, this depends largely on factors relating to the number of Income Support recipients which are present in almost all elements of the model. Setting each of these factors to one reduces the overall need indicator to 1.023.

From a different perspective, at 65%, the differential between Northern Ireland and England in terms of Income Support recipients per head of population in the NAS model appears to be high. Across the UK, Northern Ireland has by far the highest level of Income Support recipients per head of population despite having generally more favorable labour market conditions. For example, the unemployment rate is equal to the UK average of 4.8% and is lower than in London (7.1%) and the North East (5.4%), whilst the number of jobs per resident population is higher than the North East and Wales. As a sensitivity, applying the IS per head relativity for the North East (1.34) to the NAS model results in the overall need indicator falling from 1.132 to 1.0796.

There may be an argument for giving greater weight, however, to the NAS deprivation factors - based on practice in Scotland and England. But, again, the

evidence to justify the particular additional weight suggested by the updates is not considered robust.

As noted earlier, in the absence of a UK-wide allocation formula based on UK data to derive appropriate weights for relative needs factors etc, choosing between the models examined above becomes, in part, a matter of judgement.

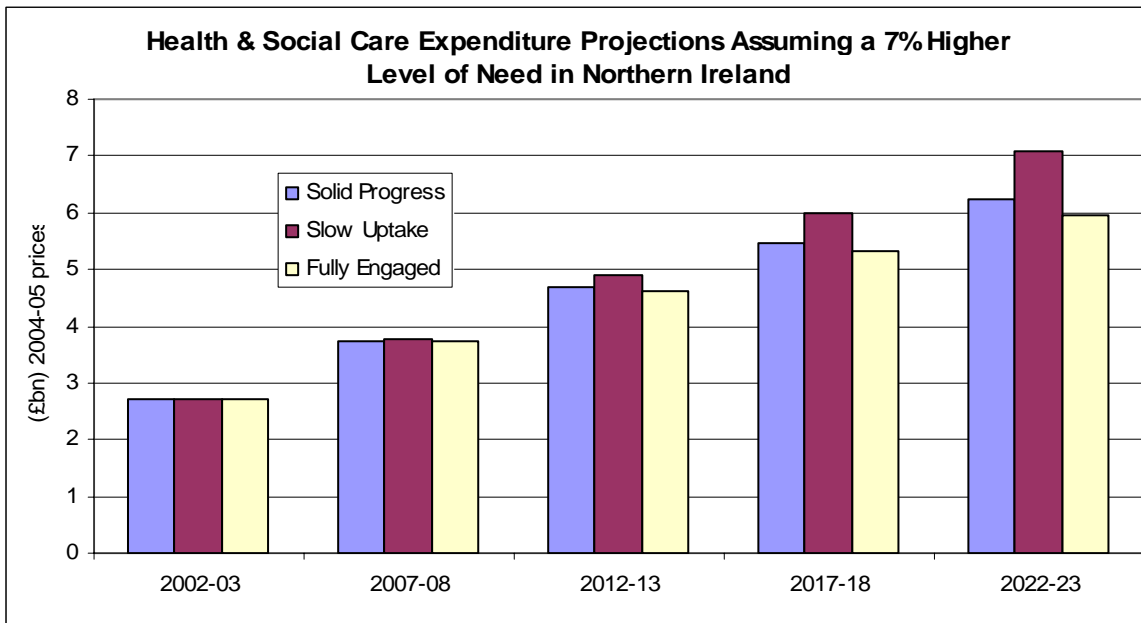
Given the criticisms and uncertainties noted above for the models tested, the two main candidates for a UK-wide formula are the NAS model, originally designed as an attempt at a UK-wide allocation guide, and the English capitation model populated with Northern Ireland data. The choice of the latter is based on the argument that it has relatively a stronger evidence base for the weights it employs and that in a UK-wide analysis to determine needs weights, English data would be likely to dominate, and that hence the current English weighted capitation formula is likely to get close to results that a UK-wide formula might produce.

However, as identified above, it has not been possible to perfectly populate the English capitation formula with Northern Ireland data, and the results are sensitive to changes in some of the factors underlying the model - to the extent that the additional per capita resourcing for Northern Ireland implied by the model could vary between 4% and 14% - the variation driven almost entirely by the very large (+59%) extra spend per head for mental health relative to England implied by the data used to populate this single needs factor.

Given this, the judgement of this Review (to be confirmed or denied in the light of any subsequent results arising from a UK-wide allocation model) is that a reasonable need differential between England and Northern Ireland should be around 7%. This is less than that implied by the English capitation model (due to the high sensitivity of the results from this model from just one needs factor - for mental health). But it is greater than that implied by the original NAS model, allowing for evidence from work carried out on the English and Scottish allocation formulae that the weight given to deprivation factors should be higher than 7.5%.

