

### Summary

Over the next 20 years, the UK will need to devote a substantially larger share of its national income to health care, if the vision of the health service in this Report is to be achieved under any of the scenarios. The projections indicate that:

- the growth in spending should be highest in the early years, in order to allow the service to 'catch up', increase activity and deliver higher quality. As these costs are common across scenarios, early growth is similar in all three scenarios;
- this early growth is at the upper end of what could be sensibly spent, given other resource and capacity constraints, especially the workforce;
- in the later years, the workforce implications of increased activity present a significant challenge and demonstrate the need for skill mix changes and other means of improving productivity; and
- growth in spending in the later years tails off as the service 'keeps up'. But the rate of growth varies between the scenarios and health expenditure accounts for substantially different shares of national income across the scenarios by 2022-23.

The projections for social care show that population changes and the ageing of the population are a much greater cost pressure for social care than for health care. The projections do not incorporate the cost of improved quality, and so will under-estimate the additional resources required for social care.

### UK health spending summary

	2002-03 <sup>1</sup>	Projections			
		2007-08	2012-13	2017-18	2022-23
<b>Total health spending (per cent of money GDP)<sup>2</sup></b>					
Solid progress	7.7	9.4	10.5	10.9	11.1
Slow uptake	7.7	9.5	11.0	11.9	12.5
Fully engaged	7.7	9.4	10.3	10.6	10.6
<b>Total NHS spending (£ billion, 2002-03 prices)</b>					
Solid progress	68	96	121	141	161
Slow uptake	68	97	127	155	184
Fully engaged	68	96	119	137	154
<b>Average annual real growth in NHS spending (per cent)<sup>3</sup></b>					
Solid progress	6.8	7.1	4.7	3.1	2.7
Slow uptake	6.8	7.3	5.6	4.0	3.5
Fully engaged	6.8	7.1	4.4	2.8	2.4

<sup>1</sup> Estimates.

<sup>2</sup> All figures include 1.2 per cent for private sector health spending.

<sup>3</sup> Growth figures are annual averages for the five years up to date shown (Four years for the period to 2002-03).

## INTRODUCTION

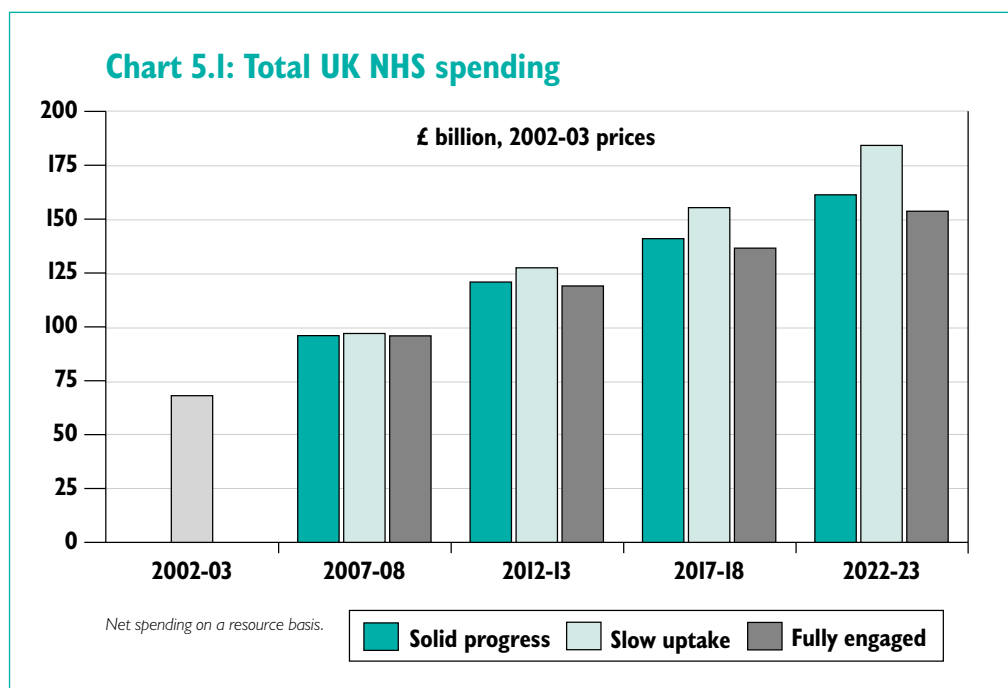
- 5.1 This chapter sets out the results of the Review's modelling work. Estimates of the resources which will be required over the next 20 years to deliver the high quality health service described in Chapter 2 have been produced.
- 5.2 For each of the three scenarios outlined in Chapter 3, to deliver the health service envisaged, the UK will need to devote a substantially larger share of its national income to health than it does today. There are also significant workforce implications over the period which need to be considered carefully.
- 5.3 The aggregate expenditure results are presented first, followed by greater detail of the contribution of specific factors. The chapter then discusses the workforce requirements against which the Review's expenditure projections have been considered. Finally, more illustrative projections show the impact, from the present spending base, of demographics and ill health on social care spending over the next two decades.
- 5.4 The projections are intended to show what resources might be required to deliver a high quality health service under three plausible and coherent views of the future. Many different scenarios are, of course, possible and could result in very different estimates.
- 5.5 The overall projections presented in this chapter are for the UK as a whole, in line with the Review's Terms of Reference. However, as noted in the previous chapter, the Review's detailed modelling has been carried out using data related to England. Thus, breakdowns showing the impact of different trends affecting health care relate to England. Consultation responses agreed with the Interim Report's assessment that the most significant of these trends are likely to impact similarly across all countries of the UK.
- 5.6 Assessing the resources required for the health service so far ahead is not straightforward. The Report has already highlighted the benefits of assessing long-term resource requirements, as well as some of the difficulties in making such an assessment. Annex A discusses these challenges in more detail and suggests how they might be addressed to assist subsequent reviews of this kind.
- 5.7 These challenges should be borne in mind when considering the projections in this chapter. Clearly, confidence in these estimates is greater for the earlier years than the later ones.

## AGGREGATE RESULTS

- 5.8 In 2002-03, total NHS spending in the UK is expected to be around £68 billion, or 6.5 per cent of GDP. Including private expenditure on health, the figure is likely to be around 7.7 per cent of GDP.
- 5.9 Under the different scenarios considered, the Review estimates that UK NHS spending will rise to between 9.4 and 11.3 per cent of GDP in 2022-23 to

deliver the high quality health service which the Report describes. On the simple assumption that private health expenditure remains constant at its present level of around 1.2 per cent of GDP, this would raise total UK health spending to between 10.6 and 12.5 per cent of national income in 20 years' time (see Box 5.1).

5.10 This represents a considerable rise from current levels of expenditure – in 2002-03 prices, an increase from £68 billion today to between £154 billion and £184 billion in 2022-23, as illustrated in Chart 5.1. Across the 20 year period, this would imply total NHS spending increasing at an average rate of between 4.2 and 5.1 per cent a year in real terms.



5.11 These estimates incorporate both the cost of 'catch up' and 'keep up', i.e. the resources required to close the gaps in quality and expectations identified in Chapter 2 and then to keep them closed. Roughly speaking, the first decade of the Review is focused on 'catching up' and the second on 'keeping up'.

