

Mind the gap: sustaining improvements in the NHS beyond 2008

A Report for BUPA by Edward Bramley-Harker and
Tim Booer (NERA Economic Consulting) in association
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Background to the Project

The Project that led to the production of this Report was initiated in November 2005 by Fergus Kee, Managing Director of BUPA Membership (BUPA's UK and Ireland Insurance Division), who wished to better understand the resource needs of the country's changing health system.

BUPA has no interest in overstating any financing challenge that the NHS may face. On the contrary a steady and secure financing base for the NHS provides a stable context in which BUPA can continue to conduct its diverse businesses in the UK successfully.

The Project Team quickly concluded that from 2008, for the first time in a decade, the NHS faces the possibility of a significant and increasing funding deficit. The Team decided, after some deliberation, to put its findings into the public domain in order to stimulate constructive and considered debate - on both the scale of the forward challenge and plausible and sustainable ways to resolve it.

The Project Team asked Edward Bramley-Harker of NERA to take lead responsibility for drafting this resulting Report.

The Report seeks to represent the consensus of views held by the members of the Project Team. It does not represent the formal views of NERA Economic Consulting, Frontier Economics or BUPA.

The Project Team comprised: Fergus Kee (Managing Director, BUPA Membership), Nicholas Beazley (Company Secretary and Group Strategy Director, BUPA), Matthew Bell (Consultant, Frontier Economics), Peter Bingle (Managing Director, Bell Pottinger Public Affairs), Tim Bolderson (Senior Partner, Outsights), Tim Boer (Senior Advisor, NERA), Edward Bramley-Harker (Associate Director, NERA), Catherine Brown (Managing Director, BUPA Wellness), Duncan Innes (Public Affairs Manager, BUPA), Peter Jones (Director of Communications, BUPA), Michael Ridge (Partner, Frontier Economics), Helen Vaughan-Jones (Researcher and Press Officer, BUPA), Andrew Vallance-Owen (Group Medical Director, BUPA) and Mark Bassett (Head of Public Policy, BUPA and Project Manager).

Executive summary

Background

The NHS in England is going through a lengthy period of transformation. The last few years have seen large increases in the amounts of money flowing into the health system. This has been accompanied by a programme of supply side reform and, more recently, changes to commissioning on the demand side. The general trend towards more competition in the supply of healthcare, more flexible use of private sector facilities and skills and attempts to make the system more responsive to the needs and wishes of patients, are to be welcomed.

With support from BUPA, NERA Economic Consulting has, since 2001, been developing a whole-system model of the English NHS. The Model seeks to simulate the behaviour of the English healthcare system and project to 2015 the likely activity levels and resource requirements of the NHS. More details of the Model can be found in Appendix A. This Report summarises the outputs of a study sponsored by BUPA, with the objectives of:

- helping evaluate the programme of reform in the NHS between 1997 and 2006
- understanding the likely progress and impact of the NHS reform programme between 2007 and 2015
- helping evaluate the need for financing reform in the NHS after 2008

NERA Economic Consulting provided the modelling that informed the projections about the future demand of funding. Frontier Economics provided macroeconomic analysis and projections about the future supply of funding.

The demand for and supply of healthcare funding

In his review for the Chancellor, Sir Derek Wanless recommended that the NHS be given significant short-term increases in resources in excess of 7% per annum in real terms until 2008. Wanless developed a number of scenarios for the likely funding growth required from 2008 onwards. His estimates for the period 2008 - 2013 ranged from 4.4% - 5.6% real growth per annum. Two questions examined in the first part of this study are:

- do the Wanless projections of funding requirements beyond 2008 now need revision?
- if not, can the UK afford for public spending on healthcare to grow at such rates?

After addressing these questions, the study examines possible ways of bringing more funds into the healthcare system in general and of improving the long-term financial stability of the NHS.

The 'need' for healthcare funding (Section 2.1)

To make projections up to 2015, various assumptions have to be fed into the Model. Some principal ones are: that demand for NHS care will continue to grow at much the same rates as in the recent past; that earnings per head of NHS staff will have to increase at around the average for the economy as a whole; and that NHS productivity will improve somewhat on its past performance. For that last assumption there is no evidence of progress yet.

The demand for healthcare funding will grow strongly post 2008 (Section 2.2)

Despite a generous assumption of a 1% per annum improvement in staff productivity trends (reflecting government plans to strengthen commissioning and improve IT in the NHS) the Model projects the need for a 4.9% per annum growth in real NHS expenditure between 2008 and 2015. That could be an underestimate if productivity and health improvements do not materialise; it could be an overestimate if, for example, the rise in emergency admissions is reversed. At present there is no convincing reason to revise downwards the estimates by Wanless of a need for future real spending to grow at between 4.4% and 5.6%, well above likely growth in the economy.

The ability to meet demand for health funding through public spending is constrained (Section 2.3)

That order of spending has to be set against the government's ability to fund it. In the last Budget, the Chancellor indicated that overall public expenditure in the period 2008 - 2011 would grow in real terms at 2% (2008/9) and 1.9% (2009/10 and 2010/11). Within such limits, and given that education has been made another priority, it is hard to see how NHS funding could be allowed to grow at more than 3.5% per annum without holding down the spending growth of all the other government departments in aggregate to close to zero.

Post 2008, there is a gap between what the NHS 'needs' and what the Exchequer can afford (Section 2.4)

If NHS spending needs to grow at 4.9% per annum after 2008, and the government can only afford to let spending grow at 3.5%, the gap between the two will be £11 billion by 2015 (in today's prices). This is roughly 10% of NHS spending.

The implications of a funding gap

Options to increase public expenditure funding of the NHS are limited (Section 3)

Faced by 2015 with an NHS funding gap of that size, the government appears to have few options for increasing the funds that it could contribute from the Exchequer. With the economy growing at say 2.5% a year in real terms, and tax revenues, over the long-term, rising at much the same rate, a 4% to 5% real growth in NHS funding would require severe, probably unrealistic, pressure on the spending of other government departments. An alternative option, of raising taxes, looks to require tax increases of a size that would be politically very difficult. A third option, of borrowing, would not be a long-term solution and would breach the Chancellor's own rules on the limits of government borrowing.

Muddling through with insufficient resource would undermine much of the regeneration in the NHS

An alternative that, unfortunately, cannot be excluded is that the NHS would simply be given less money than it needs. This is likely to impact most on the least well-off in society. It would eventually reverse the gains of recent years during which, for the first time ever, the NHS has been able to plan a regeneration based on secure

funding, for a reasonable number of years. Ways must be found of avoiding that scenario.

The NHS does have some sources of income other than from the taxpayer but these are mostly too small and inflexible to close the funding gap. The only realistic way, without recourse to more tax funding would be:

- still larger productivity improvements than already assumed in the Model. For reasons explained in Section 4.1 of the Report, this does not seem likely, or
- by reducing the scope of the healthcare services it provides. Regrettably, this is likely if it is short of funds for an extended period

Scope for the NHS to raise income from existing sources is limited, and large productivity gains are unlikely (Section 4)

A set of funding solutions

There is a set of solutions that involve bringing additional funds into the healthcare system.

One option is to make greater use of co-payments, in much the same way as other developed health systems do. Wanless noted that there is an argument for extending out-of-pocket payments for non-clinical services. In its recent report, the Health Select Committee called for a study to examine the scope to introduce charges for certain health services and to overhaul the current system of exemptions from England's very limited set of co-payments. Small charges applied to high volume services could raise significant revenues, even after allowing for a set of exemptions or other forms of essential support to protect vulnerable groups.

Significant revenues could in principle be raised through co-payments (Section 5.4)

There are other mechanisms to bring additional funding into the healthcare system. Many people currently pay to access private healthcare services, either directly or through private medical insurance (PMI). Individuals that follow this route in effect free-up NHS resources and funds to treat other patients. This happens on a relatively small scale in the UK, but incentives could be offered to encourage greater use, perhaps by employers rather than individuals.

There are other mechanisms to encourage individuals or employers to pay more into the health system (Section 5)

Supplementary funding offers another potential route. Individuals would be able to top-up their NHS 'entitlements' to access additional services and different care settings. This approach would allow individuals who wish to, to access additional services at a relatively affordable cost. It also provides scope for the NHS to be more explicit about what it will and will not fund, and allows individuals to access care that is not regarded as core to the NHS. Such an approach reflects the Health Select Committee's recommendations that the NHS should explore the feasibility of establishing an NHS core package of care (available to everyone) with charges for services that do not merit full NHS funding.

Up-front costs are not the only relevant factor to consider when thinking about funding change. Long run benefits matter.

Recommendations

Any change to the funding base of the NHS will involve some up-front costs (Section 5). However, these are not the only considerations when debating the case for change. The more relevant factor is whether there are longer-term benefits from moving towards a more mixed funding base. As the Health Select Committee notes, new technologies will increase NHS funding pressures. A debate is needed now on how to respond to this challenge. In the face of funding pressure, it will be increasingly difficult for the NHS to provide everything demanded and this needs explicit recognition. If it is not, local commissioners will set their own local priorities.

The purpose of this Report is not to recommend one solution to the problems of NHS funding. It is likely that there is no one best funding option: the answer will probably lie in a combination of options. Any solution needs to strike a balance between bringing additional funding into the system, being attractive to the population, and bringing longer-term flexibility to the funding mix.

The objective of this Report is to start a debate. We believe that there will be a future funding gap in the NHS. If this is not addressed in a sustainable way, it will have a universal and detrimental impact on the NHS. We think that in dialogue with the public and with other NHS stakeholders, a cross-party consensus needs to be reached on long-term solutions. There will be inevitable resistance to any change. However, the debate should recognise that:

- tax funding can still remain the driver of the majority of NHS funding. The debate is not about reducing the role of NHS funding and NHS entitlements to vulnerable groups
- co-payments and other forms of private funding offer a route for easing some of the funding pressure in the NHS. Structured in the right way, these need not have a detrimental impact on the NHS or the least well-off
- up-front costs are not the only consideration and hence should not be seen *de facto* as the barrier to change. The debate needs to recognise that there may be efficiency and welfare benefits from moving to a more mixed and responsive funding base
- there are funding mechanisms that could bring additional revenues for the NHS, improving service provision for all population groups

This is not a debate about whether a two-tier health system should be created in the UK. The reality is that there is already a two-tier system. If there is a real funding gap in the NHS post 2008, the implication is that the two tiers will diverge as the NHS finds itself unable to keep pace with the independently funded health sector in terms of funding, innovation and consumer responsiveness. Measured debate about funding solutions provides an opportunity to consider how this can be addressed and how NHS care can be sustained and further improved.

A cross-party debate about sustainable funding solutions is needed (Section 6)

There are strengths and weaknesses to all funding approaches. These need to be considered against long-term benefits of change and against the consequences of ignoring the funding gap (Section 6)

1 About this Report

General trends in the NHS towards more competition in the supply of healthcare, a more flexible use of the facilities and skills in the private sector and attempts to make the system more responsive to the needs and wishes of people and patients are all to be welcomed. However there is a need for a better understanding of the funding requirements of the system in the future and the consequences that arise.

1.1 Purpose

The NHS in England is going through a lengthy period of transformation. The last few years have seen large increases in the amounts of money flowing into the health system. This has been accompanied by a programme of supply side reform. In large part this programme has been about developing new hospital capacity and ensuring that both infrastructure and human capital is in place to meet current and future demands. This has been supported by the introduction of mechanisms that rely on local control and incentives to influence how healthcare capacity is used - examples are payment by results, practice-based commissioning and the Patient Choice programme. The next stage of the reform programme, which is very much in the early stages, is to strengthen the demand-side of the system. This includes methods to strengthen commissioning functions and improve the way the NHS plans and sets its priorities, contracts for care and monitors results.

BUPA recognises the dependencies between the public and independent healthcare sectors and so has a keen interest in understanding and evaluating the impact of reform in the NHS. To support this, BUPA has undertaken a project with three key objectives:

- to help BUPA evaluate the progress of reform in the NHS between 1997 and 2006
- to understand the likely progress and impacts of the NHS reform programme between 2007 and 2015
- to help evaluate the need for financing reform in the NHS after 2008

An assessment of funding requirements is a particular focus. A number of recent reforms and initiatives have had a fundamental impact on the availability and use of NHS resources. For instance, the NHS Plan¹ sets out targets for increasing staff resources and improving the infrastructure. The Wanless Report assessed the amount of financial resource that the NHS is likely to need over the medium term.² Recent growth in real resources has been unprecedented and negotiations of various staff contracts have had significant impacts on costs. The consequence of this is that much is now being made of the need for the NHS to make real productivity gains and to demonstrate good use of resources. Whether or not these gains are achieved has important knock-on effects for the future financial sustainability of the system.

1. Department of Health (2000) *The NHS Plan: a plan for investment, a plan for reform*

2. Wanless D (2002) *Securing our Future Health: Taking a Long-Term View, Final Report*, HM Treasury, April 2002

1.2 Background

To understand better the resource needs of the country's changing healthcare system BUPA has, since 2001, been working with NERA Economic Consulting to develop a whole-system model of the English NHS.

It is a tool that can help analysts and policymakers understand the implications of healthcare policy and funding decisions. The Model seeks to simulate the workings of the primary and hospital sectors. In practice, reflecting fully the realities of the health system in a model is not feasible - it cannot account in complete detail for the many behavioural changes and responses, changes in policy and priorities and changes in technologies and practices. Hence, the Model is a simplification of the health system that maps the main relationships and flows. It is, nevertheless, a complex and sophisticated model that draws on a wide variety of data.

The BUPA/NERA Model (the 'Model') is discussed in more depth in Appendix A, but examples of its key purposes include examining:

- future levels of expenditure in the health service
- future levels of activity and resource use (doctors, nurses, etc)
- the future 'need' for healthcare resources
- changes in politically and socially sensitive effects such as NHS waiting lists and waiting times
- the impact of changes in financing structures and the roles of the public and private sectors (in both funding and delivery)

In his review for the Chancellor, Sir Derek Wanless recommended that the NHS be given significant short-term increases in resources - over 7% real terms growth per annum to 2008. In its submission to the Wanless Review, BUPA highlighted the significance of productivity growth and, in particular, that the assumptions on future productivity improvements looked optimistic. The additional funding growth recommended by Wanless was, in part, to allow the NHS to invest in staff, capacity and processes. The intention was that the resource growth would tail off as the NHS became more productive and the public became more engaged with the NHS. Wanless developed a number of scenarios for the likely funding growth required from 2008 onwards. His estimates for the period 2008 to 2013 ranged from 4.4% to 5.6% real growth per annum.³

The government accepted the recommendations to 2008. In fact funding growth to date has been higher than Wanless suggested. Nonetheless, from 2008 onwards a number of questions remain:

- **is the range of 4.4% to 5.6% still the 'right' range for the growth in health spending?**
Crucial issues are whether the NHS has made progress on improving productivity, has invested in infrastructure and has engaged with patients such that the need for spending could fall to the bottom of this range, or even below it
- **if this is the correct range, can the UK afford for public spending in healthcare to grow at this rate?**
Later sections of this Report will examine the UK's public expenditure position and commitments about growth in public spending to assess the affordability of growth in healthcare spending

3. Wanless D (2002) *Securing our Future Health: Taking a Long-Term View, Final Report*. HM Treasury, April 2002

The answers to these questions, and how the NHS responds, are fundamental to understanding how the country's health system will develop over the medium-term. The remainder of this Report examines these questions and the likely impact of alternative strategies to deal with any funding shortfall.

1.3 The structure of this Report

This Report is structured as follows:

- Section 2 examines the demand for healthcare funding, using the Model, and assesses the likely availability of healthcare funding, based on an analysis of UK public spending. Our conclusion is that over time a gap will emerge between the funding that the NHS 'needs' and what it might get
- Section 3 examines how the Exchequer could fill the funding gap, either by raising taxes, borrowing or by re-allocating public expenditure from elsewhere
- Section 4 asks whether the NHS could help to close the funding gap, either by making better use of resources through large productivity gains, or through existing income generation practices
- Section 5 considers more radical steps that the NHS could take either to raise additional funds or reduce the need for public funds. This could involve more widespread use of co-payments, or the NHS gradually changing, over time, the scope of what it offers. There are also alternative approaches to funding healthcare that could be over-laid on existing funding structures and this section explores how other funding approaches could be used to complement a system that is financed primarily by tax
- Section 6 outlines our conclusions and recommendations

2 The demand for and supply of healthcare funding

This section of the Report argues that, in the absence of major new initiatives, there will be a progressive shortfall in the tax funding of the NHS after 2008. That shortfall could amount to around £11 billion by 2015, or some 10% of the projected NHS requirement. The consequences for patients would be rising waiting times, a renewed deterioration of facilities and restrictions on the range of treatments available under the NHS.

Our estimate of the required growth in real healthcare expenditure after 2008 is 4.9% a year. That projection falls well within the range projected in the Wanless report prepared for the Chancellor in 2002.

