

NHS Five Year Forward View

Recap briefing for the Health Select Committee on technical modelling and scenarios

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The NHS Five Year Forward View sets out a vision for the future of the NHS. It was developed by the partner organisations that deliver and oversee health and care services including:

- NHS England*
- NHS Improvement*
- Health Education England (HEE)
- The National Institute for Health and Care Excellence (NICE)
- Public Health England (PHE)
- Care Quality Commission (CQC)

*The National Health Service Commissioning Board was established on 1 October 2012 as an executive non-departmental public body. Since 1 April 2013, the National Health Service Commissioning Board has used the name NHS England for operational purposes.

*NHS Improvement is the operational name for the organisation that brings together Monitor, NHS Trust Development Authority, Patient Safety, the National Reporting and Learning System, the Advancing Change team and the Intensive Support Teams.

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1 Executive summary

At the request of the Health Select Committee, this briefing recaps the modelling undertaken in the lead up to October 2014, when the NHS published the Five Year Forward View (FYFV)¹. The FYFV forecast that the NHS would have a £30bn gap in funding by 2020/21 if current demand trends continued, the NHS received flat real terms funding and no further efficiencies were delivered. The weighted average health care demand growth factored into the model was 2.7-2.8% per annum to 2020/21 based upon a 10 year average.

The subsequent Spending Review (SR) modelling of cost pressures and investments remained broadly in line with the modelling conducted a year earlier, as part of the FYFV, with a total potential unmitigated gap of around £30bn by 2020/21.

Three financial scenarios were modelled in the FYFV incorporating different assumptions for demand, efficiency and funding to reduce the £30bn funding gap.

In the first scenario, the £30bn funding gap was reduced to £21bn by 2020/21. This scenario assumed that the NHS delivered its average long run productivity gain of 0.8% a year.

The second scenario presented a residual funding need of £16bn by 2020/21. This scenario would require that the NHS delivers stronger efficiencies of 1.5% a year.

The final scenario required that the NHS received the transition and operating investment needed to move rapidly to the new care models and ways of working described in the FYFV, which in turn might enable demand and efficiency gains worth 2% rising to 3% net each year.

In November 2015, the Government set out the financial settlement for the NHS to 2020/21. Annual funding will rise by £3.8bn above inflation in 2016/17 and £8.4bn above inflation in 2020/21, which equates to NHS funding growing from £101.0bn in 2015/16 to £119.6bn in 2020/21.

While this implies an efficiency requirement of £22 billion by 2020/21, the majority of these efficiencies are not cost reductions per se, but action to moderate the counterfactual rate of spending growth. Furthermore the SR assumes that around £7 billion of the total will be delivered nationally, leaving only £15 billion to be sourced locally, of which under £9 billion would come from conventional provider productivity. This scenario requires a 2% annual efficiency gain from providers; this was partly based on efficiency work produced by NHS Improvement (formerly Monitor), which concluded that this level of efficiency was stretching but achievable.²

¹ www.england.nhs.uk/wp-content/uploads/2014/10/5yfv-web.pdf

² www.gov.uk/government/uploads/system/uploads/attachment_data/file/499476/Annex_B5_Evidence_on_the_efficiency_factor.pdf

2 Chapter 1: Introduction

In October 2014 the NHS leadership bodies – NHS England, NHS Improvement (formerly Monitor and the NHS Trust Development Authority), Public Health England, Health Education England and the Care Quality Commission – jointly produced the NHS Five Year Forward View (FYFV)³.

The FYFV set out NHS funding scenarios for the period to 2020/21. This technical briefing document summarises the methodology used to derive these scenarios, and describes the subsequent Spending Review (SR) settlement and its efficiency implications. In doing so it answers three questions:

1. How was the so-called 2020 “£30bn funding gap” calculated? (Chapter 2)
2. How were the NHS real terms funding requirements for 2020 estimated at between £8bn and £21bn? (Chapter 3)
3. What does the NHS Spending Review settlement imply for efficiencies (the so-called “£22bn efficiency requirement”) (Chapter 4)