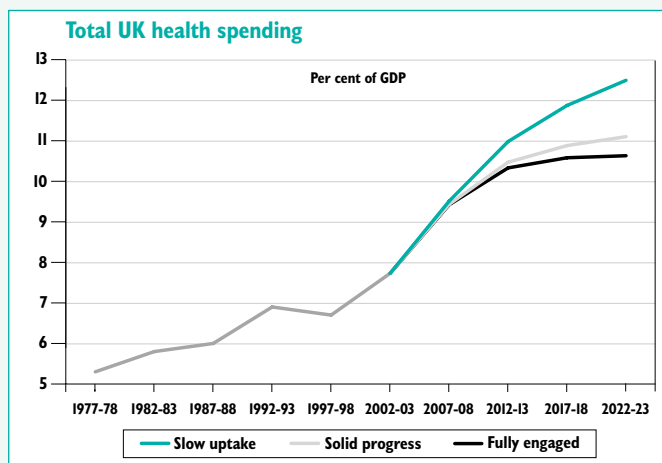
5.12 The rate of growth therefore varies across the 20 years. Given the importance of much needed investment being undertaken as quickly as it sensibly can be, and given the commitments of the NHS Plan to 2010, the fastest period of spending growth comes in the early years. This is boosted by increased infrastructure spending to help expand capacity.

5.13 Table 5.1 shows the profile of growth in NHS spending. Over the next five years, between 2003-04 and 2007-08, average spending growth of between 7.1 and 7.3 per cent a year in real terms is projected across the scenarios. The growth rate eases back in the second five year period, although remaining well above the average real terms growth rate of 3.6 per cent a year over the past two decades. During the second decade, as an increasing proportion of the 'catch up' spending has been undertaken, the required

### Box 5.1: UK health spending

The UK has historically devoted a smaller share of its national income to health care than the European average – around 1 to 1½ percentage points a year less since at least 1972. This has contributed cumulatively to the serious shortcomings seen in the UK health service today.

The acid test of the success of the health service must be how health outputs and outcomes compare to other major countries, rather than how spending inputs compare. Indeed, it is with these outputs and outcomes that the Review's resource projections aim to 'catch up' and 'keep up'. However, these improvements will only be realised over a period of years.



Rising spending is only a useful indicator of how the health service is 'catching up' if the resources are being deployed effectively. Even then it should be secondary to measures indicating progress, for example, milestones relating to investment in the workforce, ICT and the capital estate.

The above chart shows the projected increase in the percentage of GDP devoted to health care in the UK (both public and private) over the next 20 years under each scenario. It is impossible to know how UK spending will compare with that of other countries in 20 years' time. But it seems reasonable to anticipate that the share of GDP devoted to health care in other countries will continue to increase over the next two decades: many of the trends identified by the Review as driving up costs in the UK are likely to affect comparator countries in similar ways.

It is also reasonable to anticipate that the UK's rate of increase in health spending will differ from that of other EU states. Much of the first decade's more rapid spending will help the UK to 'catch up' to the standards of its EU partners, while the projections for the subsequent decade should allow the UK to 'keep up' with (rising) standards across all countries.

However, as noted above, a particular level of spending input does not guarantee a particular level of health outcomes and outputs. For example, Sweden has a higher life expectancy than the US, but its health spending as a percentage of GDP is substantially less than that of the US<sup>1</sup>. How effectively resources are used is important. How well health resources have been used in the past and other wider societal factors, such as levels of income and educational inequalities, will continue to impact on outcomes.

<sup>1</sup> Health spending as percentage of GDP 1998: US – 12.9, Sweden – 7.9 (OECD Health Data 2001). Life expectancy at birth 1998: US – 73.9 for men and 79.4 for women, Sweden – 76.9 for men and 81.9 for women. Source: OECD Health Data 2001.

real growth rate falls back further, particularly in the *fully engaged* scenario. In the final five years of the 20 year period, spending grows by between 2.4 and 3.5 per cent a year in real terms.

**Table 5.1: Total UK NHS spending<sup>1</sup>**

	Average annual real growth, per cent				
	1999-00 to 2002-03	Projections			
		2003-04 to 2007-08	2008-09 to 2012-13	2013-14 to 2017-18	2018-19 to 2022-23
Solid progress	6.8	7.1	4.7	3.1	2.7
Slow uptake	6.8	7.3	5.6	4.0	3.5
Fully engaged	6.8	7.1	4.4	2.8	2.4

<sup>1</sup> Net spending on a resource basis, converted to real terms using the GDP deflator at market prices.

- 5.14 Under the three scenarios, total UK health spending (public and private) is projected to rise from an estimated 7.7 per cent of GDP in 2002-03 to between 9.4 and 9.5 per cent of GDP in 2007-08. The figures then diverge, with spending under the *slow uptake* scenario rising strongly to 11.0 per cent of GDP in 2012-13 and 12.5 per cent of GDP by 2022-23. Health spending is projected to take a considerably lower share of national income under the *fully engaged* and *solid progress* scenarios: 10.3 and 10.5 per cent respectively in 2012-13, rising to 10.6 and 11.1 per cent respectively by 2022-23.

### Capacity constraints

- 5.15 In arriving at its final resource estimates, it has been important for the Review to consider carefully both short-term and long-term capacity issues. The rate at which activity can sensibly be expanded is determined by the available capacity within the system. This includes having adequate physical capacity in terms of buildings and information capacity in the form of ICT. But most importantly, it means having sufficient numbers of staff with the right level of skills.
- 5.16 To aim for too rapid a rate of activity growth risks hitting capacity constraints and driving up costs rather than activity. However, aiming too low means delaying the improvements in quality and access across the service.
- 5.17 Some of the projected increase in expenditure which is required will not impact directly on staff requirements, for example, investment in ICT and the capital estate. The Review's projections allow for a substantial and immediate expansion in spending on both, as discussed later in this chapter. But substantial increases in activity are also required, for example to implement the NSFs and reduce waiting times. These will inevitably require additional staff and/or an adjustment in the skill mix among the existing workforce. But this takes time and inevitably imposes a short-term limit on the rate at which the service can expand. Beyond the short term, there is much greater scope for recruitment and training plans to be adjusted or skill mix changes to be realised.