Public spending analysis suggests that, given the other demands on the public purse, it will be unlikely that tax-funded spending on the NHS could grow faster than 3.5% a year in real terms after 2008. The difference between those two figures generates a growing gap.

2.1 How much funding does the NHS 'need'?

2.1.1 The role of the Model

Estimating the amount of funding that a health system needs is complex. Defining 'need' is complex and partly subjective. Patients' 'wants', physician priorities and predicting the impact of technology development are all hard to predict. Determining the cost of meeting 'need' also depends on the interaction of all the different components of the health system; it will depend on the interaction between demand and supply and a host of behavioural responses.

Within the Model, projections are made about the amount of healthcare patients are likely to be demanding. This is primarily driven by the number of people presenting for primary care, with assumptions about referrals through to other parts of the system, and assumptions about the use of emergency care.

The Model also examines trends in resource inputs (eg staff, bed numbers), the cost of inputs (eg wage growth) and the productivity of inputs. Combining this information allows us to make estimates of the capacity of the system and the cost of running it.

The interaction of capacity, unit costs and patient demand allows the Model to estimate future funding requirements and other system outputs such as activity levels and waiting lists.

The Model is described in more detail in Appendix A.

2.1.2 Some key assumptions

For the Model to make future projections of health system capacity and activity, assumptions have to be made about how inputs, unit costs, productivities, referral rates and the mix of capacity will change over time. Details of the main assumptions used in the Model are listed in Appendix A.

The Model makes projections from 2004 (the most recent year for which full data are available) up until 2015. In general, our basis for making assumptions has been to look at recent trends in a variable and to make projections on the basis of past trends, except where we believe there is a good case to be made for past trends changing. Some of the most visible assumptions are that:

- staff numbers grow broadly in line with recent trends (although growth in nurse numbers is slightly lower, as recent growth has been above long-run trends)
- wage growth post 2008 is close to national average earnings growth per head (typically around 2% real terms growth per annum)
- staff productivity growth is 1% higher than recent trends
- demand for healthcare (proxied in the Model by referral rates) is in line with recent trends

See Appendix A, Box A.3.1 for more detail on these assumptions.

2.2 Projections of the 'need' for healthcare funding

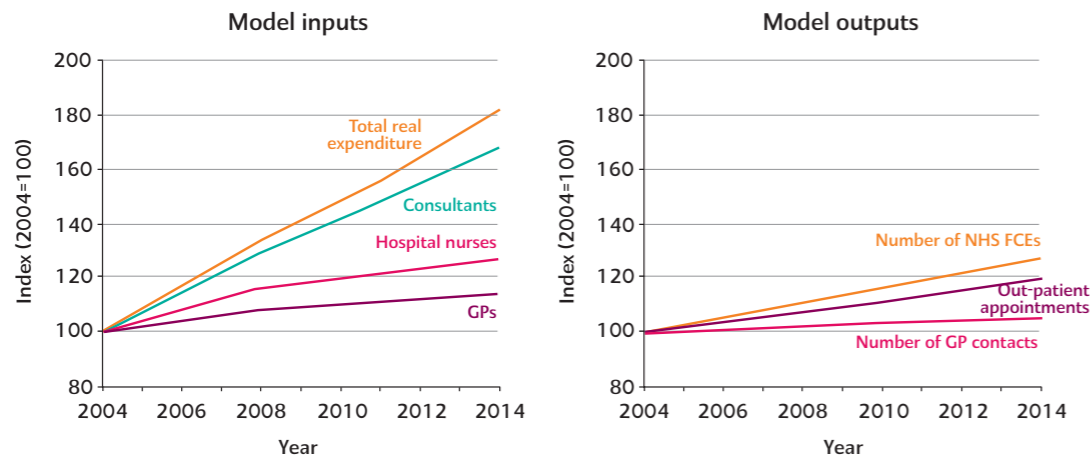
Using the assumptions listed in Appendix A, the Model makes projections of the likely requirements for healthcare expenditure up to 2014. The Model suggests that total funding in the NHS (primary and secondary care) will need to grow by 7.5% per annum in real terms up until 2008, slowing to 4.9% thereafter until 2015.

On the basis of the assumptions made, as well as projecting growth in funding requirements, the Model also projects growth in some of the basic outputs of the health system. For example, the Model projects that the number of in-patient admissions will rise by 2.6% per year until 2008 and 2.3% between 2008 and 2014. The overall number of out-patient appointments rises by 1.9% per annum between 2008 and 2014. In this scenario, the NHS achieves most of the relevant Public Service Agreement (PSA) targets that the Department of Health has been set by the Treasury.⁴ The latest (18 week total) waiting list target is not met in the Model's base scenario, although it is met shortly after the 2008 target.

Figure 2.1 summarises the primary inputs and outputs of the Model, drawing on the assumptions outlined above and in Appendix A. Box 2.1 examines if less funding might be required than the Model's central projection of 4.9% real terms growth per annum from 2008.

4. In this context, the most relevant PSA targets are those relating directly to NHS inputs and outputs rather than those, for example, focused on reducing broader health inequalities.

Figure 2.1 Inputs and outputs in the 'base' scenario



Source: BUPA/NERA Model

The Model's core projection of the need for healthcare funding is in the middle of the range that was set in the Wanless scenarios (which ranged from 4.4% between 2008 and 2013 to 5.6%). On this basis, one view is that our projection is likely to be an underestimate of the true level of funding need given that:

- wage growth and growth in staff numbers has been higher than Wanless anticipated
- productivity improvements have not been as significant as was hoped
- the NHS has not made good progress in reducing emergency admissions
- many of the efforts to encourage the public to engage with the NHS have so far resulted in increases in spending (such as increasing the prescribing of statins), but the longer-run benefits are not yet emerging

Despite a generous assumption of a 1% per annum improvement on recent productivity trends, the Model projects the need for a 4.9% per annum growth in real NHS expenditure in England between 2008 and 2015. That could be an underestimate if productivity and health improvements do not come; on the other hand it could be an overestimate if the current trend of rising emergency admissions is reversed. The authors concluded that there is no convincing reason to revise downwards the earlier estimates by Wanless of a need for future real spending to grow at between 4.4% and 5.6% per annum, well above any likely growth in the economy.

2.3 The supply of public funding for healthcare

The NHS has received considerable extra money in recent years because of a combination of factors. Primarily, the UK economy was in a strong public spending position at the start of the decade. The UK economy has outperformed most other G7 economies over the last 10 years (real GDP per capita growth has been higher and less variable than in other G7 countries), and inflation has been low and stable. This strong macroeconomic performance, combined with public spending restraint during the early years of the New Labour government created a Budget surplus that enabled government to increase public spending dramatically from 2000 onwards. At the same time, there was broad cross-party support for putting more money into the NHS.

The public spending position now is rather different. GDP growth has slowed, which in turn slows growth in government revenue. This limits the future scope for higher public spending. In the last Budget, the Chancellor indicated that overall, public expenditure in the period 2008 - 2011 would grow at 2% (2008/9) and 1.9% (2009/10 and 2010/11).⁵ Figure 2.2 illustrates how this cap compares to historic public spending growth.

Box 2.1 Might expenditure growth need to be less?

The Model's projection of a required increase in real NHS spending of 4.9% a year between 2008 and 2015 is a best estimate based on what look to be realistic assumptions. Moreover it meets existing government targets, except that the 18 week total waiting time target would be reached a year or two late.

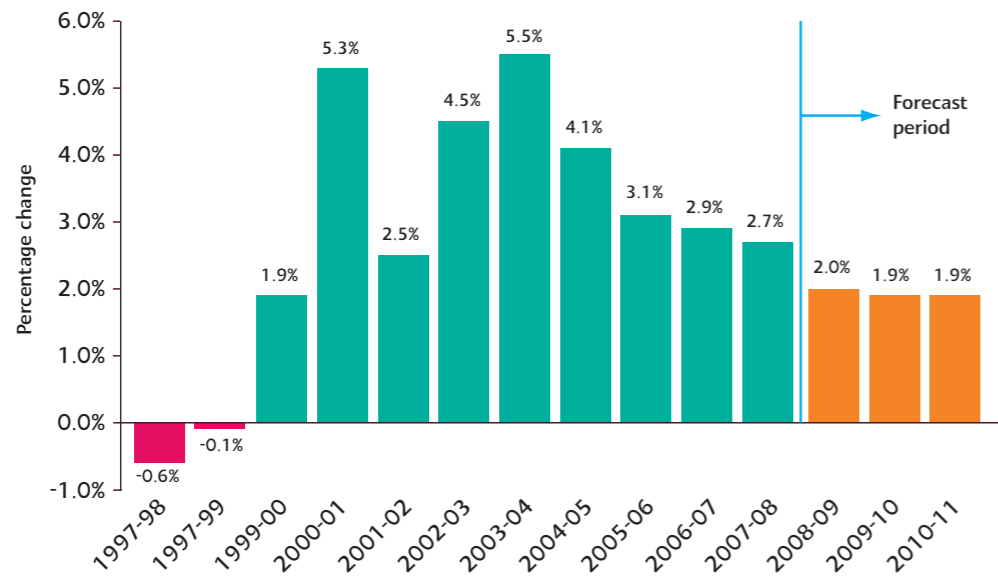
However, in case we have been too pessimistic about what performance improvements might be achieved we have looked at an alternative projection based on two additional, post-2008, performance targets. These are:

1. to raise the proportion of surgery performed as day cases to 40% - it is currently around 30%
2. to slow the growth of hospital emergency admissions to 1% a year less than planned admissions - the proportion of emergency admissions has been rising in the past

No such performance targets currently exist but, if they were set and achieved, the Model indicates that the required post-2008 growth of expenditure would drop to 4.5% a year. That would be close to the bottom end of the Wanless estimates, which no doubt assume those kinds of performance improvements in the 'fully engaged' scenario.

In the absence of such targets, and the prospect of their achievement, we consider that the 4.9% projection is more realistic.

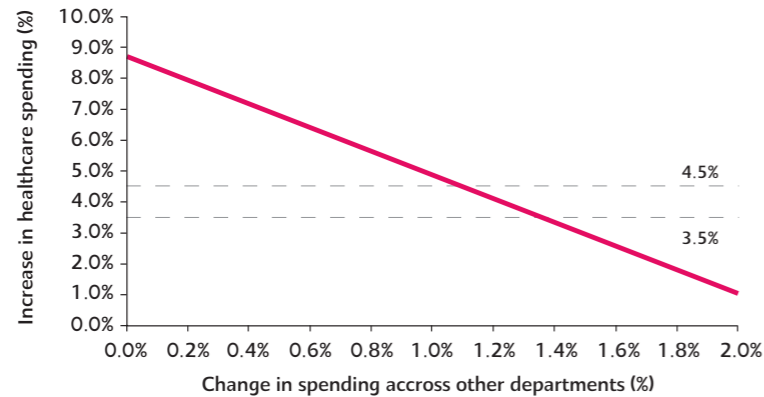
Figure 2.2 Real public spending growth (1997 - 2011)



Source: Frontier Economics Ltd, quoting HM Treasury

These spending forecasts effectively cap overall public spending growth, although there is still freedom to decide how to allocate public spending within the cap. Figure 2.3 illustrates this freedom. It shows the relationship between growth in healthcare spending and growth in other public expenditure areas, within this public expenditure ceiling. It suggests that if health spending were to grow at 4.5% per annum in real terms, aggregate spending in other areas would be limited to around 1.1% per annum growth. If health spending grew at 3.5%, this number would rise to about 1.4%.

Figure 2.3 Growth in health spending versus other public spending programmes

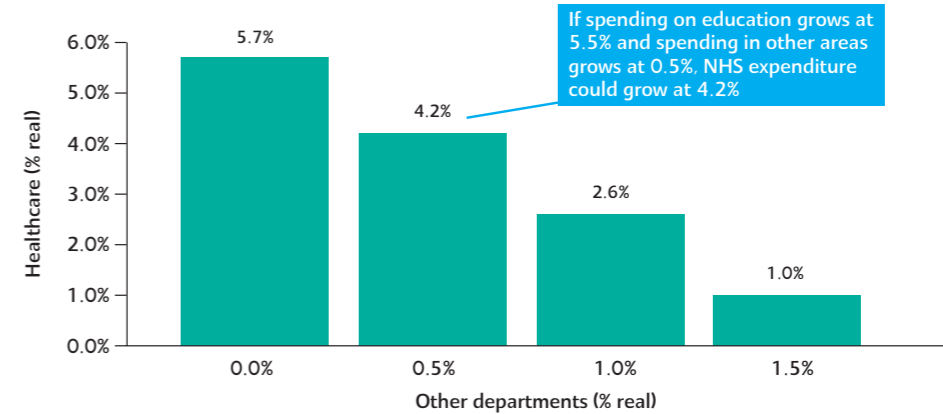


Source: Frontier Economics Ltd

Where the NHS will sit on this line is an unknown at the moment.

An alternative way to approach the question is to ask what expenditure limits other government departments could live with. In the last Budget, the Chancellor indicated that education was a priority. Whilst no firm commitment on spending growth was made, it is possible to look at the impact of a commitment to increase spending in education, whilst staying within the overall ceiling of 1.9% to 2% growth, and to examine the consequences for health spending. In other words, how much is left in the public expenditure pot if education takes a significant share of spending growth? As an example, Figure 2.4 illustrates the consequences of a commitment to increase public spending on education by 5.5% per annum in real terms, showing how much public spending would be left for healthcare and other spending programmes.

Figure 2.4 Scenarios of public spending on healthcare post 2008



Source: Frontier Economics Ltd

Whilst no firm commitment has been made either about growth in education or in other areas, these scenarios illustrate that the current public spending environment is tight. It would mean stringently low settlements with other government departments if healthcare were to receive more than around 3.5% annual real terms growth in spending in the period 2008 - 2011. That compares with an average annual increase of 4.2% per annum real growth for the NHS (UK) over the period 1973 - 2004 (Figure 2.5).

In historic terms, 3.5% growth in healthcare expenditure is rather low. Between 1973 and 2004, public expenditure on health in the UK has grown in real terms by 4.2% per annum. Over this period, it is generally accepted that the NHS was under-funded. This was partly the driver for the recent significant increases in funding. If spending growth falls below historic norms, it seems likely that the NHS will find it hard to deliver service improvements and to continue to invest in infrastructure and in its workforce.

Figure 2.5 Growth in NHS spending (UK) (real terms, £ billion, 1973 - 2004)



Source: NERA calculation drawing on HM Treasury (www.hm-treasury.gov.uk) for GDP deflator data and the OHE Compendium of Health Statistics, 16th Edition 2004 - 2005 for NHS expenditure

2.4 The gap between the need for healthcare funding and the supply of funding

2.4.1 Is there a 'funding gap'?

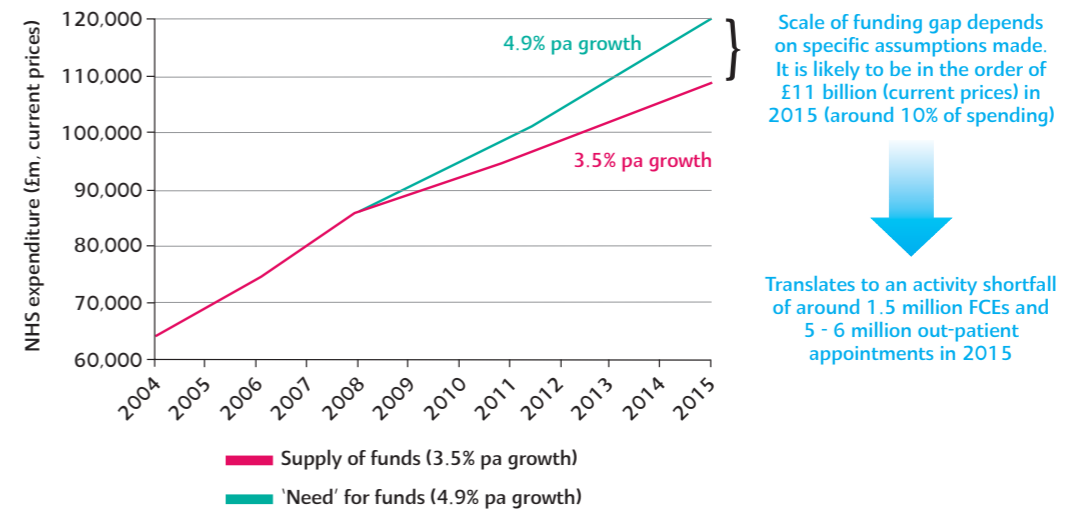
Our projections are that post 2008 the NHS will require real funding growth of around 4.9% per annum. There can be debate about the precise assumptions made to arrive at this estimate but importantly this growth is in line with projections made by Wanless. In general, the NHS has not fully progressed the agenda that Wanless set out so that there could be an argument in favour of the higher end of his projected range, ie above 5% per annum.

As against that, the projection of 3.5% per annum growth in public spending on the NHS between 2008 - 2011 looks to be at the upper end of what the Chancellor can afford given other public sector priorities and the current fiscal situation. (In subsequent sections of this Report, we will examine options for increasing public spending.)