³ www.england.nhs.uk/wp-content/uploads/2014/10/5yfv-web.pdf

3 Chapter 2: How was the “£30 billion” 2020 funding gap derived?

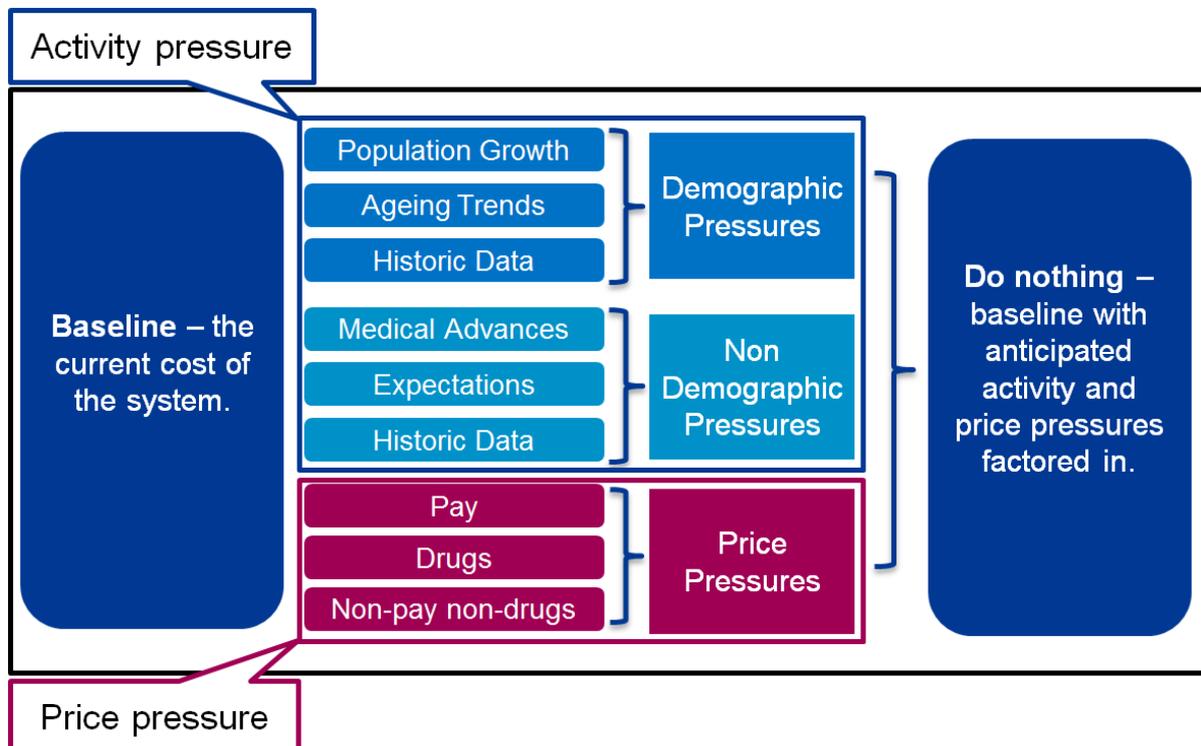
In summary, the “£30 billion” gap is the difference in 2020/21 between trend demand increases on the one hand, and no real increases in funding or efficiency on the other. So the £30 billion gap could be larger or smaller depending on demand, funding or efficiency. In this chapter we describe the methodology used to calculate the “base case” demand growth pressure.

2.1 Modelling methodology

Chart 2.1 presents the map of the financial modelling undertaken. Our modelling focused on the aggregated health expenditure at the following service levels for which we had assessable data and to which we could apply publicly available trends:

- Acute services
- MH services
- Community services
- Continuing Care services
- Prescribing services
- Specialised services
- GP services

Chart 2.1 – Financial modelling map



The financial modelling process was split into three steps.

2.2 Step 1 – Baseline development

A combination of CCG, NHS England and DH planned resource allocations produced the baseline for 2014/15 – £100bn. The baseline included relevant spending by Public Health England and Local Authorities on Public Health and Prevention. The detail of the baseline is presented at Table 2.1.

Table 2.1 – the 2014/15 planned baseline

CCG Service	FY 14/15 £bn	NHS England Service	FY 14/15 £bn	Other	FY 14/15 £bn
Acute Services	35.5	Specialised services	13.9	Public Health England	0.4
MH services	6.7	GP services	6.8	Local Authority	2.8
Community services	6.7	NHS England Primary Care services	4.6		
Continuing Care services	4.0	Secondary dental	0.8		
CCG Primary Care services	9.3	Military & Health and Justice	0.5		
Other Programme services	1.9	NHS England Running Costs	0.6		
CCG Running Costs	1.3	Other Commitments Pressures	1.4		
CCG Reserves & Contingency	0.4	s7a Allocations	1.6		
Better Care Fund	1.1				
Quality Premium	0.2				
Total	67.1	Total	30.2	Total	3.2

2.3 Step 2 – Identifying drivers and projecting pressures

We identified three broad categories of pressures for each service level:

2.3.1 Demographic pressure

The demographic pressure considered the change in the population (disaggregated by age bands and sex) together with the estimates for the mean use of particular services (again disaggregated by age bands and sex). Using ONS population projections and age/cost curves produced by the Nuffield Trust we calculated the demographic pressure for the following categories (please see Table 2.2):

- General and Acute
- Mental Health
- Primary Care (Medical)
- Primary Care Prescribing

Table 2.2 – the demographic pressure base case (as of 2014)

	2015/ 16	2016/ 17	2017/ 18	2018/ 19	2019/ 20	2020/ 21
Acute services	1.3%	1.3%	1.5%	1.5%	1.5%	1.4%
MH services	0.8%	0.9%	0.9%	0.9%	0.9%	0.8%
Community services	1.3%	1.3%	1.5%	1.5%	1.5%	1.4%
Continuing Care services	1.3%	1.3%	1.5%	1.5%	1.5%	1.4%
Prescribing services	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%
Specialised services	1.3%	1.3%	1.5%	1.5%	1.5%	1.4%
GP services	1.1%	1.0%	1.0%	1.1%	1.0%	1.0%

Appendix 1 provides an example of how demographic pressure for acute services in 2015/16 was calculated.