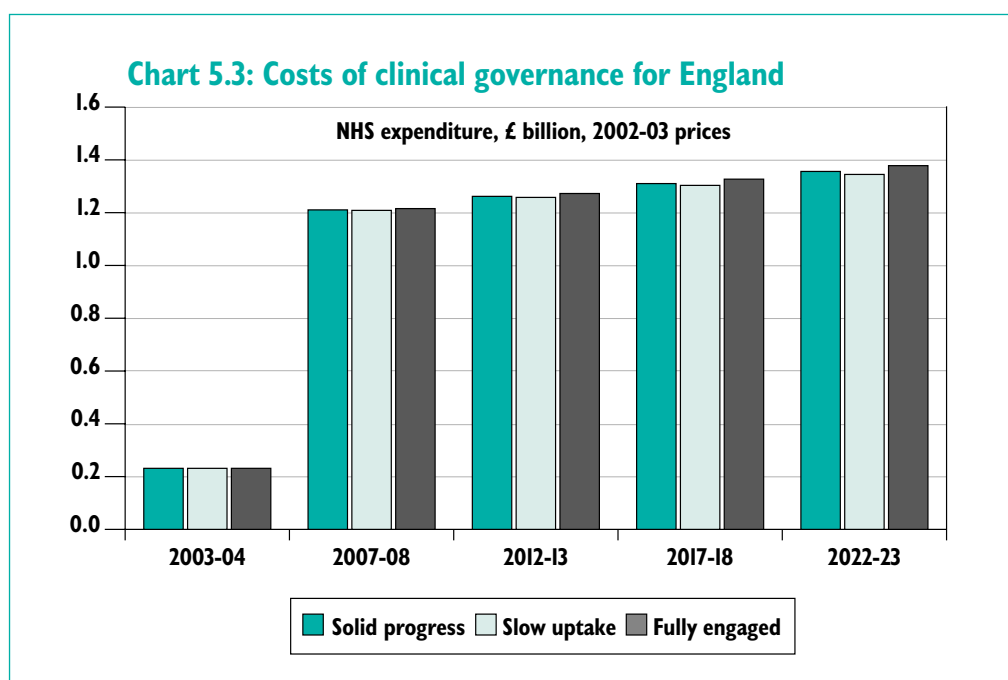
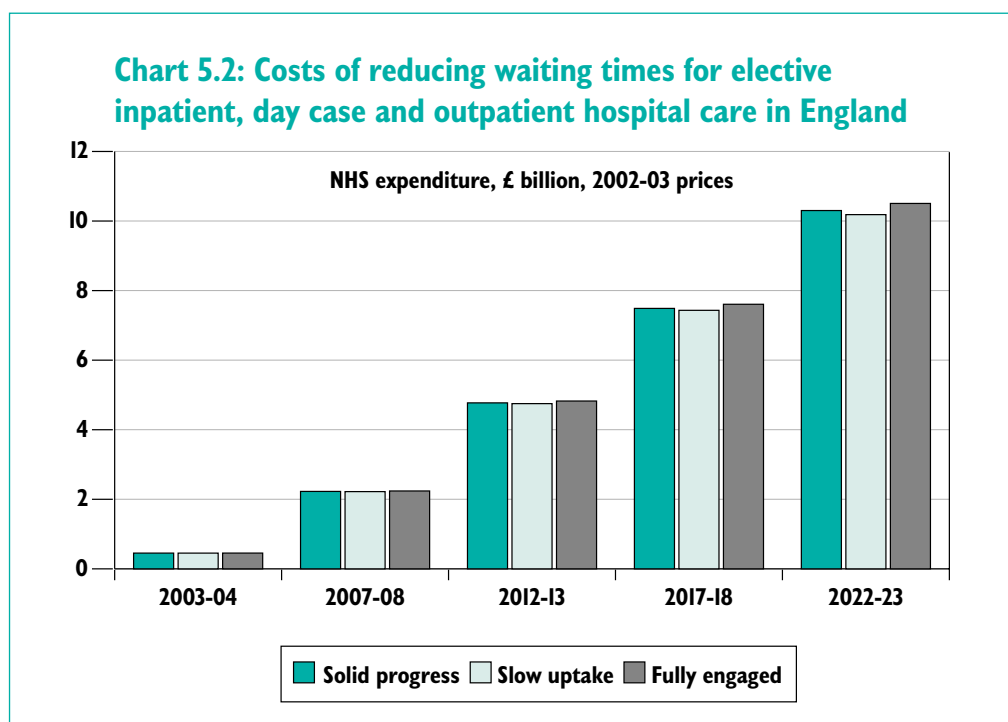
- 5.18 Workforce requirements are considered in more detail later in this chapter. It sets out how the Review has assessed the plausibility of its activity projections by comparing the implied workforce demand with projections of workforce supply.
- 5.19 Given the expected workforce supply over the next few years, the Review believes that its projections for UK real terms spending growth of 7.1 to 7.3 per cent a year over the next five years are at the upper end of what could sensibly be spent. Indeed, to be wisely spent, they would represent a very considerable management challenge. The risks of spending being ineffective rises with the spending growth rate. The figures already incorporate assumptions that the significant workforce expansion planned for the next few years is fully delivered, that ICT spend can be doubled and spent productively, and that waiting times and NSF commitments are met.
- 5.20 Beyond the short term there is more scope – if action is taken early – to increase the number, composition and skill mix of staff compared to current plans. The workforce section of this chapter therefore attempts to map out in broad terms what some of the key workforce challenges and opportunities are likely to be over the next 20 years.

## COMPARING THE SCENARIOS

- 5.21 While in the early years of the Review period the growth rates between scenarios are similar, they subsequently diverge. This results in health spending as a percentage of GDP being around 2 percentage points higher by 2022-23 in the *slow uptake* scenario than the *fully engaged* scenario. In absolute expenditure terms, this gap is very large: around £30 billion or approaching half of today's NHS budget.
- 5.22 It is important to note that while *slow uptake* is the most expensive scenario, it also is based around the worst health outcomes. *Fully engaged* is the least expensive but based around the best outcomes. Life expectancy, as described in Chapter 3, is nearly 3 years higher for men and 2½ years higher for women in the *fully engaged* scenario. This illustrates the reality that higher spending inputs do not necessarily imply better health outputs and outcomes.
- 5.23 While the expenditure differences between the scenarios are substantial, they might have been more significant. There are two reasons why they are not:
- the most expensive cost drivers – those of delivering high quality and meeting rising expectations – are common to all the scenarios, explaining the substantial increase in resources projected in all three; and
  - some of the cost drivers which differ between the scenarios work in opposite directions. For example, in *solid progress*, the higher expenditure associated with increased health seeking behaviour offsets the lower expenditure associated with reduced ill health in old age.

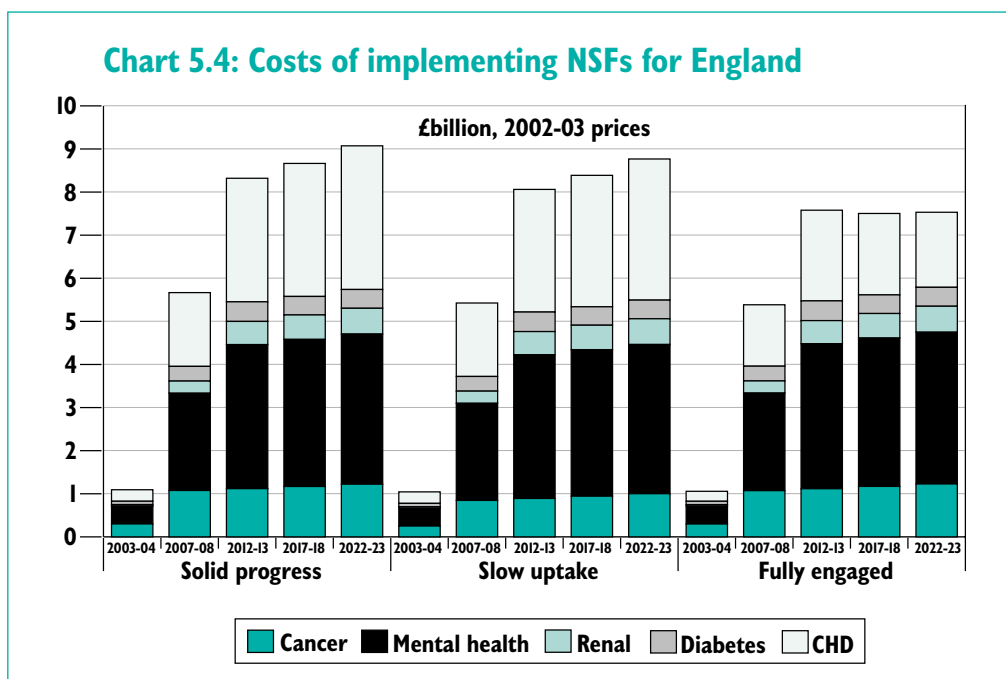
## Similarities between scenarios

- 5.24 The principal costs of delivering better quality and meeting patient expectations (implementing the NSFs and expanding them across the service, reducing waiting times, improving clinical governance and better accommodation) are included in all the scenarios, and account for a large proportion of the increase in costs. Improving quality accounts for around two thirds of the growth rate in each scenario.