It is simple arithmetic to estimate the gap between the need for funding and the supply.

Figure 2.6 illustrates that by 2015, the gap between the two will have reached around £11 billion (in today's prices), which is roughly equivalent to 10% of NHS spending. Box 2.2 examines if the funding shortfall might be transient.

Figure 2.6 The funding gap



Source: NERA and Frontier Economics Ltd

Box 2.2 Might a funding shortfall be transient?

It might be argued that this analysis reflects the current budgetary stringency in the UK and that the funding problems identified here are transient and will be resolved by rising prosperity which eases the government's financial problems.

The economic evidence suggests not. Healthcare is a 'product' for which demand tends to rise faster than real incomes. In contrast, tax revenues rise no more than in line with national income, in the absence of tax changes, and political constraints tend to limit the capacity for tax increases. That means that a tax-funded healthcare system will demand a rising proportion of tax revenues unless the real cost of healthcare falls over time. However, the evidence, here and in other countries, is that the real cost of healthcare is rising rather than falling. That means that it would be normal for expenditure on healthcare to rise as a proportion of incomes, and of tax revenues. The problem is endemic rather than transient and will not go away other than temporarily.

2.4.2 Consequences of the funding gap

There are a number of ways to respond to a gap between the need for and supply of healthcare funding. One option is simply to ignore it and hope that the NHS will somehow live within reduced resource growth. However, the consequences of this strategy would be to undo much of the progress that has been made in recent years. Figure 2.7 illustrates the estimated impact on activity levels in the hospital sector. Post-2008 growth in hospital activity would essentially stall.

3 Increasing public funding of the NHS

This section of the Report argues that, faced by 2015 with an NHS funding gap of perhaps £11 billion, the government appears to have few options for increasing the funds that it could contribute from the Exchequer.

With the economy growing at say 2.5% a year in real terms, and tax revenues, over the long term, rising at much the same rate, a 4% to 5% real growth in NHS funding would require severe, probably unrealistic, pressure on the spending of other government departments. An alternative option, of raising taxes, looks to require tax increases of a size that would be politically very difficult. A third option, of borrowing, would not be a long-term solution and would breach the Chancellor's own rules on government borrowing limits.

3.1 The options

Public expenditure growth offers one potential route for filling the funding gap. There are a number of ways that additional public resources could be put into the NHS. These are:

- to increase health's share of the existing public expenditure pot
- to expand the public purse by raising taxes
- to borrow, as a way of supplementing existing tax revenues

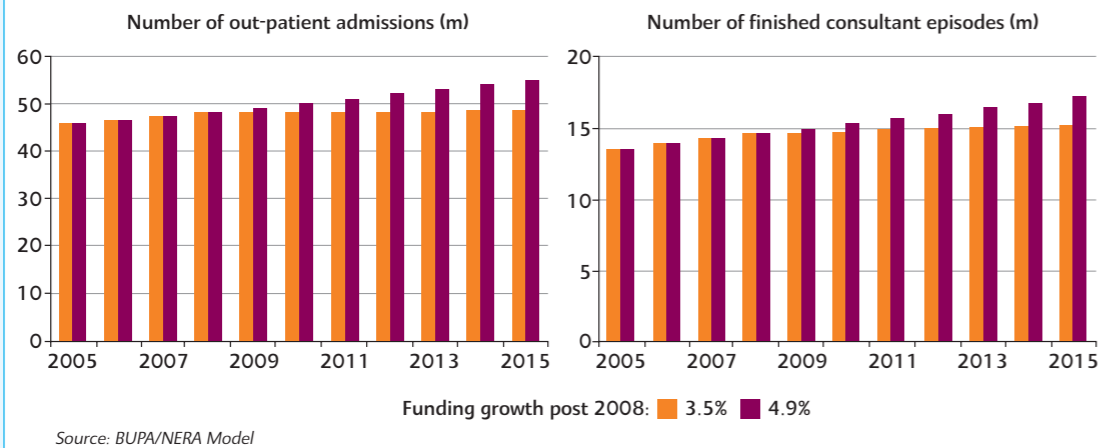
We discuss each in turn.

3.2 Allocating a higher share of public spending resources to the NHS

Healthcare is the second largest portion of public spending in the UK. In 2004/5, it accounted for almost 20% of total public expenditure. Only social protection (eg state pension and benefit payments) accounts for a higher share, and between them they account for more than half of all public expenditure (Figure 3.1).

The fact that health accounts for such a large share of public spending makes it proportionately harder to divert additional resources away from other forms of government spending. What seems a relatively small increase in health's share of funding translates into a disproportionately large amount of spending being diverted from other programmes. As Figure 2.4 illustrated, this becomes even harder to do if it is assumed that a significant share of public spending growth is earmarked for other priorities, such as education.

Figure 2.7 The consequences of the funding gap on hospital activity



To reduce costs, the NHS would need to consider how to reduce capacity and cut growth in unit costs. This implies:

- reducing capital expenditure, which in effect implies not renewing or maintaining existing capital stock. However, capital expenditure is only a small part of overall spending, and reductions in other costs would be required
- reducing growth in wages and in the growth of other input costs. However, certainly in the case of wages, it is likely that they could only be pegged below average wage growth in the economy for a short period. In any event, the Model's projections assume wage growth in line with national average wage growth, which is lower than recent NHS trends
- cutting capacity, by reducing staff numbers and bed capacity

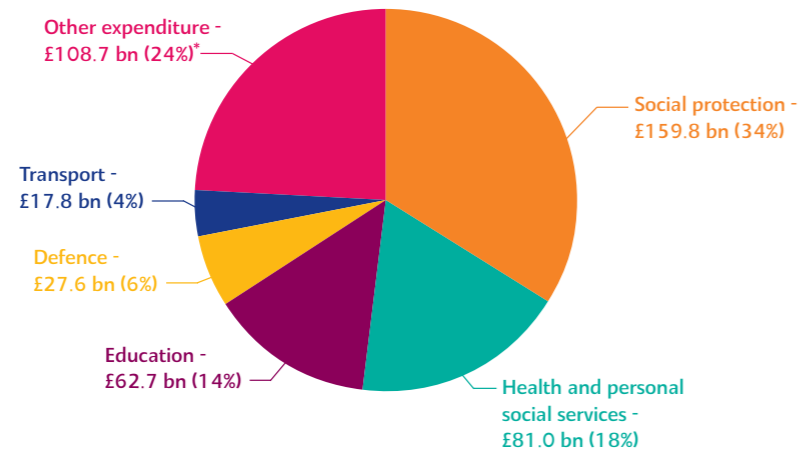
The most visible consequence of cutting capacity is that waiting lists would rise. However, the implications of too few resources being put into the NHS would potentially impact across all types and levels of care. Even if cost growth was controlled and capacity cut, this on its own would not leave the NHS in 'equilibrium'. Significant productivity increases would be needed to ensure existing levels of demand could be met, but these would need to be on a scale not seen before. Alternatively, demand entering the system could be reduced through tighter control of referral rates, in turn leaving waiting lists relatively stable, with the consequence the demand would be 'hidden' rather than 'seen' through growing waiting lists.

In short, the scenario of muddling through on too little money would eventually reverse the gains of recent years during which, for the first time ever, the NHS has been able to plan a regeneration based on secure funding, for a reasonable number of years. Finding ways to avoid that scenario is a highly desirable objective.

Possible ways to avoid the funding gap are examined in the remaining sections of this Report and include:

- increasing the level of public funding going into the healthcare system
- the NHS increasing the effective level of resources it has, either by improving productivity, raising income through other sources, or by reducing the scope of services it would otherwise be providing
- other more radical approaches that the NHS could use to bring in additional income, such as greater use of co-payments, or developing new funding streams

Figure 3.1 Government total managed expenditure (2004/5)



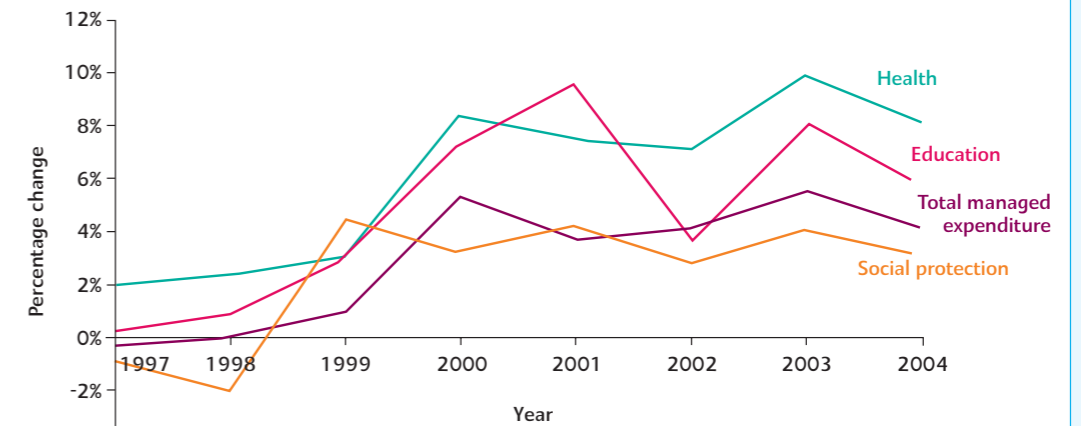
* This includes: housing and environment; public order and safety; public sector debt servicing; industry, agriculture, employment and training; EU transactions and international services; and recreation, culture and religion.

Source: Frontier Economics Ltd

Reallocating resources from other spending programmes in the current public expenditure climate is equivalent to implying that other parts of government spending can 'manage' with little or no real term increase in resources. For the most part, this is a political rather than economic judgement. A related question is whether there is a willingness to continue putting significant resource growth into the NHS. Figure 3.2 shows that in recent years the NHS has seen resource growth that is much higher than other public spending programmes. Education has also seen above average growth. However, this gives rise to a dilemma for policymakers. On the one hand, the consequences of not putting enough money into healthcare will be serious and will have to be managed. On the other hand, there is a question whether significant additional resources can be justified for healthcare, on the grounds that government has found it hard to demonstrate to the public that real improvements in performance have been delivered. Real productivity growth has not been demonstrated. In short, government has found it difficult to demonstrate improvements in the NHS that are commensurate with funding growth, which may make it harder to justify large funding growth in the next public spending round.

Given the trade-offs implied by re-allocating resources away from other spending programmes and into health, it seems unlikely that the NHS could be given a share of public expenditure growth that exceeds 3.5% in real terms per annum after 2008. In effect it would imply less than 1% per annum real terms resource growth across other spending departments, which would be difficult to achieve whilst also supporting other priorities, such as education, transport, national security, the environment and international development. Certainly by recent standards, such low growth would be well below the aggregate increases seen in public spending since 2000/01 (Figure 3.3).

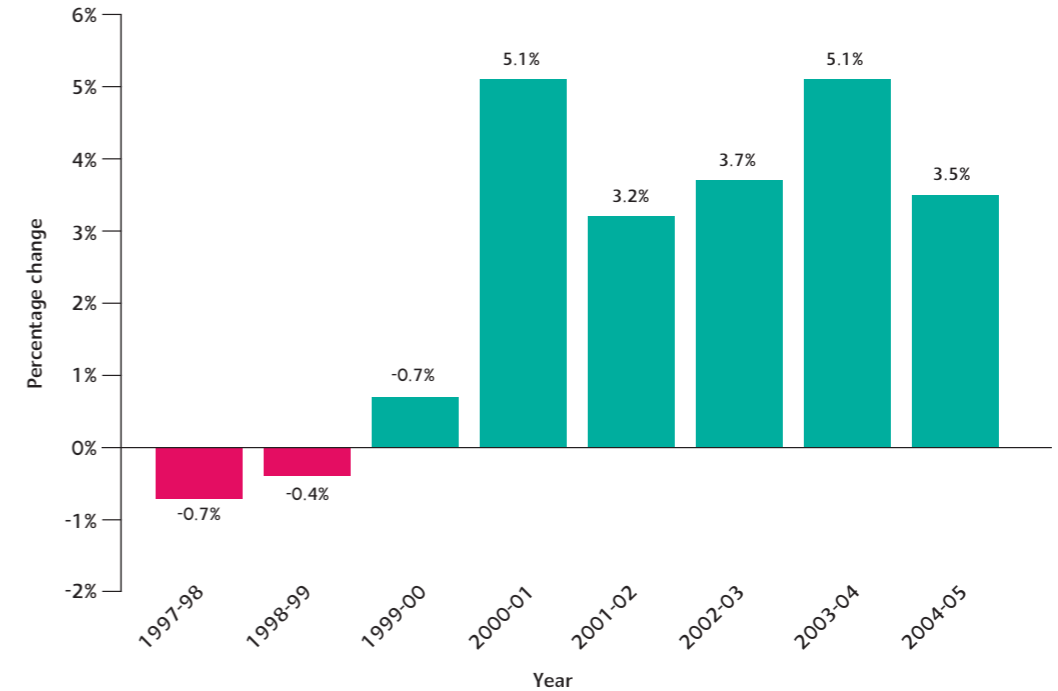
Figure 3.2 Changes in public expenditure (1997 - 2004)



Note: Total managed expenditure refers to growth in total public spending.

Source: Frontier Economics Ltd

Figure 3.3 Percent increase in total managed expenditure (1997/8 - 2004/5, real terms)



Source: Frontier Economics Ltd

3.3 The scope for tax rises

An obvious way to raise funds to increase public spending is to raise taxes. However, this would have broader economic and political implications. To date, the focus of the Chancellor in recent years has been on small adjustments to existing tax structures rather than to implement large new revenue-raising measures. One of the most visible exceptions was the increase in National Insurance Contributions (NICs) announced in the 2002 Budget. The Chancellor announced a 1% increase in NICs paid by employers, employees and the self-employed on all earnings above the NICs threshold, which was implemented a year later in April 2003.⁶ It was packaged as being required to fund additional investment in the NHS. Other big tax changes have been specifically targeted, such as increased tax on the profits of oil companies and on pension funds. There are no obvious 'soft and large' targets at present.

Raising the sorts of revenues implied by the funding gap (up to £11 billion per annum by 2015) through additional taxation would require big and noticeable increases in tax. Table 3.1 below illustrates the approximate amounts of revenue raised through incremental changes in tax rates.

Table 3.1 Revenue generated by changes in tax rates (2004/5)

Tax	Revenue raised
Change basic rate of income tax by 1p	£3.5 billion
Change higher rate of income tax by 1p	£1.1 billion
Increase employee National Insurance Contributions by 1p	£3.4 billion
Change main rate of corporation tax by 1p	£0.95 billion
Change VAT rate by 1 percentage point	£4.5 billion

Source: Frontier Economics Ltd reporting the IFS Green Budget 2004/5

The fairly straightforward conclusion from this is that closing the healthcare funding gap would require large increases in taxes. Whilst some tax increases may be forthcoming, it seems unlikely that such large revision to existing tax rates is politically realistic.

3.4 Borrowing

The NHS might be funded through increased borrowing, which could be used to supplement funding through tax revenues. Whilst in theory this is an option, in practical terms it is not a sustainable solution to the funding problem because borrowing has to be paid for. The degree to which this is achievable is also limited by the Chancellor's own borrowing rules. He has formally committed to observing two rules:

- the Golden Rule: over the economic cycle, the Chancellor can only borrow to invest. Tax revenues should equal or exceed current (non-investment) spending and the government will only borrow to fund net government investment. This rule has to be observed over the period of the economic cycle. In individual years the government might borrow more but over the economic cycle current expenditures must be less than or equal to tax revenues
- the Sustainable Investment Rule: the public sector's debt (net of financial assets) should be kept at a 'stable and prudent' level. The Chancellor interprets this as, other things equal, net debt will be maintained below 40% over the economic cycle. It was 35% in 2004/5 and is forecast to rise to 38.3% in 2008/9.⁷

These rules limit the degree to which the Chancellor could borrow to fund current spending in the NHS. The Treasury expects to meet its rules and has taken a number of steps to ensure this. This includes changing the definition of the economic cycle (so that it starts earlier (in 1997/8) and ends later (in 2008/9)) and through tax increases on oil companies. The 2006 Budget suggested that the Golden Rule will be met, but small changes in tax revenues or growth projections could alter this. The Budget forecast a surplus over the economic cycle of only £16 billion, which includes contingency reserves. Out of total managed expenditure of over £450 billion, this is a relatively small amount. In short, the Chancellor looks to be at the limit of his scope to borrow.

6. HM Treasury (2002) The Budget Report 2002. The strength to make long-term decisions: investing in an enterprising fairer Britain

7. HM Treasury The Budget 2006. A strong and strengthening economy: investing in Britain's economy, 22 March 2006

4 Solutions available to the NHS

This section of the Report asks whether the NHS could itself close the funding gap without demanding still more from the taxpayer.