2.3.2 Non-demographic pressure

Non-demographic growth pressures include:

- Increasing expectation and demand for healthcare services,
- Improving access to care,
- Changes in healthcare technology,
- Medical practice,
- Changes in disease profile, etc.

To approximate the non-demographic pressures we used historic activity trends, and from these we removed the effect of demographic pressure in order to calculate a historic non-demographic trend (please see Table 2.3).

Table 2.3 – the unmitigated non-demographic pressure base case (as of 2014)

	2015/ 16	2016/ 17	2017/ 18	2018/ 19	2019/ 20	2020/ 21
Acute services	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
MH services	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Community services	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
Continuing Care services	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Prescribing services	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
Specialised services	3.0%	3.0%	2.8%	2.9%	2.9%	2.9%
GP services	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%

By way of illustration, appendix 1 explains the steps for calculating the non-demographic pressure for acute services in 2015/16.

Based on the demographic and non-demographic assumptions we calculated the total activity pressure (see table 2.4).

Table 2.4 – the unmitigated combined activity pressure base case (as of 2014)

	2015/ 16	2016/ 17	2017/ 18	2018/ 19	2019/ 20	2020/ 21
Acute services	2.4%	2.4%	2.5%	2.5%	2.5%	2.4%
MH services	1.8%	1.9%	1.9%	1.9%	1.9%	1.8%
Community services	3.6%	3.6%	3.7%	3.7%	3.7%	3.6%
Continuing Care services	2.4%	2.4%	2.5%	2.5%	2.5%	2.4%
Prescribing services	4.9%	4.8%	4.8%	4.9%	4.9%	4.9%
Specialised services	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%
GP services	2.1%	2.0%	2.0%	2.1%	2.1%	2.0%

2.3.3 Price pressure

We produced assumptions for the following price pressures:

- Pay
- Drugs
- High cost drugs
- Non-pay non-drugs
- Devices
- Litigation

These were appropriately weighted for each service level in order to produce a weighted price inflation (please see Table 2.5).

Table 2.5 – the unmitigated price pressure base case (as of 2014)

	2015/ 16	2016/ 17	2017/ 18	2018/ 19	2019/ 20	2020/ 21
Acute services	2.3%	3.7%	2.8%	2.8%	2.9%	2.9%
MH services	2.3%	3.7%	2.8%	2.8%	2.9%	2.9%
Community services	2.3%	3.7%	2.8%	2.8%	2.9%	2.9%
Continuing Care services	1.7%	3.6%	2.7%	2.7%	2.7%	2.7%
Prescribing services	1.5%	1.8%	1.7%	1.7%	2.0%	2.0%
Specialised services	2.7%	4.2%	3.6%	3.6%	3.6%	3.7%
GP services	1.7%	4.0%	3.0%	3.0%	3.0%	3.0%

On pay, we used the Office for Budget Responsibility⁴ whole economy average earnings growth, updated for known employer costs changes. Drugs and devices estimates were provided by the Department of Health and NHS England's specialised commissioning units.

2.4 Step 3 – Projecting the 2020 funding “gap”

Considering the historic demand assumptions as a “base case” with an assumption of no real terms funding increases and no additional efficiencies produced a gap equal to c. £30bn in 2020/21.

⁴ <http://budgetresponsibility.org.uk/economic-fiscal-outlook-march-2014/>

4 Chapter 3: How were the NHS funding requirements for 2020 estimated at £8 billion to £21 billion?

The NHS Five year Forward View projected that the NHS could need in the range of £8bn to £21bn real terms growth annually by 2020/21, depending on demand and efficiency assumptions. Specifically it described three potential funding scenarios: £8bn, £16bn and £21bn.

The original text is as follows:

“NHS Five Year Forward View, October 2014

It has previously been calculated by Monitor, separately by NHS England, and also by independent analysts, that a combination of a) growing demand, b) no further annual efficiencies, and c) flat real terms funding could, by 2020/21, produce a mismatch between resources and patient needs of nearly £30 billion a year.

So to sustain a comprehensive high-quality NHS, action will be needed on all three fronts. Less impact on any one of them will require compensating action on the other two.