- 5.25 Charts 5.2 and 5.3 set out the projected costs in England of reducing waiting times and improving clinical governance. These are similar for each scenario – the differences are almost exclusively the result of different population sizes. For all three scenarios, the additional cost in today's prices of reducing

inpatient and outpatient waiting times to two weeks is estimated to be around £10 billion a year by 2022-23. The additional cost of improved clinical governance is estimated to be around £1.4 billion a year by 2022-23, with most of this coming through during the first five-year period.



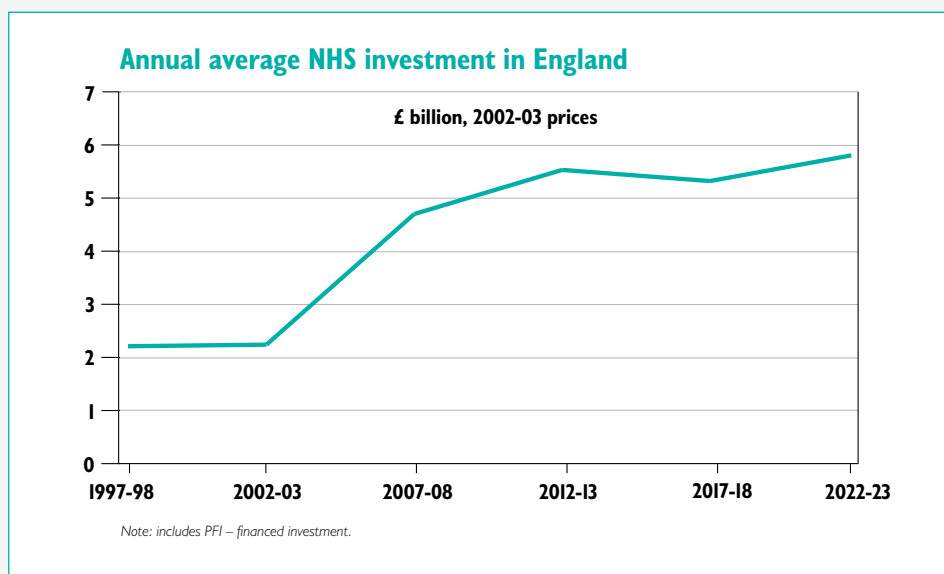
5.26 The costs of implementing the NSFs show a similar pattern (see Chart 5.4). Here, the cost of the *fully engaged* scenario is lower than simple population differences would suggest as a result of the reduced expenditure on statins (see Box 2.3 in Chapter 2), which the Review has assumed as part of the substantial improvement in public health in this scenario. As a result, the only NSF cost which is substantially different between the *fully engaged* and *solid progress* scenario is for coronary heart disease (CHD). This reduced expenditure is also reflected in the number of prescriptions which by 2022-23, are estimated to be around 15 per cent lower in *fully engaged* than in the other two scenarios.

5.27 As set out in Chapter 2, the Review has used its estimates for these five NSF areas to extrapolate the costs of ‘catching up’ to internationally comparable standards for other disease areas. As with the five NSFs, the cost of delivering these is fairly uniform across all scenarios.

5.28 The cost of delivering higher quality in the five specific disease areas and generalising to other disease areas from the results covers only the cost of ‘catching up’. The Review has also accounted for the increased costs of ‘keeping up’ once the NSFs have been implemented as well as increased costs before implementation. These costs are not common across the scenarios. This reflects the Review’s alternative technology assumption which contributes 2 percentage points to spending growth in the *slow uptake* scenario and 3 percentage points in the *solid progress* and *fully engaged* scenarios (see Chapter 3).

5.29 Box 5.2 describes the projections used by the Review of capital spending.

#### Box 5.2: Capital spending



The above chart shows NHS capital investment spending over the recent past and the projected increase in expenditure over the Review period. It includes expenditure on both new and replacement hospitals, equipment and capital investment in ICT (based on the *solid progress* and *fully engaged* scenarios). Over the first 10 years of the Review period, average annual capital spending (including PFI-financed investment) increases from £2.2 billion to £5.5 billion. The subsequent dip reflects some modest fall back in the level of ICT capital spending from the high levels of infrastructure investment over the first decade. ICT capital spending is discussed later in this chapter.

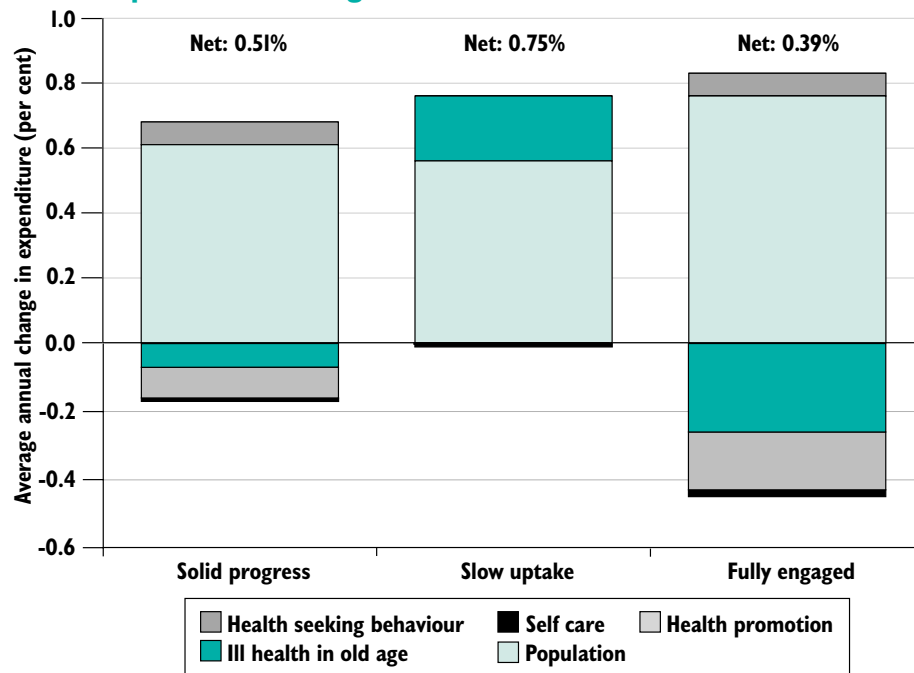
These projections represent a significant increase in investment. For example, the NHS Plan committed to delivering “over 100 new hospital schemes between 2000 and 2010”. This includes 38 major hospital schemes already approved to go ahead. Since then, 30 major schemes with a capital value of almost £3.6 billion have also been approved, with the cost varying between £26 million for a new Diagnostic and Treatment Centre (DTC) and £400 million for a ‘super’ hospital.