Larger productivity improvements than those already assumed could do this and there are many opportunities for 'small but widespread' improvements. But there is a long history of such efforts that have yielded rather little. It seems hard, in such a large and complex organisation, to generate the kind of big productivity results that are necessary.

Similarly there looks to be only modest scope for raising funds from existing 'other income' sources such as car parking charges. Realistically the amounts involved are tiny in relation to the funding gap.

Lastly, the NHS could, and probably will under pressure, trim back on the range of services it provides. That probably means not less than now, but less than it could provide with developing technologies and skills. The hope is that this 'rationing' would take place in a thoughtful and systematic way, rather than be piecemeal under local pressures.

4.1 The options

The NHS could itself respond in a number of ways to the funding gap. As highlighted in Section 2, one likely but uncomfortable response is to ignore it and manage. The consequences of this are undesirable.

In this section, we assess three other responses from the NHS:

- the scope to improve the use of resources by improving productivity
- the ability to raise additional revenues through other sources of income
- the option of reducing the scope of the 'NHS offering' - the range of services that the NHS would provide

A fourth option is to reduce demand by improving the health of the population. In this Report we make no detailed assessment of the likely success of current public health initiatives in this domain. Recent efforts to manage chronic disease and reduce emergency admissions have not yet been shown to have a big impact, whilst lifestyle factors (such as growing obesity) point to the scale of the task that remains.⁸ Since the inception of the NHS, the hope has been that demand will tail-off and resource pressures will fall. To date factors moving in the opposite direction, such as rising medical technology and patient expectations, have tended to increase overall demand for NHS primary and secondary care services. The authors have identified no evidence which suggests an imminent reversal of this underlying trend.

8. See for example, Health Survey for England 1994-2003, Department of Health Welsh Health Survey 2003/04, National Assembly for Wales

4.2 Productivity improvements

Productivity is complex and difficult to measure, particularly in the context of health services where there is a multitude of inputs and outputs, and where both the volume of service and the quality of service provided matters. Estimates of productivity improvement in the NHS vary depending on the precise measures used and there is no unique basis for making comparisons or looking at trends over time. The Model uses simple measures of productivity (units of activity per input) and assumes that productivity improves on past performance by about 1% per annum.

4.2.1 What do we know about productivity?

No single number or measure of productivity is ever likely to be able to fully reflect the outputs of the NHS. Several studies have looked at measuring productivity in different ways and with various adjustments. Table 4.1 summarises the findings. The general conclusion is that 'crude' productivity growth in the NHS (activity levels divided by inputs) has been negative or at best zero. More sophisticated measures that adjust for quality and value suggest that productivity growth may have been positive. However, there is as yet no widespread consensus about the validity of such estimates.

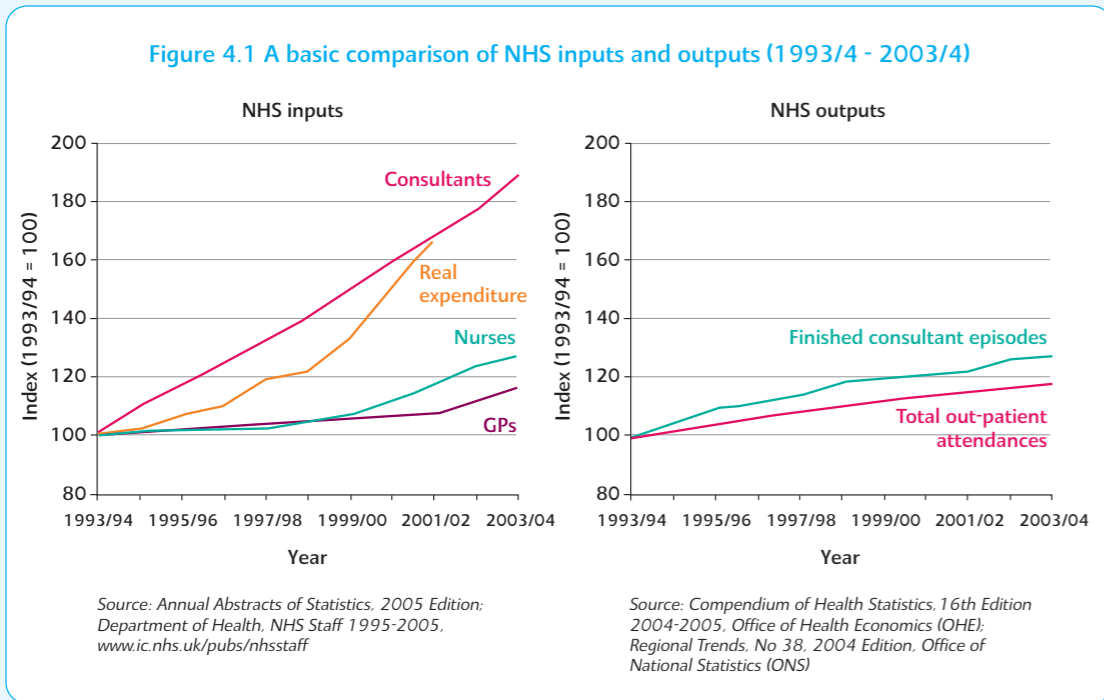
Quality improvements in healthcare are genuine achievements of which the NHS can be proud. However they have no immediate impact on the number of patients that can be treated and so are not directly relevant to modelling the flow of patients through the system. For that purpose, what matters is the number of patients treated per staff member and, for estimating expenditure, per unit of cost. On those measures, 'productivity', as defined for the Model, has been consistently negative in recent years. That is reflected in the assumptions used in the Model, albeit with some improvements in future years.

Table 4.1 Summary of measures of NHS productivity (inputs versus outputs)

Variable	Change (1999 - 2004)	Comment
Input cost growths:		
Input costs	Between 4.5% and 5.5% per annum	Precise growth depends on how indices are constructed, and on how capital and labour are measured
Output growths:		
Output growth without quality adjustment	3.9% per annum	Based on ONS measures of output from the Blue Book
With quality adjustment, but without value of health adjustment	5.0% per annum	Based on adjustments to account for changes in various measures of quality, and on a DH proposal to weight factors based on value rather than cost weights
With quality adjustment, with value of health adjustment	6.5% per annum	Includes an adjustment suggested by the Atkinson Review that adjusts the value of NHS output by rising real earnings (to reflect health becoming increasingly valuable)

Based on: Public Service Productivity: Health, Economic Trends 628, March 2006

A straightforward comparison confirms that on basic measures output growth has been low relative to growth in inputs. Figure 4.1 provides a snapshot that compares changes in staffing levels and overall health expenditure with growth in a set of NHS outputs (finished consultant episodes and out-patient admissions). There are difficulties in this type of measure (for instance, it treats all finished consultant episodes as being of equal value), but overall it confirms that input growth has far exceeded output growth.



In a recent letter to the NHS, the acting NHS Chief Executive set out areas where NHS productivity performance would be measured in the future.⁹ Data on how the NHS has performed in all these areas are not available historically, but some assessment can be made of recent progress. Section A.4 of Appendix A provides a summary.

4.2.2 What don't we know about productivity?

It is hard to draw inferences about likely productivity change in the future. We know that historically the NHS has found it hard to achieve productivity growth and that on measures of activity levels versus inputs, productivity growth has been negative. We also know that on the basis of many of the 'new' productivity measures set out in the Department of Health's operating framework for 2006/7, historic progress has been slow.

There are a number of other initiatives that have the potential to drive through significant improvements in productivity in the future. Examples include *Agenda for Change*, *Payment-by-Results* and *Connecting for Health*. There is also an expectation that the strengthening of commissioning roles in the NHS will drive

9. Department of Health (2006) The Operating Framework for 2006/7, 10 May 2006

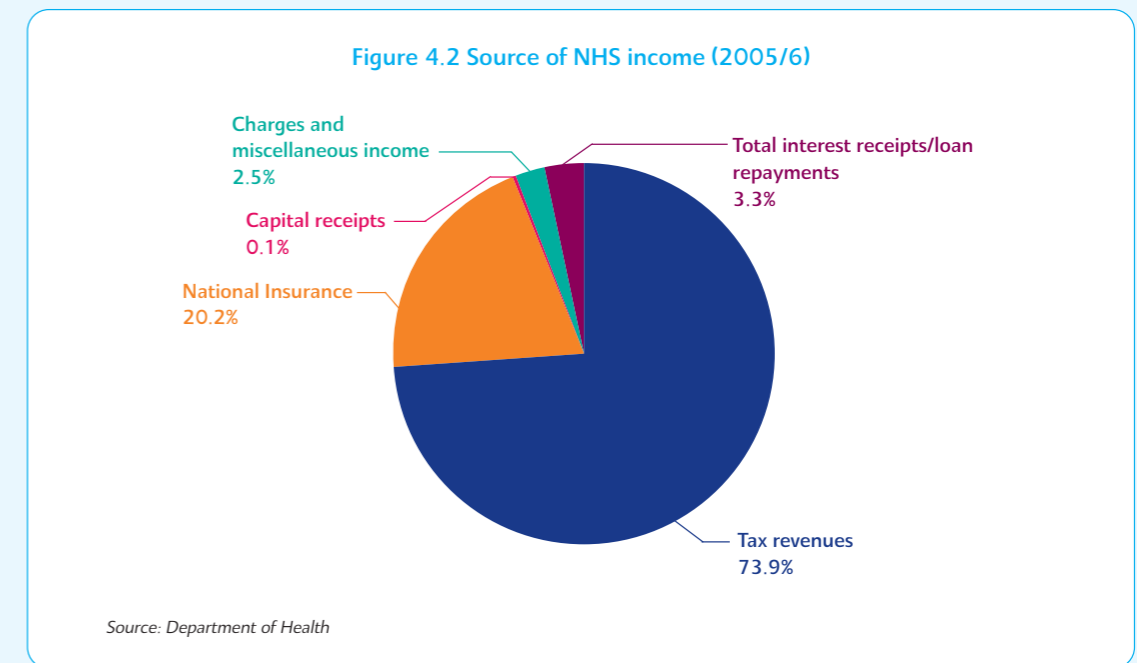
meaningful productivity growth. However, the impact of these is unknown. History suggests it will be difficult to deliver large improvements in activity levels through productivity change alone. However, we have assumed that the NHS will have some success in this and the Model assumes that staff productivity growth will be 1% per annum higher than recent trends.

Other figures shed some doubt on the full extent of the scope for productivity change to deliver significant improvements in value for money. For instance, the NHS Institute for Innovation and Improvement estimates that the NHS could save £78 million by improving staff productivity and managing agency staff costs.¹⁰ This number relates to cutting spending on agency staff and reducing absence rates, but overall it is small in the context of the funding gap.

A recent article in the *British Medical Journal* suggested that the NHS could save £2 billion by making better use of statins.¹¹ However, this is the saving over a five year period, and includes adjustments for switching to generic versions of statins, much of which would happen anyway. That is not to say that savings such as this are not important, and of course small improvements in productivity add up. But it does emphasise that generating large and new changes in productivity over a sustained period is difficult.

4.3 Generating additional income

The NHS receives its income primarily through government revenues. However there are other income streams (Figure 4.2).



For the most part, the NHS cannot itself readily increase the income it receives through these sources in response to a shortfall in funding. Figure 4.3 summarises where the main flexibilities lie.

10. Department of Health Press Release, 27 April 2006

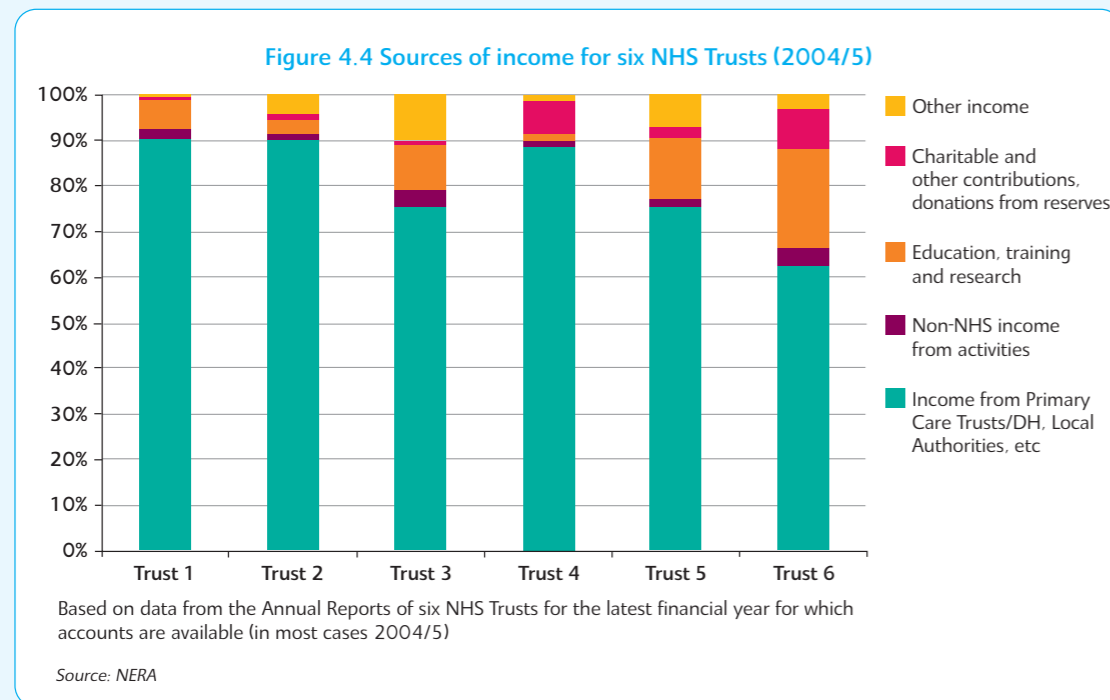
11. Moon C and Bogle R (2006) Switching statins BMJ 2006;332:1344-1345, 10 June 2006

Figure 4.3 The scope to increase income that could provide additional patient activity

Sources of Trust revenue include	Scope for significant funds that are additional
Income from NHS activity Includes revenues from the DH, PCTs and Local Authorities	No
Income from non-NHS sources Includes private patients treated in NHS hospitals, claims via the Road Traffic Act and treatment of overseas visitors	Moderate
Education, teaching and research	No
Transfers and charitable donations	Unlikely
Other income Includes catering, car parking, health care provision to non-NHS bodies, accomodation	Moderate

Source: NERA assessment

The key question is whether there is flexibility in how Trusts earn revenues that could significantly increase the amount of income earned to make up for any future shortfall in public funding levels. As an illustration of whether this is likely, Figure 4.4 presents the sources of income for six NHS Trusts.¹²



Unsurprisingly, it shows that the main source of income for NHS Trusts is revenue flows from Primary Care Trusts and Local Authorities. Income to fund teaching and research is also a large component. The sources of income that Trusts could potentially attempt to increase (income from other activities and 'other' income) are

12. This is not intended to be a statistically robust exercise, but rather an illustration of the relative importance of different sources of income and how the relative contribution of different sources varies. None of the hospitals included are large London teaching hospitals.

currently minor (less than 10% of all income typically) and look unlikely to be a realistic source of sustained additional income. This, of course, could change, if Trusts were to start charging for a wider set of services, but when set against the scale of the funding gap, it seems unlikely that income from non-NHS and other activities could increase sufficiently. Moreover there are already signs of public reactions to the levels of some charges (car parks and bedside phones).

4.4 Reducing the scope of the NHS package

Part of the reason for a growing need for NHS funding is that medical and technological change is increasing the scope of what health systems can treat. Society would agree that it is right that the health system should adopt new technologies and/or provide treatment where no treatment previously existed. However, the practicality of obtaining funding and providing capacity means that health systems cannot cover everything.

If there is a gap between the availability of funding and 'need', the reality is that some services will not be provided. If this is not addressed in an explicit way, the inevitable outcome is that services will be shifted out of NHS coverage in a piecemeal way. Some PCTs may refuse to fund certain services or new interventions; others may follow suit, or there may be geographic discrepancies.

An alternative approach is to be more explicit about what the NHS will fund. This has the advantage of being transparent and creates a much more direct relationship between the amount of funding the NHS needs and what it is committed to provide. It also allows other funding mechanisms to potentially develop, so that individuals can make decisions about how to access services they would like, but that have been deemed to fall outside the core NHS package.

To some extent the NHS is going in this direction already. The National Institute for Health and Clinical Excellence (NICE) makes decisions about what new technologies should be funded by the NHS and what should go unfunded. However, NICE only focuses on a small subset of NHS interventions. Whilst difficult to demonstrate, what is probably happening on a larger scale is that individual referral and prescribing decisions lead to implicit rationing, where local practice responds to local funding pressures in an ad-hoc way.