Demand

On demand, this Forward View makes the case for a more activist prevention and public health agenda: greater support for patients, carers and community organisations; and new models of primary and out-of-hospital care. While the positive effects of these will take some years to show themselves in moderating the rising demands on hospitals, over the medium term the results could be substantial. Their net impact will however also partly depend on the availability of social care services over the next five years.

Efficiency

Over the long run, NHS efficiency gains have been estimated by the Office for Budget Responsibility at around 0.8% net annually. Given the pressures on the public finances and the opportunities in front of us, 0.8% a year will not be adequate, and in recent years the NHS has done more than twice as well as this.

A 1.5% net efficiency increase each year over the next Parliament should be obtainable if the NHS is able to accelerate some of its current efficiency programmes, recognising that some others that have contributed over the past five years will not be indefinitely repeatable. For example as the economy returns to growth, NHS pay will need to stay broadly in line with private sector wages in order to recruit and retain frontline staff.

Our ambition, however, would be for the NHS to achieve 2% net efficiency gains each year for the rest of the decade – possibly increasing to 3% over time. This would represent a strong performance – compared with the NHS' own past, compared with the wider UK economy, and with other countries' health systems. It would require investment in new care models and would be achieved by a combination of "catch up" (as less efficient providers matched the performance of the

best), "frontier shift"(as new and better ways of working of the sort laid out in chapters three and four are achieved by the whole sector), and moderating demand increases which would begin to be realised towards the end of the second half of the five year period (partly as described in chapter two). It would improve the quality and responsiveness of care, meaning patients getting the 'right care, at the right time, in the right setting, from the right caregiver'. The Nuffield Trust for example calculates that doing so could avoid the need for another 17,000 hospital beds – equivalent to opening 34 extra 500-bedded hospitals over the next five years.

Funding

NHS spending has been protected over the past five years, and this has helped sustain services. However, pressures are building. In terms of future funding scenarios, flat real terms NHS spending overall would represent a continuation of current budget protection. Flat real terms NHS spending per person would take account of population growth. Flat NHS spending as a share of GDP would differ from the long term trend in which health spending in industrialised countries tends to rise as a share of national income.

Depending on the combined efficiency and funding option pursued, the effect is to close the £30 billion gap by one third, one half, or all the way.

- In scenario one, the NHS budget remains flat in real terms from 2015/16 to 2020/21, and the NHS delivers its long run productivity gain of 0.8% a year. The combined effect is that the £30 billion gap in 2020/21 is cut by about a third, to £21 billion.
- In scenario two, the NHS budget still remains flat in real terms over the period, but the NHS delivers stronger efficiencies of 1.5% a year. The combined effect is that the £30 billion gap in 2020/21 is halved to £16 billion.
- In scenario three, the NHS gets the needed infrastructure and operating investment to rapidly move to the new care models and ways of working described in this Forward View, which in turn enables demand and efficiency gains worth 2%-3% net each year. Combined with staged funding increases close to 'flat real per person' the £30 billion gap is closed by 2020/21.

Decisions on these options will inevitably need to be taken in the context of how the UK economy overall is performing, during the next Parliament. However, nothing in the analysis above suggests that continuing with a comprehensive tax-funded NHS is intrinsically undoable – instead it suggests that there are viable options for sustaining and improving the NHS over the next five years, provided that the NHS does its part, together with the support of government. The result would be a far better future for the NHS, its patients, its staff and those who support them”.

All these scenarios assumed continued availability of capital investment, an appropriate transformation funding in the years leading to 2020/21. By definition they did not factor in additional costs to the NHS not known about as of October 2014. They were also scenarios for 2020/21 and did not specify the annual progression to 2020/21.

5 Chapter 4: What does the NHS Spending Review settlement imply for needed efficiencies (the so-called “£22 billion efficiency requirement”)?

The Government announced the NHS Spending Review (SR) settlement for the period 2016/17 to 2020/21 as follows:

Table 4.1

Revenue and capital combined	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Total (£ million)	100,500	105,975	109,337	111,824	114,929	119,035
Real terms increase on previous year (%)		3.7%	1.3%	0.3%	0.7%	1.3%
Real terms increase on 2015-16 baseline (£ billion)		3.8	5.3	5.8	6.7	8.4

Note: These figures differ from the NHS TDEL figures announced at SR due to a number of technical adjustments, including transfers of functions. The main transfer of function is the move of 0-5 public health services from NHS England to local government. There are a small number of other transfers including the move of the Leadership Academy to Health Education England. To ensure comparability of numbers, in this table £500 million has been removed from the 2015-16 baseline, representing 6 months of funding for 0-5 public health services between 1 April and 30 September 2015 and these other planned transfers.