The Review’s assumptions set out in Chapter 2, which have been fed into the resource modelling, imply an additional cumulative spend on new hospitals of £42 billion over the next 20 years. Assuming a cost of around £200 million to build a 500-bed district general hospital with 75 per cent single en-suite rooms, this translates to around 205 new hospitals over the entire period. This represents an extremely ambitious capital building programme, substantially in excess of current NHS Plan estimates – current targets include all schemes with a capital spend in excess of £25 million such as DTCs.

## Differences between scenarios

- 5.30 The scenarios impact on the resources required for the health service over the next 20 years by either affecting demand for care or the cost and configuration of the supply of care. Some factors increase costs while others decrease them. Changes in the detailed breakdown of costs are greater than changes in the overall cost between the three scenarios, as some changes offset each other in the modelling. Supply differences have the larger impact. But demand differences cannot be ignored as they are closely linked to substantial differences in health outcomes.
- 5.31 While the Review's estimates are based on reasonable and informed assumptions, even slight changes to these assumptions would have a substantial cost impact. The sensitivity of the projections of the supply factors can be illustrated by considering the case of productivity. As set out in Chapter 3, in the *solid progress* and *fully engaged* scenarios, quality-adjusted productivity growth is assumed to rise from 2 per cent a year in the short term to 3 per cent a year in the second decade. Around half of this is assumed to comprise unit cost reductions and around half higher quality. In the *solid progress* scenario, UK health spending is projected to rise to 11.1 per cent of GDP by 2022–23. If, for example, the cost-reducing elements of productivity growth were to be 1 percentage point a year lower than assumed over the 20 year period, and nothing else changed, the equivalent spending figure would be 13.1 per cent of GDP. Conversely, if productivity growth were to be 1 percentage point a year higher over the 20 years, the percentage of GDP devoted to health care, all other things being equal, would be 9.4 per cent by 2022–23.
- 5.32 Chapter 3 set out the Review's ambitious assumptions for an increase in ICT expenditure over the next 20 years. The Review's projections show ICT expenditure stabilising at around £2 billion a year in 2002-03 prices during the second decade, roughly double its level today. However, the pace of investment varies between the scenarios. In the *solid progress* and *fully engaged* scenarios the initial pace is rapid, with investment peaking in the middle of the first decade at around £2.4 billion; in the *slow uptake* scenario the pace is slower, peaking around two years later but at a higher level to reflect a catch up to the same level of cumulative spending given the slower start. The Review believes that there is a strong case for a rapid pace of investment, but only if the necessary steps are taken to ensure that this will deliver the required results in a cost effective way. This is considered further in Chapter 6.
- 5.33 Chart 5.5 shows the demand factors described in Chapter 3 and their impact on expenditure. The impact is comparatively small, although rather different between scenarios. Their net contribution to average annual expenditure is lowest in the *fully engaged* scenario, at around 0.4 per cent a year. It is greatest in the *slow uptake* scenario, but even then only around 0.75 per cent a year. This is largely because the expenditure estimates are not particularly sensitive to the different assumptions about life expectancy.

**Chart 5.5: Average annual impact of demand drivers on NHS expenditure for England**



Note: The demand drivers are considered in isolation of each other and all other factors in the model.

5.34 The population is the largest driver among the demand factors. The impact increases progressively from *slow uptake* to *solid progress* to *fully engaged*, in line with the progressive increase in the overall size of the population and the proportion aged over 85. Across all scenarios, the contribution of demographic change to future costs is relatively modest. This reflects the fact that the Review’s estimates of expenditure on hospital care have incorporated the impact of proximity to death as well as age, as described in Chapter 3. Had the Review not done so, the contribution of population change to NHS expenditure would have been around 0.1 percentage points higher.

5.35 All three scenarios include similar population growth, with fertility and migration assumptions the same across all three and only mortality assumptions varying. The Review has conducted sensitivity analysis on the two additional population projections described in the Interim Report: one (“young”) with high fertility, high migration and low life expectancy which results in high population growth to over 67 million by 2022 and 18 per cent of people aged over 65; and a second (“old”) with low fertility, low migration and high life expectancy which results in low population growth to 61½ million by 2022 and 21 per cent of people aged over 65. Projecting future resource requirements with these population assumptions results in population change contributing 0.71 percentage points a year on average to expenditure for the “young” population projection and 0.62 percentage points a year for the “old” projection. The difference between these two population projections is largely related to overall population growth and the proportion of older people

- 5.36 The *slow uptake* scenario shows the highest overall costs for the demand factors because, although it has the youngest population, the assumption about the deteriorating health of older people in the future leads to increased costs. In addition, there are no factors impacting to reduce costs in this scenario.
- 5.37 The *solid progress* and *fully engaged* scenarios show greater demand from increased health seeking behaviour being more than cancelled out by decreasing demand from improvements in health status for both those aged 15-64 and those aged 65 and over. In the *solid progress* scenario, the impact of improved health status is twice as large as that of increased health seeking behaviour, while in the *fully engaged* it is over six times as large. This explains why, despite having the largest population, *fully engaged* has the lowest demand impact on costs.
- 5.38 This masks some significant impacts of reducing individuals' risk factors associated with key diseases. As noted in Chapter 3, there are wider benefits to individuals, society and the economy of preventing rather than treating ill health and extending healthy life expectancy and overall life expectancy: "healthy communities tend to attract investment and unhealthy ones do not"<sup>2</sup>.

**Table 5.2: Percentage difference in annual average activity per person between scenarios in 2022-23**

	Inpatients and outpatient	GP visits	Prescriptions
Solid progress compared to fully engaged	+6	+10	+13
Slow uptake compared to fully engaged	+8	-1	+17
Solid progress compared to slow uptake	-2	+11	-3

- 5.39 Although the net expenditure implication of these demand and supply factors (excluding pay and prices) is relatively limited, the activity impact is significant. For inpatient and outpatient visits there is considerably more activity in the *solid progress* and *slow uptake* scenarios than in the *fully engaged* scenario. For example, by 2022-23, average annual inpatient and outpatient activity per person is estimated to be around six to eight per cent higher in *solid progress* and *slow uptake* than in *fully engaged* (see Table 5.2). The higher estimates for *slow uptake* reflect the increased demand arising from greater ill health among the elderly (see Box 5.3). The higher estimates for *solid progress* reflect the strong focus on curative care in this scenario. The lower estimates for *fully engaged* reflect the improvements in health promotion and disease prevention as a result of increased public engagement (see Chart 5.5).

<sup>2</sup> Hunter D (2002), Wanless with a pinch of salt, Health Service Journal 10 January 2002.

5.40 The projections for GP visits also demonstrate some of the key differences between the scenarios. The average number of GP visits per person per year is estimated to be around 10 per cent higher in *solid progress* than in both *slow uptake* and *fully engaged*. The difference with *slow uptake* reflects the rapid response of the service to investment in *solid progress*, and the knock-on effect in increased demand due to the resulting increased public confidence. The difference with *fully engaged* is the result of high public engagement and lower ill health in old age in that scenario.