In its recent report, the Health Select Committee recommended that the NHS should examine the scope to develop an 'entitlement' that would be available free of charge to everyone. This was in the context of charging for services that fall outside the core. They note that *in the future the NHS may not be able to pay for every possible medical treatment in a country with an ageing population, demographic pressures, rising public expectations and increased possibilities of medical treatment for long-term therapies.*¹³

Defining an entitlement has always been a challenge for the NHS. Whilst there are both political and technical difficulties to deciding what services the NHS should fund and what should not be funded, it is a fundamental issue that needs to be addressed. Whilst NICE is moving in this direction, the European context may be a catalyst to this anyway. For instance, the European Commission has recently commenced a consultation on the future direction of EU health policy.¹⁴ It is possible that in addressing patient safety issues (and in particular the issue of 'undue delay') the Commission will implicitly start determining a basket of Europe wide 'core' health services.

Defining a core package of care is not a solution to the funding gap per se. It reduces NHS obligations to fund healthcare, but still does not remove demand overall. However, it does provide a greater degree of transparency over NHS obligations and the need for more funding. This in turn opens up scope for other funding mechanisms to develop, some of which we discuss in the next section.

13. House of Commons Health Committee (2006) NHS Charges. Third Report of Session 2005-06, Vol 1, 6 July 2006

14. Commission of the European Communities (2006) Consultation regarding Community action on health services, 26 September 2006

5 Developing new funding mechanisms

This section of the Report examines some possible funding mechanisms that might be used to bring additional money into the healthcare system. They are intended as a prelude to a debate, with the following in mind:

- tax funding can still remain the main source of NHS funding. The debate is not about reducing the role of NHS funding or NHS entitlements to vulnerable groups
- co-payments and other forms of private funding offer a route for easing some of the funding pressure in the NHS. Structured in the right way, these need not have a detrimental impact on the NHS or the least well-off
- up-front costs are not the only consideration and hence should not be seen de facto as the barrier to change. The debate needs to recognise that there may be efficiency and welfare benefits from moving to a more mixed and responsive funding base
- there are funding mechanisms that could bring additional revenues for the NHS, improving services for all population groups

No funding option emerges from the discussion as a clear 'favourite'. They all have their own strengths and weaknesses and there are trade-offs between them.

Greater use of co-payments has the most scope to bring additional funding into the healthcare system. Mechanisms such as exemptions, premium subsidy, or means-tested publicly funded insurance could be used to address social solidarity concerns. These would reduce the scale of revenues that co-payments could raise but nevertheless the amount of new funding could still be significant.

Supplementary funding offers some benefits. Whilst there would be an up-front cost to the NHS of introducing it, it has the greatest scope to provide a system that allows large numbers of individuals more say over what services they use. Because funding would be supplementary not duplicate, it offers a relatively affordable way for individuals to access other types or levels of care.

It is also possible to consider how different options would work together. For example, greater use of co-payments could be combined with the development of combined supplementary insurance and complementary insurance mechanisms.

5.1 The options

Bringing a larger share of public funding into the NHS or relying on efficiency improvements are not the only ways that greater resources could be made available for healthcare. Additional funding could be brought in through other mechanisms. In this section we examine the strengths and weaknesses of four groups of other options, using the OECDs typology of funding approaches:

- **co-payments and complementary funding mechanisms:** co-payments are widely used in many health systems. Where they are significant, complementary funding mechanisms have developed where individuals can insure against them
- **duplicate funding mechanisms:** this best describes the current situation in the UK, where private funding mechanisms duplicate NHS funding. Individuals that fund care privately, either through insurance or by paying for care at the point of access, pay for the full cost of that care, which in effect is duplicating part of their NHS entitlement¹⁵
- **supplementary mechanisms:** this refers to a situation where new funding mechanisms could be developed to top up NHS entitlements. Such an approach could be insurance-based or developed on a pay-as-you-go basis
- **substitute mechanisms:** in substitute systems, individuals can opt out of the principal (mandated and often public) financing system, often on condition of pre-paying for their health needs through other routes. We discuss a variation on this below

This Report is not intended to deliver firm recommendations for long-term funding. However, we provide a qualitative assessment of the strengths and weaknesses of each group of options, examining:

- their ability to bring new funds into the health system, including whether individuals are willing to pay
- whether options are efficient. Do they provide value for money and result in a dynamic system that promotes innovation?
- the impact on equity. Defining 'what is fair' has numerous conflicting answers. In this context, we treat equity as a discussion of the absolute impact of different options on the least well-off in society
- the impact of options on customer satisfaction, examining whether systems result in a better match between consumer demand and medical services
- the administrative impact of options

15. In the UK, private sector involvement in areas such as primary care is limited, so there is no duplication in these areas. At the margins, there may also be services that are available privately that the NHS would not consider to be part of an NHS entitlement. In the main, duplication occurs for acute hospital care and some elements of non-GP primary care (eg physiotherapy).

5.2 Co-payments and complementary funding

Co-payments are a direct payment made by patients in return for health services received. In general, they have two purposes:

- to raise funds to contribute towards the cost of providing healthcare
- to reduce *moral hazard*. Making patients pay towards the cost of a service implies that the service is no longer free and has a price, thereby reducing incentives to over-consume. If successful, this in turn frees-up resources to spend elsewhere in the healthcare system

However, there are three important caveats to bear in mind when considering the impact of co-payments:

- there is an administrative burden associated with collecting co-payments. When implementing new co-payment systems, it should be ensured that this administrative cost is proportionate to the revenues that are likely to be raised
- whilst co-payments are intended to reduce unnecessary consumption of health services, it is important to ensure that they do not reduce 'necessary' consumption (that could turn into a need that requires more expensive treatment later). Evidence suggests that co-payments can be quite a blunt instrument because it is hard to differentiate between necessary and discretionary use of services *ex ante*.¹⁶
- physicians and other stakeholders will sometimes change their behaviour in response to the introduction of co-payments in ways that may add to costs (eg by writing larger prescriptions so that patients have fewer prescriptions dispensed and hence face lower co-payments)

Despite these caveats, many countries make widespread use of co-payments. Although not used widely in the UK (co-payments exist mainly for dentistry, eye care and, to a small degree, medicines), co-payments are common for many different types of service in other countries. In its review, the Health Select Committee notes that the charges are applied on a small scale, with inconsistent exemptions. They call for a review of the charging regime, which includes an exploration of options to increase charging for services regarded as non-core.¹⁷ Table 5.1 provides examples of where co-payments are used in a selection of other countries.

The extent to which co-payments raise revenues differs significantly from country to country. In France, for example, co-payments for health services are both widespread and large. Despite this, the French health system is not obviously regarded as being less equitable than the UK. In the World Health Organization's rankings of fairness of financial contributions, the UK was ranked 8th -11th out of 191 countries and France was ranked 26th - 29th (along with Spain and Australia).¹⁸ Figure 5.1 gives some examples of how co-payments are used in France.

16. A full discussion on the impact of co-payments is beyond the focus of this Report. Evidence tends to suggest that co-payments reduce the use of health services, with associated cost savings. However, they can impact on the use of both discretionary and essential services, and some studies show that foregoing essential health services can create costs in other parts of the healthcare system. However, adverse impacts are mostly found in low socioeconomic groups, implying that the challenge is to develop targeted support for these groups whilst allowing the health system to benefit from co-payments applied to other groups, where impacts on health are minimal.

17. House of Commons Health Committee (2006) NHS Charges. Third Report of Session 2005-06, Vol 1, 6 July 2006

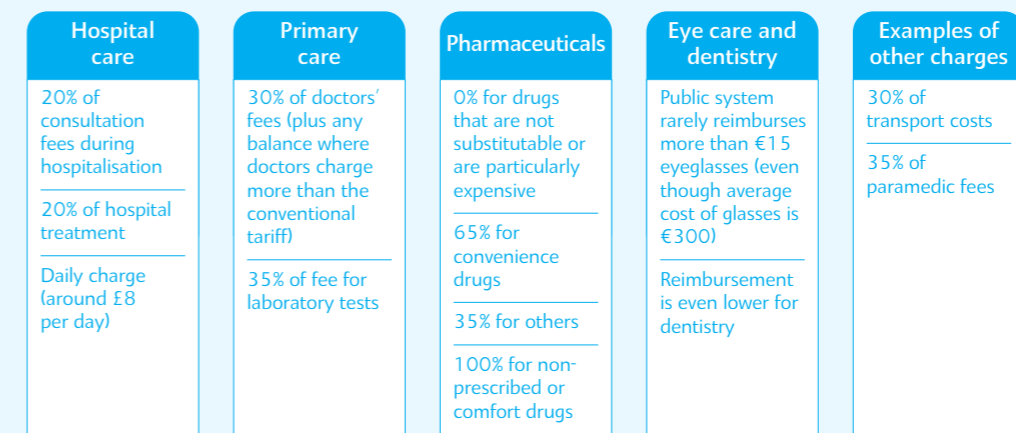
18. WHO (2000) The World Health Report 2000. Health Systems: Improving Performance

Table 5.1 The use of co-payments in other countries (circa 2005)

	Co-pays	Medicines Exemptions	Reference pricing	Charge for medical devices	Charge for doctor visits	Charge for out-patient care	Charge for physiotherapy	Charge for dental care
Denmark	•	•	•		•		•	•
Germany	•	•	•		•	•		
Italy	•	•	•		•			•
Netherlands								•
Slovak Republic	•			•	•			
Slovenia	•			•				
Sweden	•	•			•	•		
Switzerland	•	•		•	•	•	•	•
UK	•	•		•				•

Source: NERA

Figure 5.1 Examples of co-payments in France

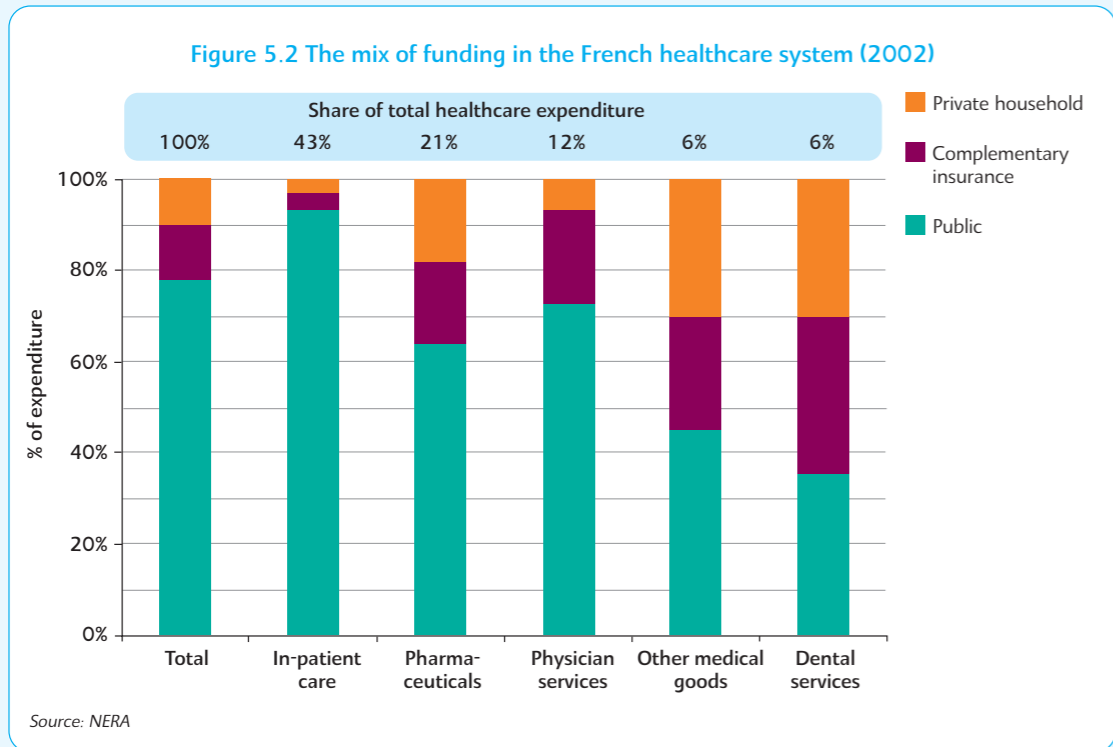


Source: OECD, CIVITAS

In France it is common for individuals to insure themselves against the cost of co-payments. This has the effect of reducing the impact of co-payments as a tool for addressing *moral hazard*, but it does reinforce the role of co-payments as a mechanism for drawing additional money into the healthcare system. The consequence is that the French system draws in significant funding through three distinct routes: the mandatory system centred on social insurance premiums; complementary insurance mechanisms (to cover the cost of co-payments); and direct payments from patients (for those without complementary insurance and for other charges/services not covered by complementary insurance).

To protect social solidarity, the French system also has a series of exemptions from co-payments (for specific services and specific categories of individual) and there is a public subsidised means-tested complementary insurance scheme for which around 10% of the population is eligible.

The consequence of this is that the funding base for the French health system is mixed (see Figure 5.2), and is more reliant on private funding than many other comparators. Yet despite its obvious differences to the UK, the system is regarded as 'fair'.



The scale of revenues that could be raised from co-payments is a function of a number of factors. It depends on:

- the number of units of an activity that co-payments are applied to (eg the number of prescriptions that attract a charge)
- the level of the co-payment and whether certain activities can justify higher co-payments than others (eg could charges for an in-patient stay be higher than a charge for a physician visit?)
- the likely impact of the co-payment on activity levels (eg will visits to GPs fall if a charge is applied?), and whether there is a knock-on cost increases if certain 'essential' services are foregone as a result of a charge
- the scale of exemptions required to satisfy social solidarity requirements (eg in the UK the vast majority of prescriptions do not incur a charge)
- the administrative burden of co-payment collection

Table 5.2 provides some metrics on the potential scope for charges to be applied to different activities in the healthcare sector. It shows the number of units of activity for different categories of service in the English NHS, and provides examples of how charges operate in other countries. It is intended as an illustration of the potential scale and scope of charges, and not as a recommendation.

Table 5.2 The potential scale and scope of co-payments

Service	Units of activity (England, 2004)	Examples of charges
Prescriptions	686 million	Germany: 10% of cost of prescription (minimum £3, maximum £7) Sweden: patients pay proportion of cost up to a ceiling (eg 100% up to the first £66 in a year)
GP visits	265 million	Germany: £7 per quarter (no charge if out-patient visit is via a GP referral)
First out-patient visits	13.5 million	Italy: £25 per visit Sweden: £15 per visit
Elective in-patient stays	6.5 million	Germany: £7 per night (maximum £190 per year) Sweden: £6 per day

Note: the co-payments shown are converted from local currency and rounded. Charges for GP visits and out-patient appointments have been shown together, as the distinction between the two is not always clear, depending on the country being studied.

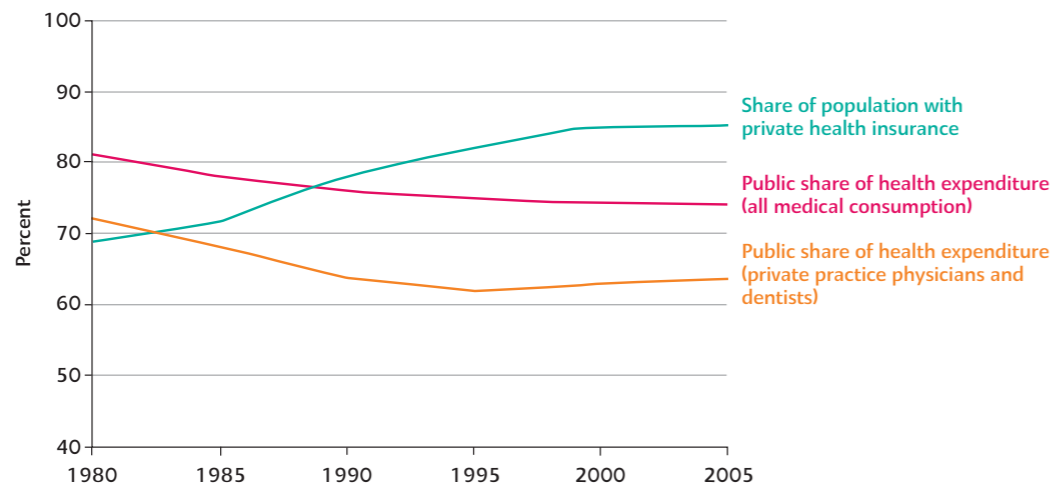
Source: NERA

In some countries patients are expected to meet the cost of their healthcare up to a fixed amount per year. In Switzerland, for example, there is a fixed annual fee (referred to as a deductible) of around £130, and patients pay a co-payment for GP visits, out-patient visits and in-patient stays, up to a maximum annual amount of about £310 per year (less for children).

International experience suggests that there is considerable scope to raise revenues through co-payments, and that such an approach in the NHS would not be unusual compared to other countries. A £10 charge applied to the 265 million GP visits in England per year would raise significant revenues, even after allowing for deterrence effects (a drop in 'unnecessary' visits) and for exemptions to protect vulnerable groups. The same holds true for prescription charges. The scope to raise revenues by charging for in-patient stays is less, simply because there are far fewer in-patient admissions than there are GP visits, so the charge would need to be higher to bring in a meaningful revenue stream. That could perhaps be justified on the grounds that hospital admissions are resource intensive, but a high charge would likely be unpopular.