NHS England had set out five tests that the NHS would use to assess the outcome of the SR relative to the FYFV. In December 2015, NHS England’s Public Board assessment of the SR settlement was as follows⁵:

“First, our request for a ‘frontloaded’ settlement has been met. £3.8 billion of the overall £8.4bn real terms annual growth will be available to us next year, with an incremental £1.4bn real terms growth added the year after, 2017/18. So three fifths of the extra funding will be available in the first two fifths of the period stretching out to 2020/21.

*Second, the need to **phase any new ‘deliverables’** requested by Government in line with the ‘U’-shaped profile of our extra SR funding over the five years is on track. Today the Government will lay before Parliament its new Mandate to NHS England - and through us, to the NHS as a whole. This sets some specific requests for 2016/17 and a broader set of goals for 2020/21. We will discuss the Mandate at Item 5 of today’s public board meeting, and are reflecting its contents in the NHS Planning Guidance we will be issuing with our partners in the next few days.*

Third, in addition to the available new funding, we argued that the efficiencies needed to provide the NHS with further ‘headroom’ to respond to likely demand could not all come from traditional provider tariff-style efficiency targets. Government, the NHS, and our partners would all need to support a broader range of actions to put the NHS on a sustainable footing. Subsequent to the SR (and indeed subsequent to the writing of the NAO’s report published this week) there is now an

⁵ https://www.england.nhs.uk/wp-content/uploads/2015/12/03.PB_17.12.15-Chief-Executive-Report.pdf

agreed cross-system **efficiency profile**, which will enable NHS England and NHS Improvement to consult on a net tariff efficiency of 2%, as against 3.5%-3.8% this past year.

Fourth, the Forward View called for a radical upgrade in **prevention**, and support for wider public health measures. Given the funding pressures in the local authority financed public health services and the need for wider government action on obesity and related challenges, we cannot yet conclude that this test has been met. Much hinges on whether the Government's proposed childhood obesity strategy comprises an effective package of credible actions when it is published in the New Year. Absent this, and other linked action, the NHS will be exposed to patient demand and consequent funding pressures over and above that modelled in the Five Year Forward View assumptions.

Fifth, the Forward View made the obvious point that the level of patient demand on the NHS is partly a function of the availability of **social care**, particularly for frail older people. The SR makes some welcome moves to hypothecate new funding streams for social care, but the overall funding quantum nationally and the distributional effects across England still imply a widening gap between growing need and available services. If unaddressed this would result in extra demand on GPs, community health services and hospitals over and above the FYFV NHS cost estimates. Our 'fifth test' should therefore be regarded as 'unfinished business'."

In December 2015, the Board of NHS England made the following allocation decisions:

Table 4.2

Summary outputs	15/16	16/17	Budget	17/18	Budget	18/19	Budget	19/20	Budget	20/21	Budget
	Adjusted allocation	proposed allocation	growth	proposed allocation	growth	proposed allocation	growth	proposed allocation	growth	proposed allocation	growth
	£m	£m	%	£m	%	£m	%	£m	%	£m	%
CCGs	69,484	71,842	3.4%	73,352	2.1%	74,898	2.1%	76,543	2.2%	79,441	3.8%
Primary Care (GP)	7,342	7,664	4.4%	7,965	3.9%	8,269	3.8%	8,643	4.5%	9,122	5.5%
Specialised	14,643	15,662	7.0%	16,413	4.8%	17,151	4.5%	17,918	4.5%	18,820	5.0%
Place based commissioning budgets	91,469	95,168	4.0%	97,730	2.7%	100,318	2.6%	103,105	2.8%	107,383	4.1%
Sustainability Fund	0	1,800									
Transformation Fund	200	339	69.5%	2,864	33.9%	2,947	2.9%	3,434	16.5%	3,405	-0.8%
Sustainability and Transformation Fund	200	2,139		2,864	33.9%	2,947	2.9%	3,434	16.5%	3,405	-0.8%
Other direct commissioning	6,684	6,642	-0.6%	6,641	0.0%	6,609	-0.5%	6,526	-1.2%	6,462	-1.0%
NHS England central budgets	1,708	1,637	-4.2%	1,558	-4.8%	1,402	-10.1%	1,310	-6.5%	1,226	-6.5%
Non-recurrent use of Drawdown	300	250	-16.7%	400	60.0%	400	0.0%	400	0.0%	400	0.0%
Total	100,360	105,836	5.5%	109,193	3.2%	111,675	2.3%	114,775	2.8%	118,875	3.6%

Note: The difference between Table 4.2 and Table 4.1 is due to the fact that Table 4.2 excludes capital and includes ring-fenced RDEL funding (depreciation).