## WORKFORCE

5.41 The size and composition of the workforce is one of the most important determinants of the capacity of the health service. With such a highly skilled workforce, changing the capacity of the NHS will take time and needs to be actively managed. The Review developed a workforce model in conjunction with the Department of Health to examine the staff resources which would be required under the three scenarios.

5.42 The workforce model compares the projected workforce demand with the likely supply of suitably skilled workers, and has two objectives:

- to check whether the rates of activity growth projected in the three scenarios risk hitting capacity constraints, driving up costs rather than improving the quantity and quality of health care; and
- to identify some of the key implications for workforce demand to feed into the more detailed workforce planning work which is the responsibility of the various workforce planning bodies.

5.43 This work has been limited to England. Although the broad trends are likely to be similar in the other countries within the UK, they may find it helpful to undertake a similar, more detailed analysis of the workforce implications of additional investment at the rates set out in this Review.

5.44 The workforce model assesses the implications of the additional activity for workforce demand. The model assumes current levels of workforce productivity with two changes:

- doctors' working hours fall to 48 hours a week in line with the Working Time Directive; and
- average length of stay for inpatient admissions to hospital falls in line with the estimates set out in the National Beds Inquiry<sup>3</sup>.

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<sup>3</sup> See Table 3.3.

5.45 Over the next two decades, many factors are likely to impact on workforce productivity. For example, ICT investment may significantly reduce the amount of time medical and nursing staff have to spend on administration, freeing up more time for patient care. Counterbalancing this, the amount of time spent on clinical governance will increase. For its financial projections, the Review has assumed that 10 per cent of professional staff's time should be devoted to clinical governance (see Chapter 2). For the workforce modelling, the Review has not attempted to quantify the net effect of these different demands on staff time. Any further work by the workforce planning bodies will want to explore these issues in more detail.

5.46 The increased activity projected in the Review would result in a substantial increase in the demand for health care workers. Overall under the three scenarios the health care workforce might need to increase by almost 300,000 over the 20 years<sup>4</sup>. The rates of increase are not uniform across the different staff groups. For illustration, the *solid progress* scenario increases the demand for different groups within the health care workforce as follows:

- 62,000 doctors;
- 108,000 nurses;
- 45,000 professionally qualified therapists and scientists; and
- 74,000 health care assistants (HCAs).

**Table 5.3: Growth in the number of doctors<sup>1</sup> in England**

	Percentage change on five years earlier			
	2005	2010	2015	2020
<b>Demand</b>				
Solid progress	11	29	15	4
Slow uptake	11	28	15	3
Fully engaged	10	29	13	3
<b>Supply</b>	12	10	7	8

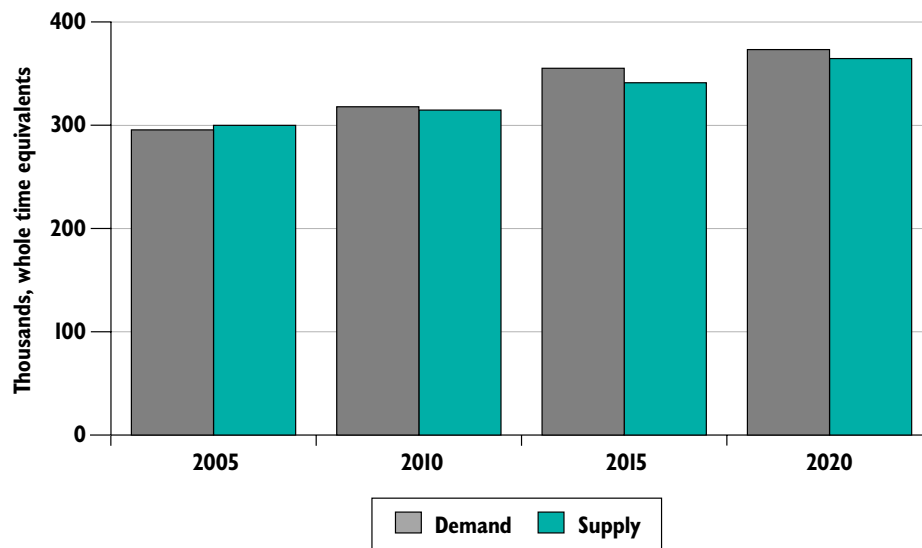
<sup>1</sup> Whole time equivalents. Comprises consultants, junior doctors and GPs.

5.47 Table 5.3 shows the five year growth rate in the demand for doctors under the three scenarios. There is very little overall difference in either the number or mix of staff required between the different scenarios. Under each scenario workforce demand grows the fastest over the second half of this decade.

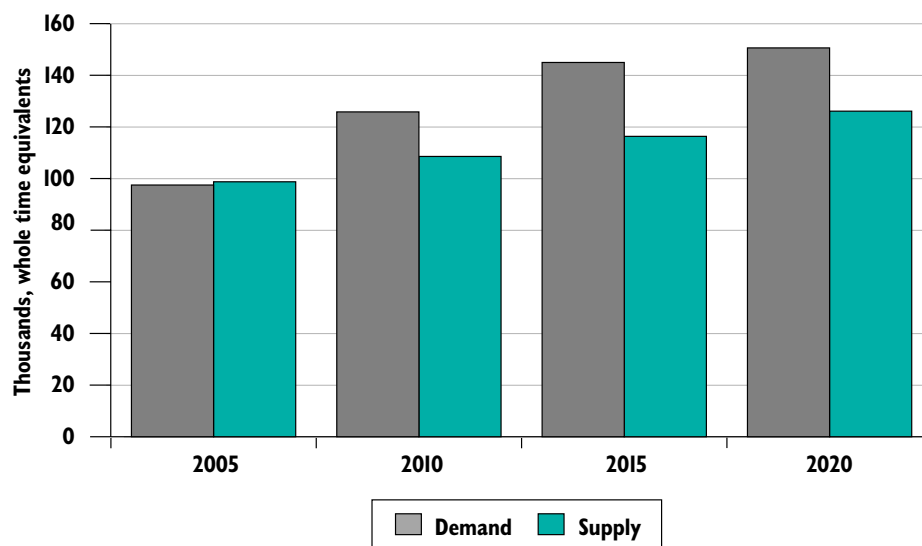
5.48 All three scenarios project a substantial increase in primary care activity. Without any other changes, and assuming the continuation of current working practices, this leads to a doubling in the demand for GPs, from almost 26,000 in 2000 to more than 55,000 by 2020 in the *solid progress* scenario

<sup>4</sup> All figures for additional demand and supply are for whole time equivalents.

**Chart 5.6: Workforce implications: demand for and supply of nurses, *solid progress***



**Chart 5.7: Workforce implications: demand for and supply of doctors, *solid progress***



5.49 The Interim Report showed that the UK does not have enough doctors and nurses. The NHS Plan set out targets to increase the number of professionally qualified staff. The Government has embarked upon a programme to increase the numbers in training and improve recruitment and retention rates. This programme is designed to result in a substantial increase in the number of professionally qualified staff in the health service. The Review's workforce model has compared the increased workforce demand implied by the activity projections for each scenario with the increased supply that is expected if the Government achieves its plans for additional training, recruitment and retention. Charts 5.6 and 5.7 compare the projected increase in demand for and supply of nurses and doctors in the *solid progress* scenario. This scenario results in the largest increase in demand although, as noted above, the workforce differences between the scenarios are relatively small.