If co-payments were introduced on a wide scale, it is possible that complementary insurance markets would emerge to allow individuals to mitigate the risk of fluctuations in the amount they actually have to pay year on year. In France, such a market has shown strong growth. Figure 5.3 suggests that the vast majority of the population have some form of complementary insurance. It also suggests that the share of total health expenditure accounted for by mandatory/public funding has fallen over time (the opposite of what is currently happening in the UK).

Figure 5.3 Trends in the division of health spending and private health insurance coverage (France, 1985 - 2002)



Source: OECD

If a complementary insurance market was to develop in the UK to cover co-payment expenditures, this in turn would provide an additional route for managing social solidarity issues associated with co-payments. The most common way to manage this has been to allow exemptions from co-payments. These can be broad brush however - in the UK for example, the elderly are exempt from prescription charges, which in turn makes a large portion of prescriptions free of charge even though recipients are often relatively wealthy. An alternative under complementary insurance is to target subsidies at particular income groups. Means testing could also be used to determine whether individuals should be exempt from co-payments or have access to a publicly subsidised complementary insurance scheme, as in France.

Table 5.3 assesses the use of co-payments and complementary funding mechanisms against our criteria.

Table 5.3 Assessment of co-payments and complementary funding mechanisms

Criteria	Assessment
Bring in additional funds	This option offers significant scope to bring additional funds into the health system
Efficiency	Co-payments would improve efficiency if they reduce moral hazard. Complementary insurance may, however, mitigate some of this. Take-up of new innovations may be slower if individuals have to pay a contribution towards care, but if the system overall has greater resources the opposite could be true
Equity	Has the potential to negatively impact on the least well-off in society. Exemptions and subsidies could be applied to mitigate this, although they would need to be carefully targeted otherwise the scope to raise revenues through co-payments would fall
Customer satisfaction	Will get a negative reaction from patients. However, longer-term this may change if the system becomes better-resourced
Administrative impact	The administrative burden depends on the details of collection mechanisms and how exemptions are applied. With innovative use of IT, revenue collection and application of exemptions could be streamlined

5.3 Duplicate funding mechanisms

5.3.1 Overview

The UK currently operates a duplicate funding system. Individuals pay their taxes and in return UK residents are entitled to largely free access to the NHS. If individuals decide to access care privately through private medical insurance [PMI] or by paying for care direct, for example because they believe it will give them faster access or improve quality, they can pay privately either directly or through insurance. This is referred to as duplicate funding because private funding duplicates elements of an individual's NHS entitlement. People paying privately get no rebate from the NHS for transferring elements of their healthcare to private funding, so in effect they have two overlapping entitlements (public and private) and will use the private entitlement when they so choose.

The consequence of this is that the take-up of PMI and of self-pay (where individuals pay the full cost of private care themselves) is low in the UK. Accessing private care is expensive because individuals bear the full cost, even though they are also paying through taxes for an NHS entitlement that they use less.

From the NHS perspective, this approach has funding advantages. Those using private funding in effect leave their tax funding in the NHS, but transfer parts of their risk out of the NHS and into the private sector. This appears to be a 'win' for the NHS, but the downside is that the extent to which it could grow is limited. PMI and self-pay is relatively expensive because it operates in duplicate mode, and so the market does not grow quickly. In large part, the market is driven by employers purchasing PMI as a benefit for their employees or by the self-employed paying directly for care to get back to work quickly. Even people who insure personally often do so because they previously enjoyed employer-paid insurance.

In some countries, incentives are used to encourage individuals to take out PMI in duplicate systems. For instance, fiscal incentives are sometimes used, with individuals being allowed to offset the cost of PMI against income for tax purposes.

In the UK, PMI is taxed through several routes. Premiums attract Insurance Premium Tax (5%). In the case of employer-funded PMI, employers pay National Insurance Contributions on the value of the premium (12.2%) and recipients pay income tax on the value of the employee benefit in-kind. Two straightforward types of fiscal incentives to encourage take-up of private funding could be:

- to remove the requirement for employers to pay National Insurance on PMI premiums for company-paid PMI. This would be administratively easy to do and mean that PMI is treated for tax purposes in the same way as some other occupational health interventions. For the employer it would amount to a 12% reduction in premiums, which in turn should lead to an increase in the take-up of PMI (although the literature on elasticities of demand in this context is weak, so the precise response is hard to predict). Conditions could be attached to this, such as requiring employers to offer PMI to all their employees before becoming eligible for relief.¹⁹
- to remove the need for individuals to pay income tax on the value of the PMI employee benefit in-kind. This would cut the cost of employer-paid PMI to the employee (the value would depend on an individual's tax position). However, the extent to which this would increase uptake depends on the reasons why individuals currently do not enrol in company PMI schemes (is it a financial reason, or are there other reasons?). Whilst it might provide some impetus to the existing market, it has the disadvantage of being less likely to bring new employers into the market (because on its own, this type of tax relief does not change employers' expenses).

¹⁹ Although this creates a knock-on distortion where the employers most likely to do this are those that currently offer PMI to many of their employees.

A consequence of having fully duplicate private funding is that it is difficult to move away from the status quo. Any fiscal incentives to encourage take-up of private medical insurance impose a cost on the Exchequer. There is a cost, in terms of tax revenue foregone, from providing tax relief to companies/people who already have company-paid PMI. The same holds true if tax incentives are given to people who self-pay to buy private healthcare. This effect is commonly referred to as the 'deadweight loss'.

Table 5.4 calculates this cost in a scenario where employers are given relief on employer National Insurance Contributions for company-paid PMI. The deadweight loss is £195 million.

Table 5.4 Deadweight loss of NIC relief on corporate PMI (2004 figures)

Number of company-paid subscribers	2.52 million
Average subscription fee	£634
Assumed employer NIC	12.2%
Deadweight loss	£195 million

Source: Laing's healthcare market review 2005/06, Frontier Economics Ltd

However, the relevant metric is not the size of the up-front cost. From a fiscal angle, what matters is whether any increase in take-up brings in sufficient revenue to a) meet the up-front cost (ie offset the deadweight loss) and b) generate additional revenues thereafter that ease funding pressure within the NHS. Higher take-up implies more people are shifting elements of their 'need' out of NHS funding and into private funding, with consequent reduction in demands on the NHS. Longer-term, consideration should also be given to the benefits from having a more mixed-funding base for healthcare, so that the system is less reliant just on tax revenues for funding and hence less susceptible to the cycle of public spending pressure.

5.3.2 Assessment against criteria

Table 5.5 provides a summary assessment of the pros and cons of using fiscal incentives as a measure for encouraging the further development of duplicate funding measures, whether through PMI or through direct self-pay routes.

Table 5.5 Assessment of incentivising duplicate funding mechanisms

Criteria	Assessment
Bring in additional funds	This option has the potential to bring additional funds into the health system. The exact scope depends a) on the size of the up-front cost of providing tax relief to those who already pay for private care, and b) on the take-up of duplicate funding. Higher take-up implies that greater demand is transferred from NHS funding to duplicate private funding, thereby increasing resources left for those that rely solely on public funding
Efficiency	Scope to increase dynamic efficiency, as private insurers and providers try to attract customers by offering innovative products that build on existing portfolios. Scope to impact on the provider side (both public and private) as private funders define new methods of service delivery and new contracts with providers
Equity	Would allow a larger number of people to access healthcare through private funding. This does not disadvantage the least well-off in society in absolute terms. Indeed, if it leaves resources in the NHS (as demand is transferred to private funding mechanisms), the level of healthcare provided to the most disadvantaged could actually improve
Customer satisfaction	Should lead to greater customer satisfaction because it provides an opportunity for closer matching between what individuals want and what they receive (at a more affordable level) through the health system. The extent to which this happens will depend on the level of take-up
Administrative impact	Tax relief on corporate PMI is straightforward to implement. Fiscal relief for other forms of private funding would be more complex to administer

5.4 Supplementary funding

Under a system of supplementary funding, individuals pay their taxes as is currently the case, which generates revenues that flow into NHS funds. Individuals then have a choice over how to receive benefits. One option is to do nothing, and receive services as at present. This could include care from NHS or private providers. An alternative is to pay an additional fee to top-up on services that would ordinarily be received through NHS funding. This fee could be an insurance mechanism, or in principle it could be paid on a pay-as-you-go basis. Individuals could pay to access additional interventions (eg such as those that have received negative cost-effectiveness rulings from NICE), to improve various aspects of perceived quality (eg if they wanted a particular type of artificial joint fitted), or to be treated in a private sector 'hotel' environment.

Under this approach, individuals would be able to combine their NHS entitlement with any top-ups that they wished to add. Defining 'entitlement' in an explicit way would be controversial²⁰, but the mechanics of deciding the value of elements of the entitlement would be relatively straightforward. Systems such as *Payment by Results* mean that there is an 'NHS price' for many interventions.

It would be for individuals to decide where they wanted to receive care, in much the same way as is envisaged under Patient Choice at the moment. GPs would make referral decisions and thereafter patients would make their choices over when and where to be treated. The key difference between this and duplicate funding is that under supplementary funding individuals can merge their NHS entitlement (paid for through their tax

²⁰ See Section 4.4 for a discussion on this, including the Health Select Committee's recent observations that the NHS should explore the scope to define an entitlement as part of the solution to increasing demand pressures.

contributions) with their top-up funding (paid through insurance or at the point of access). Their tax contributions 'count' towards the cost of their healthcare when they top-up.

There is a cost to the health system in moving to such an approach. Supplementary insurance would radically change the PMI market. It is likely that the current PMI market would contract and would be replaced by new products that covered topping up. The effect of this is that individuals that currently have PMI would be shifting their 'need' away from their full PMI policy and back into NHS funding. That 'need' would then be met by NHS funding, and individuals would top-up to receive care that is equivalent to what they currently receive through existing PMI policies. Hence, NHS funding would not drop, but funds would have to go further to cover the 'need' being transferred back into NHS funding. For individuals with personal or corporate PMI, we estimate the cost of the need that shifts back to the NHS to be £4-5 billion per annum (in current prices).²¹

However, this approach could also bring additional funding into the healthcare system. If for example, individuals could only combine 75% of their NHS entitlement with top-up funding, in effect they would be leaving 25% of their entitlement in NHS funding. The net impact of this option on NHS funding levels then depends on rates of take-up of top-up funding and whether the value of entitlements that are left in NHS funding offset the up-front cost of individuals trading down their current PMI policies. Our preliminary estimates suggest that if take-up were around 25%, these up-front costs would be offset.

It is important to stress that this Model is about funding. It does not necessarily alter patterns of the supply of health services. GPs would still be responsible for referral decisions. Patients can choose where to be treated, be it in NHS Trusts, Foundation Trusts or private hospitals. The difference is patients can alter the precise mix of services they can receive.

The success of this approach depends crucially on rates of take-up. International evidence suggests this would be high - for instance in the Netherlands the majority of the population take up such packages. Success would obviously depend on the cost of top-up funding (which we expect to be significantly less than current PMI costs) and the precise nature of top-up services that would be offered. This in turn depends on what the NHS regards as part of the NHS entitlement and how innovative providers and insurers are in offering additional services.

As well as introducing a new stream of funding, supplementary funding would provide a route for interventions to be partly funded by the NHS and partly funded direct by individuals. Precisely how this would be defined is beyond the scope of this assessment, but it offers some flexibility to help deal with future funding pressures. For instance, if the introduction of new technology in the future is believed to be cost increasing, the burden could be shared between NHS funding and private funding. Services/interventions regarded as necessary could still be fully funded through the NHS, whilst those at the margins could be financed through supplementary funding, or full pay. It would not, therefore, reduce access to services for the least well-off in society, but it would provide a more affordable route to accessing top-up services that are currently only open to those able to afford PMI or self-pay to cover the full cost of private care.

Table 5.6 summarises the strengths and weaknesses of supplementary funding mechanisms against our criteria.

Table 5.6 Assessment of incentivising duplicate funding mechanisms

Criteria	Assessment
Bring in additional funds	This option has the potential to bring additional funds into the health system, although the up-front cost would be higher than with tax relief for duplicate funding. If take-up rates were high and individuals could only integrate a portion of their NHS entitlement with top-up funding, there would be a net flow of funds into the NHS
Efficiency	Likely to improve efficiency in the system overall. Provides a more flexible approach to funding, which has the scope to make the system more responsive to the adoption of technical advances and to changes in consumer expectations
Equity	Would make it more affordable for individuals to access levels of care offered through existing private funding. Those who choose not to top-up need not be worse off, although this is dependent on the funding that is brought into the system offsetting the up-front cost of introducing supplementary funding
Customer satisfaction	A principal advantage is that this option offers scope for better matching between what patients want, what they can afford and what they receive. It would be financially accessible to a large portion of the population
Administrative impact	Relatively straightforward to administer, given that there is better knowledge of NHS costs (eg under Payment by Results) and billing/financial flows are becoming more streamlined and automated

5.5 Substitute funding mechanisms

Substitute funding describes a system where individuals are able to opt out of the NHS system and fund their health needs through other routes, but are no longer required to contribute to the public system. In countries that operate substitute systems, this can be in the form of an opportunity to opt out, or a mandatory requirement to opt out. In practice, few countries now have mandatory opt-outs, but a number do allow those on high incomes to cover their healthcare costs outside the publicly funded system. Subscription to an alternative health insurance product is often a pre-requisite for opting out of otherwise mandated schemes.

Moving to such a system in the UK would incur an up-front cost - individuals that do not participate in the publicly funded system would not contribute towards it any more. Substitutional systems tend to operate in healthcare systems funded by social insurance premiums because an individual's contribution to the cost of their healthcare system is explicit and can be easily removed from the system (you don't collect the social insurance premium any more).

A variant of substitute funding that could be applied in the context of a tax-funded system is to require individuals earning above a certain income level to fund their healthcare through other routes and to no longer be given access to the public system. They would still be required to pay tax contributions towards the public system however.

This would be an extreme approach. It has the theoretical benefit of bringing additional funding into the healthcare system because, in effect, it mandates that a defined income group has to pay additional contributions. It is akin to mandating that certain individuals must have duplicate PMI within the current NHS funding model (except that in this option it would no longer be duplicating the NHS entitlement because this group would lose their NHS entitlement).

There is, however, some doubt over how much additional funding this option could really bring into the healthcare system. To be palatable, the number of people who are forced to opt-out of the system would have to be relatively small. If it were based on income thresholds, this group would be wealthy, they are likely to be relatively healthy and are proportionately more likely to already have PMI (or pay for care privately when required). On this basis:

- the direct additional revenue brought in would be small because the number of individuals affected would have to be small
- the 'need' that they take out of the NHS would be relatively low because they are likely to be relatively healthy and hence not imposing a huge expenditure burden on the NHS currently
- many of them will already have taken a large portion of their acute elective needs out of the NHS, meaning that fewer resources will be 'freed up' to treat other patients

This option gets more complex when decisions are made about exactly what services individuals would be denied access to. The most favourable from an NHS perspective would be to remove these individuals from all NHS services, but the practical and social solidarity issues of removing entitlement to, say, emergency services are complex. It would also imply a significant change in primary care infrastructure, presumably with the emergence of private GPs to treat patients excluded from seeing NHS GPs.

Table 5.7 summarises our assessment of moving towards this extreme variant of substitute funding.

Table 5.7 Assessment of substitute funding with mandatory opt-outs

Criteria	Assessment
Bring in additional funds	This option offers some scope to bring additional funds into the health system, but the amount is not as high as might be thought. The number of individuals affected would, most likely, be small, and many of them will already be placing little burden on the NHS
Efficiency	The impact of this option on efficiency is unclear. On the one hand, those who are required to opt out of the NHS may be accessing services they perceive to be more efficient and more responsive. However the parallel infrastructure required to run such a system might reduce overall system efficiency
Equity	This option could have a potentially significant impact on the least well-off in society, provided the overall level of NHS financing were not reduced in response to individuals being required to opt-out. Many of those forced to opt-out will regard this approach as unfair
Customer satisfaction	Those opting out are likely to be dissatisfied with the funding approach (although they may be more satisfied with the services that they receive)
Administrative impact	This option would be relatively complex to administer. It would imply individuals having to demonstrate their entitlement to NHS services (which may not be complex with new IT infrastructure, etc). If individuals retained entitlement to some services (eg emergency care) this could add to the administrative impact, for example where the lines between elective and emergency care get blurred

5.6 Summary

It is little surprise that no funding option emerges as a clear 'favourite' from this assessment. They all have their own strengths and weaknesses and naturally there are trade-offs between them. In addition to the criteria outlined above, it is also important to distinguish between short and long run impacts and to consider how healthcare funding should evolve in the long term. It is an artefact of the status quo in the UK that any shift away from PMI running in duplicate mode will involve some up-front cost. This is simply because of where the system is starting from - with a private funding market that duplicates parts of what the NHS does. In other countries, the role of private funding can evolve much more freely because the starting points are different and there will not be these costs.