Given the likely 2015/16 outturn, in order to support local health economies to transform and for the provider sector to return to financial balance, NHS England established in December 2015 a Sustainability and Transformation (S&T) Fund for each year of the Parliament. The value of the fund in 2016/17 is £2.1bn rising to £3.4bn by 2020/21. Of the £2.1bn of S&T funding in 2016/17, £1.8bn has been allocated for deployment on 'Sustainability' to stabilise NHS operational performance, and £0.3bn for 'Transformation' to continue the Vanguard programme and invest in other key FYFV areas. Plans for the deployment of the S&T Fund beyond 2016/17, including the balance between 'Sustainability' and 'Transformation', will be determined by the Board of NHS England in the light of Sustainability and Transformation Plans being produced by local health economies during 2016, with

arrangements for sustainability funding being developed in partnership with NHS Improvement.

The modelling underpinning the SR assumed that the aggregate recurrent provider deficit in 2015/16 would be £1.8bn. In light of the higher deficit now reported for 2015/16, it will be critical in 2016/17 to bring the provider sector back to the planned position through additional efficiencies in order to remain on track to close the funding gap.

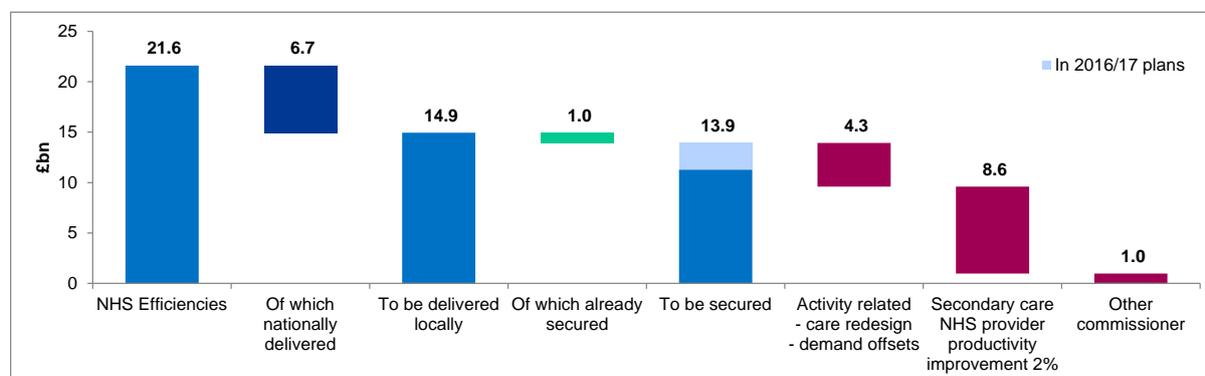
4.1 Required level of efficiencies implied by the NHS Spending Review settlement

The majority of the efficiencies are delivered through interventions which, rather than releasing cash, reduce the level of underlying growth we would have expected to see should the intervention not have taken place. This creates an efficiency against the do-nothing/counterfactual growth rate.

However, there are also savings sources which do release cash, such as NHS England’s central programme and administration cost reductions. Changes which affect the amount of income received have equivalent effect.

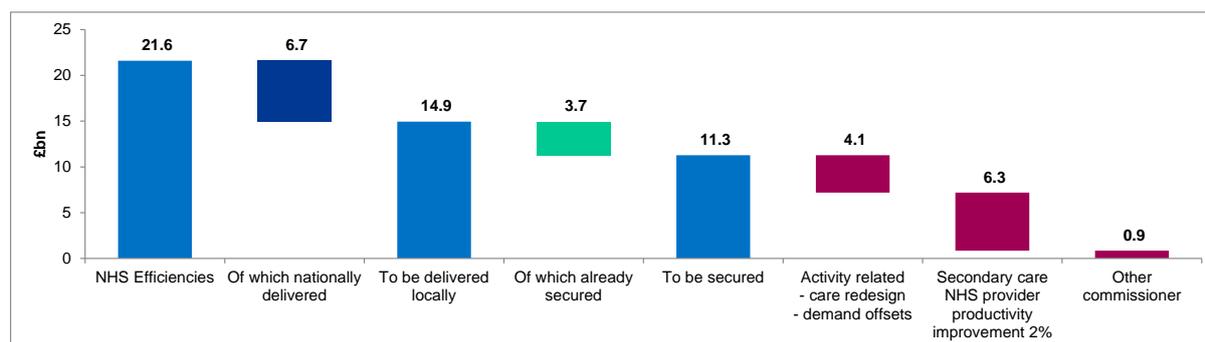
The chart below shows how these savings are split between nationally delivered and locally delivered, along with an assessment of which have already been secured.

Chart 4.1 – Breakdown of the 2020 £22bn efficiency programme going into 2016/17



We should acknowledge that the objective of the 2016/17 operating planning round is to produce plans which contain the savings needed to deliver balance in both commissioning and provider sectors (net of the £1.8bn provider sustainability funding). Assuming successful delivery of the related 2016/17 efficiency requirements, the local efficiencies to be secured for future years reduces to £11bn.