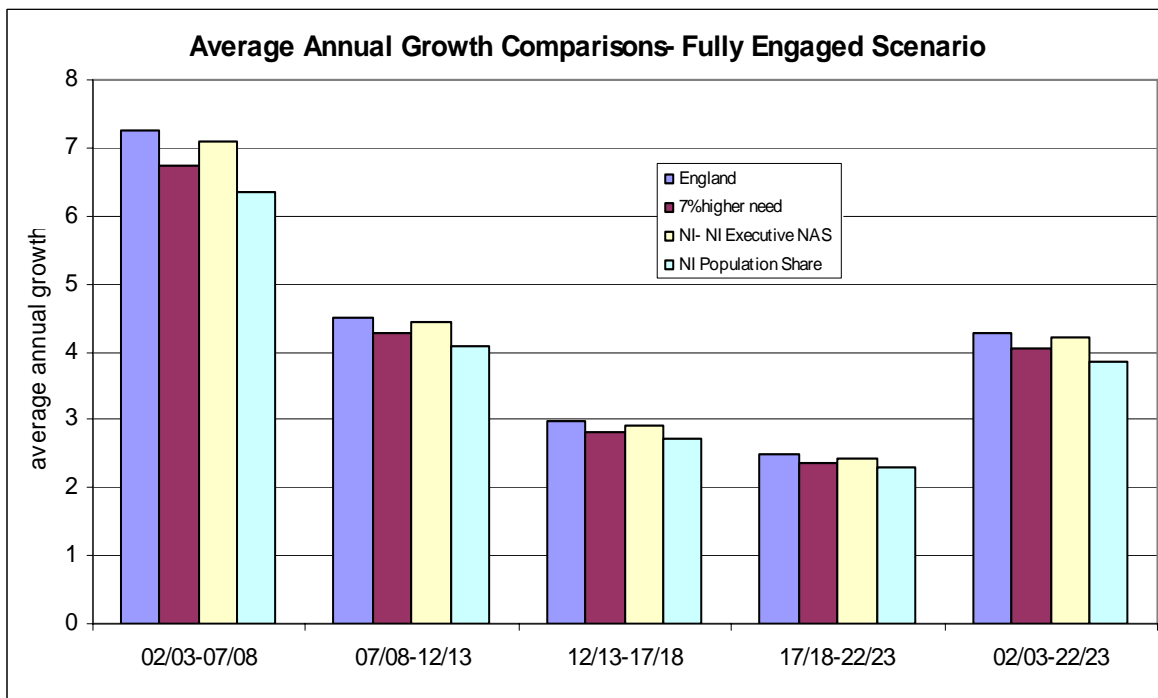
On this basis, the projected resource requirements for the health and social care sector in Northern Ireland over time under this assumed level of need are set out in figure 2.22 below.

**Figure 2.22: Assuming a 7% higher level of need suggests real increases in Northern Ireland health and social care spending by 2022/23 of between £3.3bn and £4.4bn - percentage increases of between 121% and 162%**



In terms of growth in expenditure, figure 2.23 below shows that there is a small difference in growth rates under the various scenarios, with the baseline position for England. The chart also highlights the extent to which the additional growth occurs in the 2002-03 to 2007-08 period with progressively slower growth in the five year periods thereafter.

**Figure 2.23: Average Annual real growth Under the Fully Engaged Scenario is 4.0% for Northern Ireland assuming a 7% higher level of need compared to 4.3% for England.**



**Recommendation 3: Adopt HMT NAS model-based Wanless ‘fully engaged scenario’ projections as set out in Table 1 for now as best reasonable guide to future spending in NI.**

**Recommendation 4: Further work is needed to investigate the usefulness of employing direct measures of health status (for example, as derived from instruments such as the EQ-5D) in resource allocation models.**

**Recommendation 5: Future work on pan-UK resource allocation model would provide a more empirically-based answer to relative shares of resources. Such work should be open, and draw on extensive experience in the area of resource allocation models of research groups across the UK.**

### **2.3.5 Implications of funding projections for the Barnett Formula**

The projections detailed above imply that the health & social care sector in Northern Ireland will require an additional £210m in funding by 2022/23 compared to that which would be expected under the Barnett Formula, given the 7% higher level of need. There are two main mechanisms through which this funding could be secured:

- (1) additional resources from HM Treasury (i.e. population share of English increases in spend, equivalent to an additional 7%)
- (2) the re-allocation of resources from within Northern Ireland (i.e. reduce expenditure on other public services)

It is clear that option (1) would present significant difficulties for HM Treasury in terms of the potential repercussions for other parts of the UK and for other spending programmes.

The alternative is that the additional funds required for health & social care, over and above that received in the form of the respective Barnett consequentials, are obtained by diverting resources from other spending programmes within Northern Ireland. Under this scenario, for health spending per head to be 7% higher than in England would require spending in all other spending programmes to be 5% lower than in England, equivalent, for example, to a 15% fall in the Department of Education budget<sup>28</sup>.

Such an outcome is clearly inconsistent with the “...long established principle that all areas of the United Kingdom are entitled to broadly the same level of public services and that the expenditure on them should be allocated according to their relative needs”<sup>29</sup>. In addition, the implication of the Barnett Formula - that public spending per head should be equalised across the UK - does not apply to the current position

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<sup>28</sup> Alternatively if spending on schools was assumed to be in line with relative pupil numbers then spending in the rest of the NI departments would need to fall by almost a quarter.

<sup>29</sup> Para 2.9 Needs Assessment Study Report. The Report of an Interdepartmental Study co-ordinated by HM Treasury on the Relative Public Expenditure Needs in England, Scotland, Wales and Northern Ireland HM Treasury (1979)

within England where, for example, identifiable public expenditure is 15% higher per head of population in the North East than England as a whole<sup>30</sup>.

Whilst additional work is required to assess with greater precision the UK wide variations in need for health and social funding, as an initial position it is the view of this Review that the second option for funding the spend projections detailed above are not feasible and are inconsistent with the parity of provision principle. Therefore, there should be some form of Barnett formula bypass, as has been the case in the past, to allow the same level of service to be provide in Northern Ireland as the rest of the UK.

**Recommendation 6: If the future spending path suggested by this Review is accepted, then there needs to be some way round the implications of the Barnett Formula for health and social care if the general principle of Barnett are to be maintained and other public services in Northern Ireland are not to suffer.**

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<sup>30</sup> 2004/05 figures from Table 8.11 in PESA 2005 (HM Treasury)