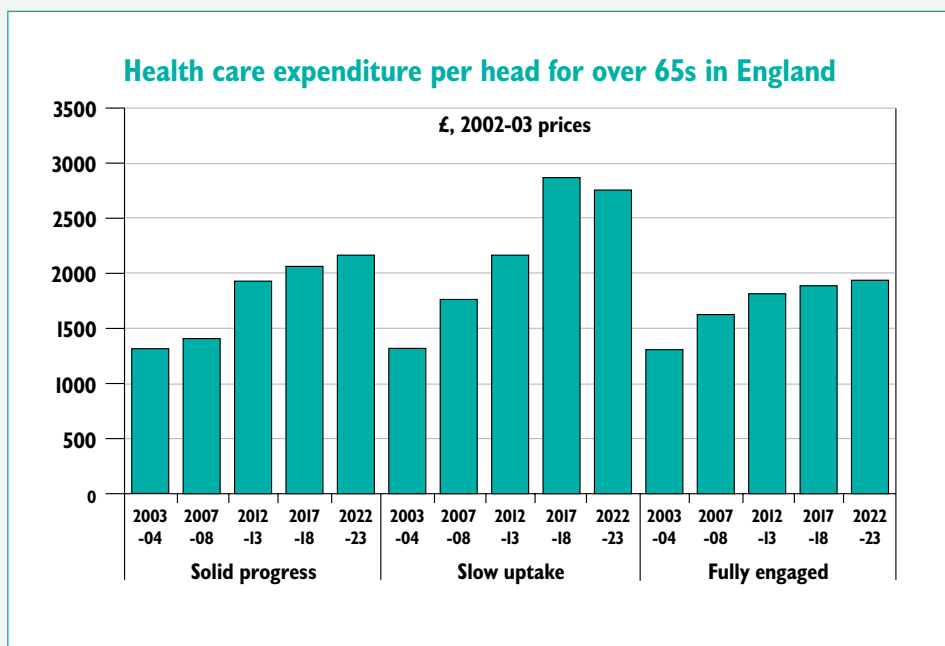
- 5.50 The charts show that the planned increase in the supply of nurses is almost sufficient to match demand, but the planned increase in doctors is well short of needs. Without some other change, there is likely to be a significant shortfall in the number of doctors. The number of qualified therapists and scientists is projected to slightly exceed demand. However, this may mask a shortfall in individual professions.
- 5.51 The gap in the number of doctors starts to emerge before the end of this decade and is estimated to be around 25,000 after 20 years<sup>5</sup>. The position for nurses is highly dependent on the assumptions made about average length of stay in hospital. If average length of stay falls further than assumed in the National Beds Inquiry, the demand for nurses will be lower. If, however, these assumptions are not met, the demand will be higher and there is the potential for a shortage in the nursing workforce.
- 5.52 The potential shortfall in the number of doctors is based on the current skill mix of the NHS workforce. As the Interim Report outlined, the next 20 years are likely to see significant changes in the roles and responsibilities of different staff groups within the NHS. There is emerging research evidence of considerable scope for changes in the skill mix of the service. The consultation responses showed fairly widespread, but not universal, support for this view.
- 5.53 Alongside the expansion in the number of staff, the NHS Plan set out proposals to introduce new ways of working in the service to break down professional barriers. The NHS Modernisation Agency is leading work to identify best practice and ensure that it takes hold across the service. The Government is also negotiating new contracts with GPs, consultants and nurses. The pay modernisation plans are important for workforce capacity in two regards. First, they should encourage qualified doctors and nurses to stay in the service or, if they have left, to return to the NHS. Second, they should result in a more flexible workforce with greater scope for team working and fewer barriers between different staff groups. This should allow the skill mix in the service to change.

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<sup>5</sup> The global match between demand for and supply of doctors in 2005 masks difficulties in some specialities which the Government has policies to address.

- 5.54 The Review has explored the potential contribution that skill mix changes can make to the potential mismatch between the demand for and supply of doctors. The Interim Report highlighted evidence suggesting that Nurse Practitioners could undertake at least 20 per cent of the work of doctors while maintaining the safety and quality of care. If 20 per cent of GP and junior doctors' work were shifted to Nurse Practitioners, this would eliminate any potential capacity constraint in doctor numbers. However, it would then introduce a potential shortfall in the supply of nurses. Research evidence shows that Nurse Practitioner consultations are longer, so more nurses will be required to deliver a given level of activity. The Review has assumed a 'transformation rate' of 1.5. On this basis, the demand for nurses would increase by around a further 10 per cent. This could be filled if 12.5 per cent of nurse workload could shift to health care assistants (HCAs). But on the basis of a transformation rate of 1.5, this would require additional recruitment of almost 70,000 HCAs in addition to the projected increase in demand of 74,000. Although there is scope to increase the number of HCAs, it may be difficult to recruit this many HCAs on top of the current workforce of around 350,000.
- 5.55 So although skill mix change could make a major contribution to eliminating any potential skills mismatch over the 20 years, the workforce model implies that there will also need to be an increase in the number of doctors and nurses over that already planned. This should be achievable if the pay modernisation currently under negotiation results in improved recruitment and retention.
- 5.56 It is outside the scope of this Review to make recommendations on the precise configuration of staff required over the next 20 years. However, the workforce modelling for this Review shows:
- demand for nurses broadly in line with supply, if the National Beds Inquiry assumptions about average length of inpatient admissions are met;
  - a potential mismatch in the demand and supply of doctors if no other changes are made;
  - pay modernisation could narrow the possible gap through improved recruitment and retention; but
  - a significant change in the skill mix of the health care workforce is likely to be required, with a much greater role for Nurse Practitioners and health care assistants. This should be achievable while maintaining the safety and quality of care.
- 5.57 Changing skill mix and increasing workforce capacity cannot happen quickly; it needs to be planned and actively managed. The workforce modelling suggests that there is sufficient capacity, but only just, in the short term to deliver the activity projected in the three scenarios. But before the end of the decade, there needs to be considerable progress on skill mix and pay modernisation to avoid capacity constraints.

Box 5.3: Costs of caring for older people



Older people are relatively heavy users of health care. The chart above shows how expenditure per head on older people is projected to change over the next 20 years and how it differs between scenarios.

The figures incorporate both the changing cost of delivering high quality care described in Chapter 2 and the different demand and supply assumptions described in Chapter 3. It shows that by 2022-23 expenditure per head in *slow uptake* is substantially higher than in *solid progress* and *fully engaged*. This reflects the overall higher costs associated with *slow uptake* shown earlier in this chapter and is explained by the combination of the costs of delivering a high quality service, relatively low productivity gains and the highest levels of demand of the three scenarios, despite no allowance having been made in that scenario for people aged over 75 to experience similar treatment rates to those aged 65-74.

The lower expenditure per head seen for *solid progress* and *fully engaged* is largely a result of productivity gains and reduced demand because of better health status, which cancels out the additional costs associated with levelling treatment rates between 65-74 year olds and those aged 75 and over.