Chart 4.2 – Expected breakdown of the 2020 £22bn efficiency programme remaining after 2016/17



4.2 Nationally delivered

We estimate that £6.7bn of efficiencies against the Forward View counterfactual cost growth could be nationally delivered. These include:

- Implementing the government's 1% public sector pay cap to 2019/20
- Renegotiating the community pharmacy contract with the pharmacy sector, and a variety of other nationally delivered cost efficiencies
- Implementing income generating activities overseen by the Department of Health as agreed in the SR
- Reducing NHS England central budgets and admin costs

This leaves local health economies needing to find around £15bn in efficiencies.

4.3 Efficiencies to be secured by local health economies

We already have line of sight to £1bn of efficiencies from Non-NHS provider contracts and CCG running cost reductions.

Per the SR modelling, this would leave £14bn of efficiencies to find over the period. We expect that these will be delivered through achieving the following:

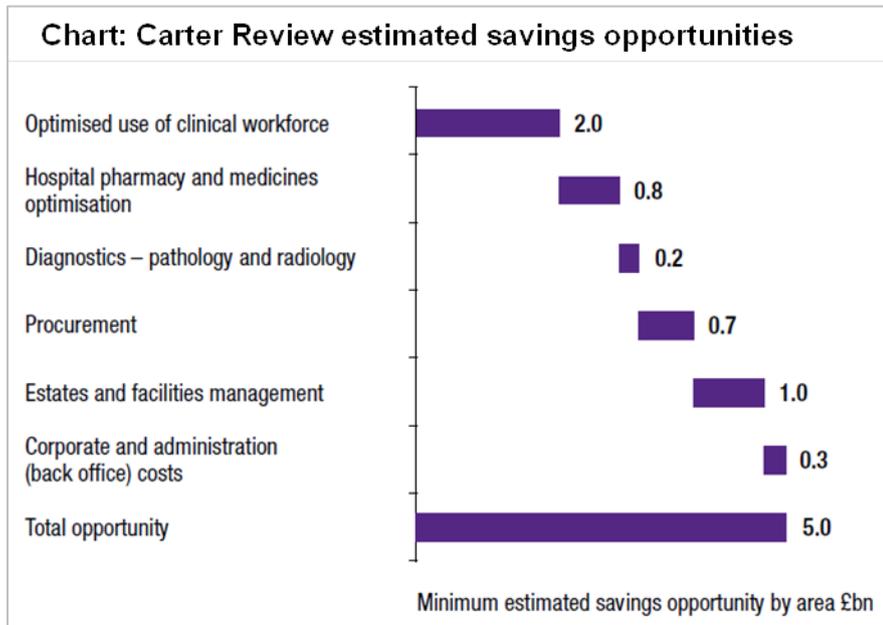
- **Activity** – Moderating the level of activity growth through care redesign, and interventions such as RightCare and Self Care.
- **NHS secondary care provider productivity** – Achieving 2% productivity improvements each year across NHS secondary care providers, delivering £8.6bn in savings.
- **Other efficiencies** – including operational efficiency within other elements of CCG and non-secondary care commissioning.

Provider productivity opportunity

The aggregate underlying provider deficit for 2015/16 was c. £1bn higher than anticipated, creating an additional £1bn efficiency requirement. This higher deficit was in part a product of higher use of agency staff. Therefore as part of plans we are assuming that the NHS can achieve at least a £1.2bn net reduction in agency staff expenditure.

The final report of Lord Carter’s review⁶ concludes that addressing unwarranted variation in use of resources across acute non specialised hospitals could save up to £5bn by 2020/21. The chart below shows the breakdown of the opportunity identified in the review.

Chart 4.3



It should be remembered that Lord Carter’s review only covers acute non- specialist hospitals; further opportunities are expected to be available in community and mental health trusts.

Furthermore, the Carter report effectively only considers “catch-up” by poorer performing trusts to what is already achieved elsewhere. “Frontier shift”, as new technologies and techniques make it possible to deliver more efficiently than today can also make a contribution.

NHS Improvement in its February 2016 publication⁷ set out the empirical basis for a 2% annual provider efficiency requirement in tariff. Its work found:

“There are three questions we must answer to set an appropriate efficiency factor:

- a. How much efficiency has the service as a whole achieved in recent years? We call this trend efficiency.*
- b. How much extra efficiency might be achieved by less efficient trusts catching up with more efficient trusts? We call this variation in efficiency.*
- c. What other information might suggest the future will be different to our prediction?”*