A key issue is whether the short-run costs are offset by longer-term benefits. These benefits come in a number of forms and include the benefits of having a funding base that is less reliant on one source of funding. Having funding approaches that are more responsive to what individuals want will improve efficiency in the system overall. A mixed funding base also allows greater scope for the NHS to decide what it will and will not fund, whilst still allowing patients to access services that are not regarded as core.

Greater use of co-payments has the most scope to bring additional funding into the healthcare system. This is not surprising given a) how little use the UK makes of co-payments and b) the number of high volume (and hence potentially high revenue) activities the NHS provides. Social solidarity will be raised as an argument against the use of charging. If co-payments were implemented on a significant scale, it is possible that complementary insurance would develop as a mechanism to allow individuals to remove uncertainty around their level of co-payments. Mechanisms such as exemptions, premium subsidy, or means-tested publicly funded insurance could be used to address social solidarity concerns. These would reduce the scale of revenues that co-payments could raise but nevertheless the amount of new funding could still be significant.

In many ways, supplementary funding has benefits. Whilst there would be an up-front cost to the NHS of introducing it, longer-term it has more attractions. It has the greatest scope to provide a system that allows large numbers of individuals more say over what services they want to access. Because funding would run in supplementary mode and not duplicate mode, it offers a relatively affordable way for individuals to access other types or levels of care. It also provides a route for future technologies to be funded, where the burden on the NHS could be significant but where supplementary funding could be used as a way of combining an NHS contribution with a private individual contribution (eg for services that are not regarded as 'core').

It is also possible to consider how different options would work together. For example, greater use of co-payments could be combined with the development of supplementary insurance and complementary insurance mechanisms. Such hybrids could be constructed to mitigate the up-front cost of moving towards a new system, whilst providing a base for evolving the funding base longer term.

6 Conclusions

The issue

Estimating the future funding needs of the NHS with any degree of precision is complex. However, there is some consistency in different pieces of information that suggest that the need for healthcare funding in the future is likely to rise at a rate greater than 4.5% per annum in real terms. For example:

- Wanless estimated that health funding post 2008 would need to rise at between 4.4% and 5.6% per annum until 2013. These estimates were made on the basis that by 2008 the NHS will have made significant progress with improving health service productivity, managing disease in new ways and engaging with patients. There is no strong evidence of this happening on a widespread scale, implying that if anything the Wanless numbers are now underestimates
- the Model projects that the need for healthcare funding, on its base assumptions, will grow at 4.9% per annum post 2008. It is possible to construct scenarios that would bring this growth down, for instance if there were large increases in the use of day surgery and the rise in emergency admissions were reversed. But achieving this looks to be difficult and they do not fully close the gap
- the long run average growth in NHS funding (between 1973 and 2004) has been 4.2% per annum in real terms. Over this period, there is a general acceptance that the service has been under-funded - and much of the recent injection of money has been to correct historic under-investment

Evidence suggests that public spending post 2008 is going to be significantly constrained relative to recent years. In short, the Chancellor is in a tight spot on public spending and growth in overall spending will be limited to 2% in 2008/9 and 1.9% per annum for the two years thereafter. As described elsewhere in this Report, once that 2% is split between different government spending programmes, it is difficult to find a scenario that would allocate the NHS greater than 3.5% per annum real terms growth in resources after 2008.

On this basis, there is a gap between what the NHS 'needs' and what it is likely to receive. If the NHS were to muddle through on insufficient money, the consequences are pretty clear: capacity (infrastructure and staff) would need to be cut back, wages would need to be restrained, and the investment programme would be slowed. Waiting lists would rise (unless new ways of reducing demand could be found) and much of the progress made in recent years on waiting lists and in staff and infrastructure investment, would be undone. This needs to be avoided.

Solutions

The easiest solutions to a funding gap from a political perspective are the ones that the NHS can drive through without significant upheaval. An obvious one is productivity improvement: ensuring that the gap is closed by using existing NHS resources more efficiently. This presents two practical problems. The first is that it is notoriously difficult to deliver NHS productivity improvement in a way that addresses a funding gap which relies on treating more demand, rather than improving quality - although both are important from a system perspective. The NHS has not demonstrated large productivity gains historically. Second, productivity growth

would need to occur on an unprecedented scale to address funding shortfalls. Both the Model and the Wanless estimates already assume productivity improvements, so any productivity change would need to be over and above this. We do not believe it is realistic to assume productivity will provide a solution to funding issues.

Alternative solutions are to examine how extra funding could be brought into the health system. Raising additional public funding is not a viable option. There is little scope to reallocate from other public spending programmes, the Chancellor could not borrow without breaking his rules, and large tax rises seem unlikely.

The NHS could raise additional income from greater use of co-payments. Small charges applied to high volume services would raise significant income. These are widely used in other healthcare systems, many of which share the same ideals as the NHS and where their use is not regarded as 'unfair'. Whilst exemptions and/or subsidies would reduce the revenue benefits of co-payments, they still offer scope to be a meaningful source of revenue. What is difficult about co-payments is the degree of change: moving away from a system where the public is used to making no direct payment for the majority of their healthcare. The UK is an outlier in this respect. In line with the Health Select Committee's recent recommendations, we believe it is important to explore the potential role of co-payments in the NHS more carefully.

In addition to direct payments for service, there is a range of other options that could be used to encourage individuals to contribute more towards the cost of their healthcare. Complementary insurance is one way of relieving some of the individual's burden of co-payments.

More broadly, one reason why the take-up of private healthcare funding in the UK is currently low is its high cost. In part, this is because it runs in duplicate mode to the NHS. In many other health systems, private funding does not run in full duplicate mode. The incremental cost of private funding is therefore lower in those countries and take-up is higher.

Long term, it is possible to imagine a scenario where individuals complement the care they receive through the NHS by purchasing additional supplemental treatments and services themselves (either directly or through insurance). These may be treatments that the NHS has deemed not appropriate for public funding but in which individuals see a value. Many interventions rejected by NICE on cost grounds would fall into this category. Or it could be that individuals prefer to receive healthcare in different settings. If the gap between what the public want and what the NHS can afford is growing, the scope for funding options that bridge the gap will also grow. It is likely that expanding technology and rising expectations will fuel this.

Funding arrangements in which voluntary private payments supplement or complement tax funding are accepted in other countries. A barrier in the UK is the system's starting point. Because we have a system in which public and private health funding are duplicate, there is inevitably an up-front cost in changing. However, there may be benefits in a mixed funding system, such that these up-front costs are not the only relevant factor. Longer-term, there may be benefits from having a funding base that is not wholly reliant on public funding (which in turn can be constrained) and that is better able to respond to changes in what patients/citizens want.

Recommendations

The purpose of this Report is not to recommend one solution to funding problems in the NHS. Indeed, it is likely that there is no one funding option and the answer will probably lie in combining different options. Any solution needs to strike a balance between bringing additional funding into the system, being attractive to the population, and bringing longer-term balance to the funding mix.

The objective of this Report is to start debate. We believe that there will be a significant future funding gap in the NHS and if this is not addressed in a sustainable way it will have a universal detrimental impact on the NHS. We believe that in dialogue with the public and other NHS stakeholders a cross-party consensus needs to be reached on long-term solutions. In reaching such a consensus, it is inevitable that there will be resistance to changing in the status quo. However, we believe that in any debate, we should consider that:

- tax funding can still remain the main source of NHS funding. The debate is not about reducing the role of NHS funding and NHS entitlements to vulnerable groups
- co-payments and other forms of private funding can ease some of the funding pressure in the NHS. Structured in the right way, these need not have a detrimental impact on the NHS or the least well-off
- up-front costs are not the only consideration and hence should not be seen de facto as a barrier to change. The debate needs to recognise that there may be efficiency and welfare benefits from moving to a more mixed and responsive funding base
- there are funding mechanisms that could bring additional revenues to the NHS and improve services for all population groups

This is not a debate about whether a two-tier health system should be created in the UK. The reality is that there is already a two-tier system. If there is a real funding gap in the NHS post 2008, the implication is that the two tiers will diverge as the NHS finds itself unable to keep pace. Sensible debate about funding solutions provides an opportunity to consider how this can be addressed and how NHS care can be maintained and improved.

Appendix A

The main features of the Model

A.1 Purpose of the Model

The Model is a tool that tries to simulate the workings of the primary and hospital sectors in the English healthcare system. In practice, fully reflecting the realities of the health system in a model is unrealistic - it is not possible to account fully for the many behavioural changes and responses, changes in policy and priorities and so forth. Hence, the Model is a simplification of the health system that maps the main relationships and flows. Nevertheless, it is a complex model that draws on a wide variety of data.

The aim has been to develop a flexible model that can examine the impact of changing a wide variety of assumptions about resource inputs, funding and structure. The trade-off with this flexibility is that it inevitably makes the Model complex, relying on a large number of assumptions. In practice, users of the Model won't vary all of these assumptions, focusing rather on a core set of key assumptions. Nevertheless, the functionality is there to vary any assumption.

Examples of the key purposes of the Model include examining:

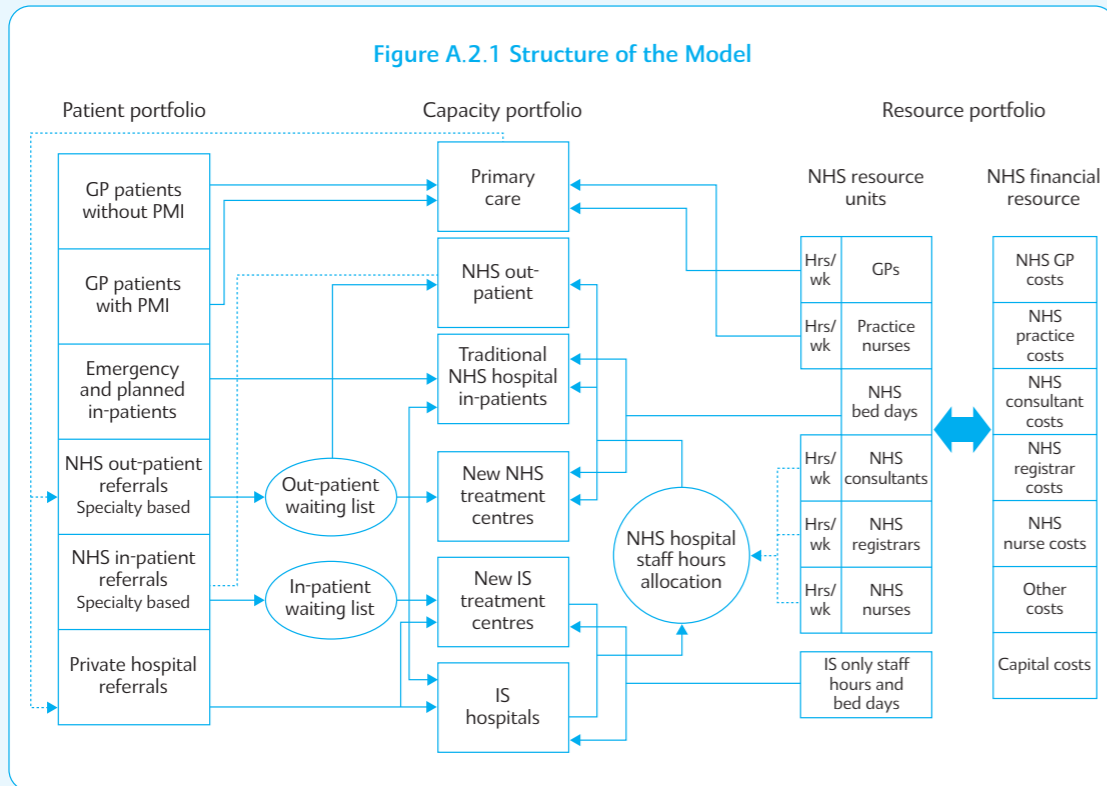
- future levels of expenditure in the health service
- future levels of activity and resource use (doctors, nurses, etc)
- the future need for healthcare
- changes in politically and socially sensitive effects such as NHS waiting lists and waiting times
- changes in financing structures and the roles of the public and private sectors (in both funding and delivery), etc

A.2 Structure of the Model

In order to manipulate the Model and its spreadsheets it is important to understand how it is structured and how resources and patients flow through the system.

At its core, the Model estimates demand and capacity, and how patients flow through the healthcare system over a 10-year period. This core model is complemented by a series of side modules that help estimate other interesting aspects of the health system such as the cost of the given resources and activity or how likely it is that inputs would grow at the current rate.

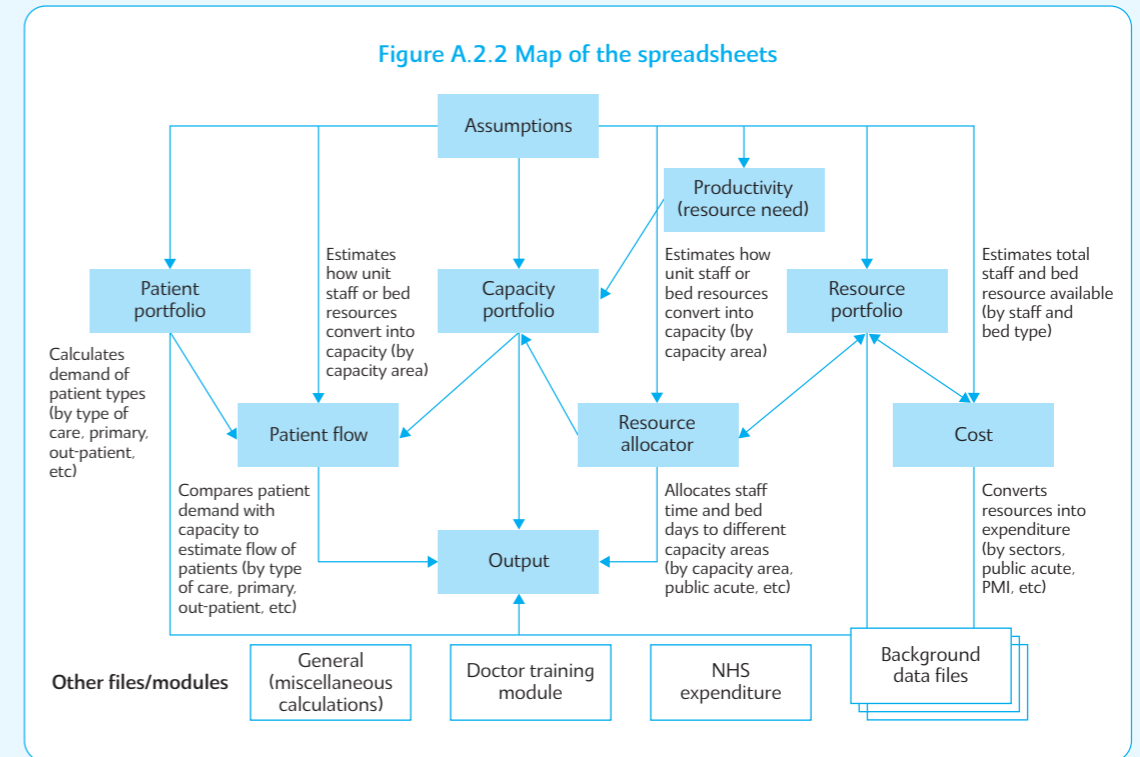
Figure A.2.1 illustrates the basic structure of the core elements of the Model.



The Model can be divided into five main sections:

- a Patient Portfolio that calculates the demand for healthcare: this includes care by different treatment areas (primary, out-patient, in-patient, etc) as well as by place of treatment (NHS, TCs, independent hospitals, etc)
- a Resource Portfolio that estimates current resources available: this includes different staff (consultants, GPs, nurses, etc) and bed types
- a Capacity Portfolio that estimates the amount of care that can be delivered for given resources: this includes all the different places of treatments in the NHS and the independent sector
- modules that help link the three portfolios - for example, a module to allocate resources to different treatment areas (termed as 'Resource Allocation') and matching capacity and demand to determine the equilibrium level of care
- external modules (not displayed in Figure A.2.1) that are not intrinsic to estimating the flow of patients in the healthcare system, such as an expenditure module that projects public healthcare expenditure and a doctor training module that estimates the future growth of doctors qualified to be consultants

Figure A.2.2 opposite shows how these modules are interlinked.