## SOCIAL CARE

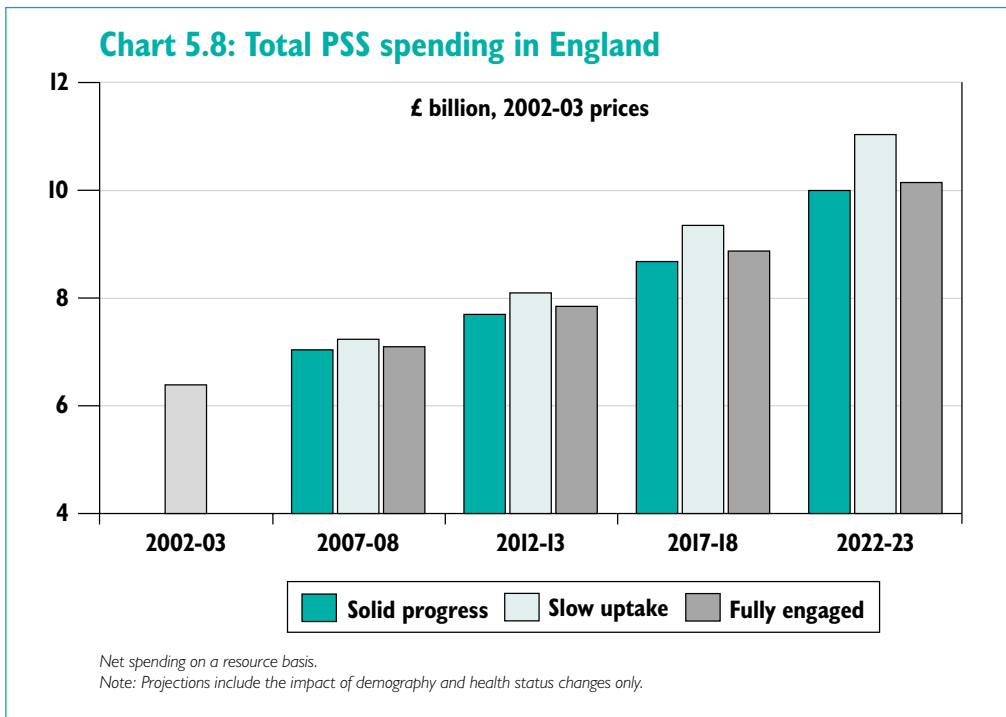
5.58 Health and social care are inextricably linked. There are many interactions between the two sectors. For example, recent increases in the number of older people being admitted to hospital in an emergency partly reflect reductions in the availability of appropriate social care. In planning the delivery of care, health and social care must be considered together in order to ensure that both provide high quality services for the individuals receiving care and make efficient use of resources.

- 5.59 This demonstrates the need for a greater focus in future on ‘whole systems’ modelling to help provide a better understanding of the interactions between health and social care and the implications for the level of resources required. Chapters 6 and 7 and Annex A make observations and recommendations.
- 5.60 While the Review considered it vital to extend its Terms of Reference to begin to consider social care, it has had neither the information nor the resources to be able to develop a whole systems model, nor indeed to build up projections for social care in the same level of detail as for health care. Significantly, the projections make no allowance for the resource needs of delivering higher quality. It is recommended that future reviews of this type should fully integrate modelling and analysis of health and social care. Indeed, it is for consideration whether a more immediate study is needed of the trends affecting social care.
- 5.61 The projections presented in this section, therefore, simply represent core resource requirements for the next 20 years estimated on the basis of the present position adjusted for population changes and changes in the level of ill health. As a result they will under-estimate the additional resources required.
- 5.62 Specifically, they are aggregate projections of net current expenditure on personal social services (PSS) in England. It has not been possible to obtain a comparable baseline level of expenditure for the other countries of the UK<sup>6</sup>. Social care funded by PSS includes activities such as home help, day centre visits and residential and nursing home care. As described in Chapter 1, the Review has excluded spending on children’s and family services; but it has included all PSS spending on the over 65s and on 18-64 year olds receiving care for mental health problems, physical disabilities and learning disabilities. Together the services which are included in the projections constitute around 60 per cent of total PSS expenditure.
- 5.63 The projections for PSS expenditure on older people were produced for the Review by the Personal Social Services Research Unit (PSSRU) at the LSE<sup>7</sup> and then adapted for the Review’s model. The projections for social care for 18-64 year olds use baseline data provided by the Department of Health.
- 5.64 The same three scenarios have been considered as for health care, with their differing assumptions about life expectancy and long-term ill health described in Chapter 3.

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<sup>6</sup> The estimates relate to total spending – as financed by both central and local government.

<sup>7</sup> Details of PSSRU’s methods can be found in Wittenberg R, Pickard L, Comas-Herrera A et al (2001), Demand for long-term care for older people in England to 2031, Health Statistics Quarterly 12, Winter: 5-17. See also <http://www.lse.ac.uk/depts/lsehsc/pssru.htm>



5.65 The projections suggest that, in 2002-03 prices, core PSS spending on services for adults in England will rise from £6.4 billion in 2002-03 to between £10.0 and £11.0 billion in 2022-23 as a result of the impact of demography and health status changes (see Chart 5.8). This represents an average real terms increase of between 2.3 and 2.8 per cent a year over the entire period.

5.66 The projections show that population changes, and in particular the ageing of the population, are a much greater cost pressure for social care than health care.

5.67 Table 5.4 below provides a breakdown of the projected growth in PSS spending. It shows that expenditure grows faster in the *slow uptake* scenario. This pattern is the opposite to what might initially be expected taking into account numbers of people, as the *fully engaged* scenario has the largest number of people aged over 65 and, more significantly, over 85 too.

**Table 5.4: Personal social services (PSS) spending in England**

	Average annual real growth, per cent				
	1999-00 to 2002-03	Projections			
		2003-04 to 2007-08	2008-09 to 2012-13	2013-14 to 2017-18	2018-19 to 2022-23
Solid progress	1.2	2.0	1.8	2.4	2.9
Slow uptake	1.2	2.5	2.3	2.9	3.4
Fully engaged	1.2	2.1	2.0	2.5	2.7

<sup>1</sup> Net spending on a resource basis, converted to real terms using the GDP deflator at market price. Excludes children's and family services.

<sup>2</sup> Projections include the impact of demography and health status changes only.

- 5.68 But the key demand driver of future spending on social care for older people is the assumption around their future health. In *fully engaged*, it is assumed that there will be a reduction in ill health, in *solid progress* age-specific rates of ill health remain constant, and in *slow uptake* age-specific rates of ill health increase by 1 per cent a year. This explains why *slow uptake* has the highest growth rate, despite the smallest number of older people.
- 5.69 The projections show a slower growth rate for social care compared to health care. However, as discussed, they do not include resources for delivering higher quality. They do not take account of:
- the need to stabilise the residential and nursing home markets;
  - quality gaps in existing services;
  - the impact which improved technologies will have, for example, on the balance of care at home; and
  - children's and family services.
- 5.70 Despite this, the Review felt it worthwhile to include this brief assessment of social care because of the vital role it must play in a whole systems approach to care. Under-investment and under-capacity in social care puts pressure on hospital care. Many similar improvements in quality to those assumed for health care are needed for social care. Chapter 6 considers the relationship between the two types of care more fully, while Chapter 7 and Annex A reconfirm the Review's recommendation that more sophisticated analysis and modelling of the relationship is needed.