A.3 The main assumptions

In this section, we list in Box A.3.1 the main assumptions that are used to run the Model 'base case', or central projection. Briefly they are:

- staff numbers grow broadly in line with recent trends (although growth in nurse numbers is slightly lower, as recent growth has been above long-run trends)
- wage growth post 2008 is close to national average earnings growth per head (typically around 2% real terms growth per annum)
- staff productivity growth is 1% higher than recent trends
- demand for healthcare (proxied in the Model by referral rates) is in line with recent trends

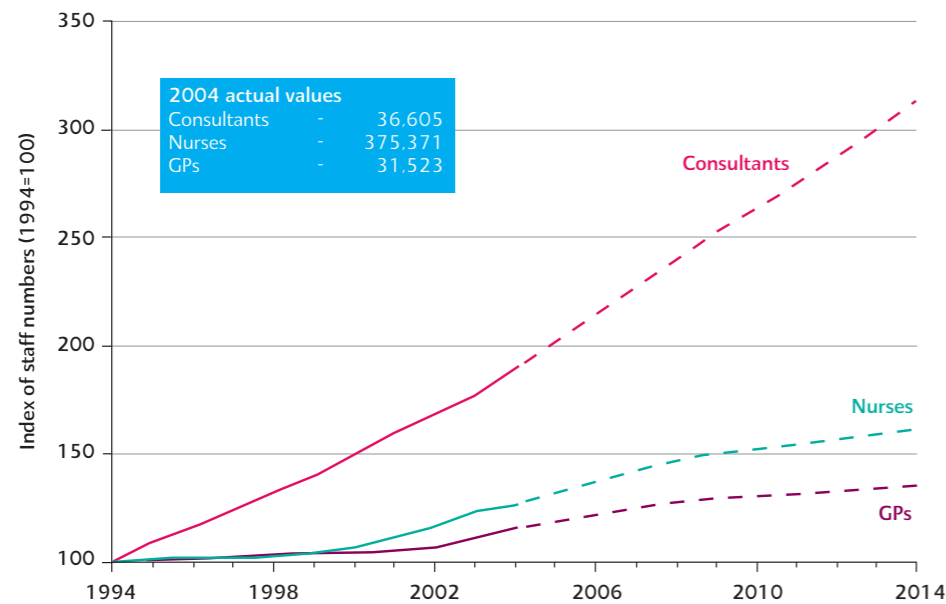
Other more detailed assumptions are shown below (Figures A.3.2 to A.3.5) in screen shots from the 'base case' run of the Model. Each figure shows a screen-shot containing a set of assumptions (eg related to staff numbers), the values for 2004, the assumed growth rates (the Model is split into two time periods: 2004 - 8 and 2009 - 14), and the implied values in 2008 and 2014. The Model has over 150 assumptions that can be varied, but which in practice are unlikely to change on a regular basis (eg such as population projections). These second-order assumptions are not listed below.

Box A.3.1 The main assumptions in the Model

Staff numbers

Figure A.3.1 shows the projections that the Model assumes for growth in staff numbers. Overall NHS Plan targets have been met (and exceeded in some cases) and growth in numbers is ahead of what Wanless assumed in his projections when assessing funding need.

Figure A.3.1 Assumed growth in staff numbers (Indexed, 1994=100)



Notes: Data used is based on headcount. 1994 - 2004 is actual data (www.ic.nhs.uk/pubs/nhsstaff). Data for 2005 onwards are the projections assumed in the Model

Productivity

We have assumed that staff productivity grows faster in the future than recent trends. Our estimate of past productivity change is that, after allowing for complexity and the cost of technological change, staff productivity growth has been close to zero in recent years. (Section 4.2 provides more background on measures of productivity and changes in recent years.) We assume that it will be positive in the years 2008 - 2015, at 1% a year, on the assumption that initiatives such as *Payment by Results* and *Agenda for Change* deliver significant productivity improvements.

The Model uses simple measures of productivity - units of activity per input or per unit of cost. Changes in the quality of care are an important dimension of NHS output. However, the Model is primarily concerned with estimating the numbers of patients treated; for that purpose quality is less critical as an influence, unless there is a case for believing that the NHS is making improvements in treatment quality that are reducing demand in other parts of the NHS or in the future. Our tentative view at present is that quality improvements are meeting rising patient expectations rather reducing demand for treatments.

Wage growth

When Wanless made his projections of NHS funding needs, he anticipated that wages would grow by around 2.4% per annum in real terms. Since making these assumptions, staff numbers have risen faster than Wanless anticipated and new contracts have been negotiated with the health professions. Growth in wages is higher than was expected and the impact on the overall wage bill has hence exceeded his assumptions. Table A.3.1 summarises recent trends.

Table A.3.1 Real wage growth in the NHS

	Average annual growth (2002 - 4)
Total staff numbers	4.7%
Total expenditure on salaries and wages (real terms)	7.5%
Average salary growth (real terms)	2.8%

Source: NERA calculations using Department of Health data

In the Model, we have assumed that wage growth starts to tail off after 2008. It varies by staff group, but the overall assumption is that growth in wages between 2008 and 2015 will be close to the national average growth in earnings per head (around 2% real terms growth per annum).

Changes in demand

We have assumed that the demand for healthcare (which the Model proxies through variables such as the number of people that consult with their GP, and referral rates between different settings of care) rise in the same way as recent trends. The hope is that these will fall in the long-term as the NHS manages disease in different ways. However, there is little evidence that this is occurring on a widespread scale. Indeed, if anything, efforts to intervene early and manage disease early are increasing referral rates and other costs as previously 'hidden' demand is uncovered.

Figure A.3.2 Main assumptions about the growth in staff numbers

View and Edit Key Assumptions					
Staff Resources Bed Resources Inpatient Care Throughput Outpatient & Primary Care Throughput					
	Base Value (2004)	Annual growth rate between		2008 Value	2014 Value
		2004-2008	2009-2014		
Consultants					
Private only consultants	337	6.00%	6.00%	425	604
Total NHS consultants	36,605	6.19%	4.50%	46,545	60,614
Surgical and anaesthetic (S&A) group	12,784	6.04%	4.50%	16,164	21,050
Psychiatry group	4,870	6.62%	4.00%	6,293	7,963
Registrars					
Total NHS registrars	16,242	6.06%	5.00%	20,552	27,541
Surgical and anaesthetic (S&A) group	6,036	6.66%	5.00%	7,812	10,469
Psychiatry group	1,034	1.24%	1.00%	1,086	1,153
Hospital Nurses					
Total NHS nurses	375,371	3.89%	1.50%	437,276	478,137
Psychiatric nurses	47,390	5.41%	1.50%	58,508	63,975
GPs					
Total GPs	31,523	2.59%	0.90%	34,918	36,846
Practice Nurses					
Total practice nurses	22,144	2.00%	2.00%	23,969	26,993
Private Nurses					
Total private nurses	26,523	3.00%	3.00%	29,851	35,644

Please note that all numbers are actual numbers of resource, not WTEs.

Note: Percentage inputs should be entered as percentages WITH a % sign. For example, an annual growth rate of 5% should be entered as '5%'.


Load Assumptions 

Figure A.3.3 Main assumptions about hospital beds

View and Edit Key Assumptions					
Staff Resources Bed Resources Inpatient Care Throughput Outpatient & Primary Care Throughput					
	Base Value (2004)	Annual growth rate between		2008 Value	2014 Value
		2004-2008	2009-2014		
Number of Beds					
NHS hospital beds	195,767	0.57%	0.40%	200,269	205,123
NHS psychiatry beds	28,808	0.00%	0.00%	28,808	28,808
Other beds	1	0.00%	0.00%	1	1
NHS treatment centre beds	150	20.86%	0.00%	320	320
ISTC beds	200	36.48%	0.00%	694	694
NHS intermediate care beds	2,599	4.06%	5.00%	3,047	4,084
Private sector beds (exc. ISTCs)	10,451	0.00%	0.00%	10,451	10,451
Private intermediate care beds	1	0.00%	0.00%	1	1
Occupancy Rates (%)					
NHS acute general	0.84	0.50%	0.00%	0.86	0.86
NHS psychiatry	0.88	-0.57%	0.00%	0.86	0.86
NHS treatment centres	0.90	0.00%	0.00%	0.90	0.90
ISTCs	0.90	0.00%	0.00%	0.90	0.90
NHS intermediate care	0.84	0.00%	0.00%	0.84	0.84
Private sector beds (exc. ISTCs)	0.50	9.00%	0.00%	0.71	0.71
Private intermediate care beds	0.84	0.00%	0.00%	0.84	0.84

Please note that all numbers are actual numbers of resource, not WTEs.

Note: Percentage inputs should be entered as percentages WITH a % sign. For example, an annual growth rate of 5% should be entered as '5%'.


Load Assumptions 

Figure A.3.4 In-patient care: activity per head

View and Edit Key Assumptions

Staff Resources | Bed Resources | Inpatient Care Throughput | Outpatient & Primary Care Throughput

	Annual growth rate between	
	2004-2008	2009-2014
Throughput in the NHS Acute Hospital Sector		
Consultants (FCEs per Consultant)	-3.00%	-2.00%
Registrars (FCEs per Registrar)	-3.00%	-2.00%
Beds per nurse	-2.00%	-1.00%
Throughput in the NHS Treatment Centres Relative to NHS Acute		
Consultants (FCEs per Consultant)	0.00%	0.00%
Registrars (FCEs per Registrar)	0.00%	0.00%
Beds per nurse	0.00%	0.00%
Throughput in ISTCs Relative to NHS Treatment Centres		
Registrars input in doctor teams	0.00%	0.00%
Psychiatry		
Consultants (FCEs per Consultant)	-2.00%	-1.00%
Registrars (FCEs per Registrar)	-1.00%	-0.50%
Beds per nurse	-2.21%	-1.10%
Intermediate Care		
GPs per bed	0.00%	0.00%
Beds per nurse	-1.50%	-1.00%

Note: Percentage inputs should be entered as percentages WITH a % sign.
For example, an annual growth rate of 5% should be entered as '5%'.

Load Assumptions




Figure A.3.5 Main assumptions about activity per head in out-patients and primary care


View and Edit Key Assumptions

Staff Resources | Bed Resources | Inpatient Care Throughput | Outpatient & Primary Care Throughput

	Annual growth rate between	
	2004-2008	2009-2014
Primary Care		
Consultations per GP	-1.00%	0.00%
Consultations per Practice Nurse	-1.60%	-1.50%
Public Acute Outpatients		
Consultations per Consultant	-3.00%	-2.00%
Consultations per Registrar	-3.00%	-2.00%
Public Psychiatric Outpatients		
Consultations per Consultant	-3.00%	-2.00%
Consultations per Registrar	-3.00%	-2.00%

Note: Percentage inputs should be entered as percentages WITH a % sign.
For example, an annual growth rate of 5% should be entered as '5%'.

Load Assumptions



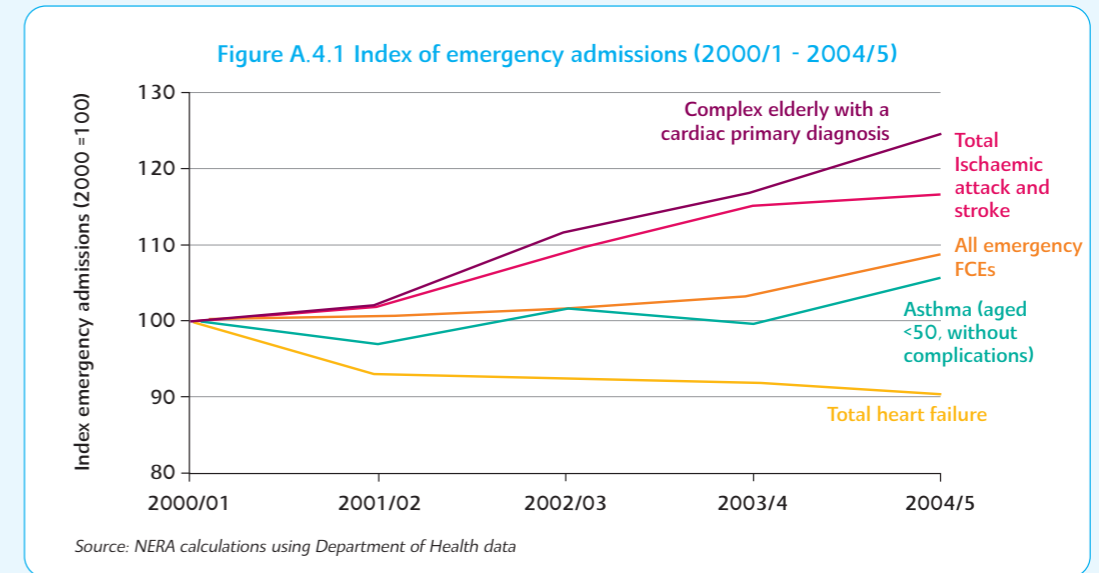
A.4 The scope for productivity improvement

There is little doubt that there is scope for productivity improvement in the NHS. In 2004, the NHS Modernisation Agency published its *10 High Impact Changes for Service Improvement and Delivery*. Amongst other things, this highlighted issues such as:²²

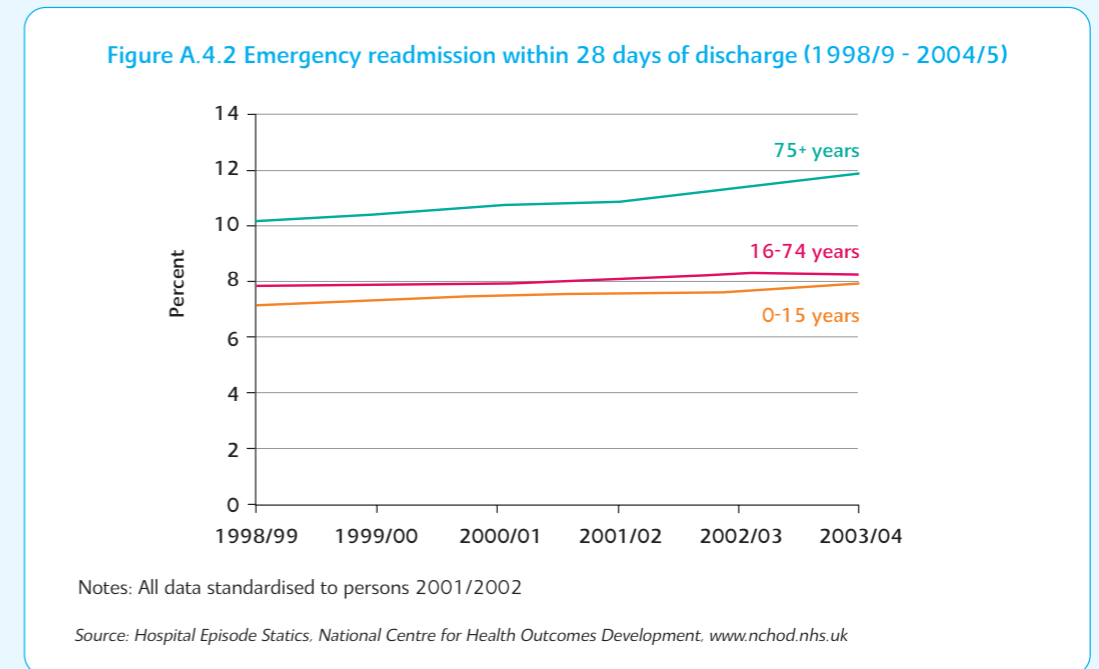
- wide variations across the NHS in the use of day surgery (eg a six-fold variation in day-case cataract rates and a four-fold variation in day-case arthroscopy rates)
- scope to improve discharge management and reduce length of stay (eg a patient admitted on a Friday may have a length of stay that is 25% longer than one admitted on a Tuesday, and there are wide variations in length of stay because of differences in processes between hospitals). It is estimated that 10% of total bed days could be released if variations in length of stay were improved
- high levels of follow-up care that are clinically unnecessary and for which a large number of patients do not attend

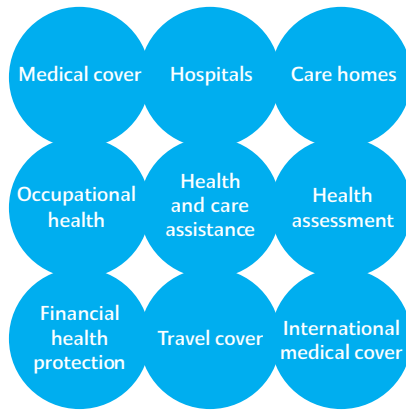
A difficulty that the NHS appears to have had historically is not so much identifying the scope to make efficiency improvements, but to actually make real productivity improvement on the scale that is expected. This is perhaps not so much a failing of the NHS, but just a reality that productivity growth in a large, multi-dimensional service is really quite hard to achieve. In areas such as in-patient activity, it is relatively easy to at least see what productivity improvement means. In other areas, such as in the treatment of mental illness or the management of chronic conditions, it is less appropriate to consider productivity in the crude terms of doing more things more efficiently. Rather, productivity gain comes through changing patient and staff behaviour and changing the nature of demand coming into the healthcare system.

One area that depends on behaviour change and the management of disease in different ways is controlling growth in emergency admissions. Figure A.4.1 shows recent trends in emergency hospital admissions, by diagnosis. Overall, emergency admission rates have been rising in recent years; whilst for some diagnoses they have been falling, for many others they have been rising. (We do not have data on the Department of Health's proposed measure of 'avoidable emergency admissions', but have selected FCEs that are related to conditions that ought to be amenable to reductions through better disease management.)



Data on emergency readmission rates following discharge from hospital have also been rising steadily since 1998/9. Figure A.4.2 presents data from recent years.





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