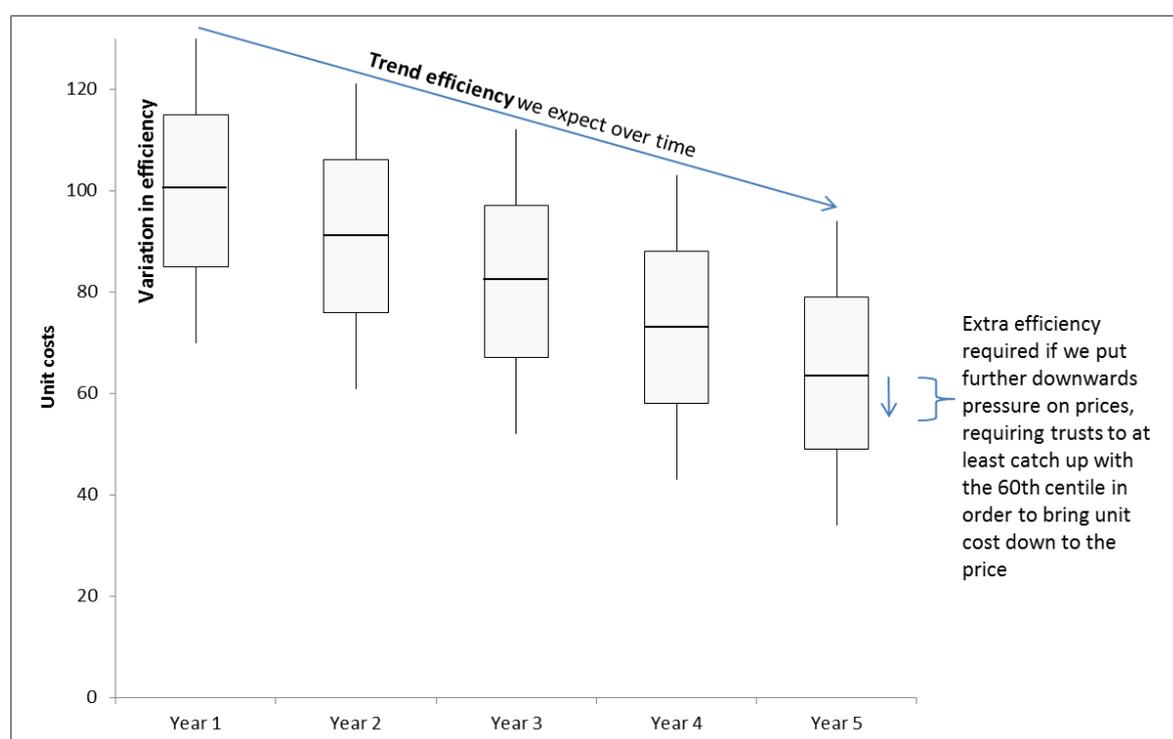
⁶ <https://www.gov.uk/government/publications/productivity-in-nhs-hospitals>

⁷ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/509703/Annex_E_Evidence_on_the_efficiency_factor.pdf

Trend efficiency is the average sector-wide efficiency gain we observe over time. This could arise from new technologies, improved hospital processes or less efficient trusts catching up with more efficient ones. We estimate trend efficiency as a percentage reduction in costs over time that does not vary by trust. Given the importance of achieving value for money in the NHS, we think it reasonable to set an efficiency ask at least at the level of historical trend efficiency.

Variation in efficiency is the range of efficiency performance across trusts. This could arise from differences in take-up of technologies, or differences in hospital processes. We estimate variation in efficiency as a percentage difference in costs from the average trust, which does not change over time but does vary by trust. We use this to inform our understanding of what a reasonable efficiency ask, over and above trend efficiency, would be based on the potential for less efficient trusts to catch up with more efficient trusts.

Figure 1: Trend efficiency and variation in efficiency



The first step in estimating these efficiency concepts is to work out what drives trusts' costs. After controlling for a wide range of factors that drive trusts' costs, we interpret any left over changes in costs over time as trend efficiency and any left over differences in costs between trusts as variation in efficiency. We look at four types of factors that drive trusts' costs:

- **The healthcare that the trust provides.** This includes: casemix-adjusted hospital activity, the degree of specialisation in trusts, and the quality of service based on patient satisfaction.
- **Local drivers of costs that the trust cannot control.** This includes: local disease prevalence, demographics of the patient population, the proportion of emergency admissions, and the market forces factor.

- **Trust type.** This includes: the trust's categorisation (small, teaching, specialist etc) and former Strategic Health Authority (SHA) region.
- **Efficiency.** This includes: trend efficiency and variation in efficiency.

We considered four additional pieces of evidence:

- Previous analysis undertaken for Monitor by Deloitte, which suggested one year savings of between 1% and 1.4% are possible if the average trust were to catch up to better-performing trusts.
- Analysis undertaken by the Centre for Health Economics at the University of York of trust-level productivity, which highlights the consistency in trust productivity rankings between 2010/11 and 2012/13.⁸ Consistent rankings suggest there is not much movement in the variation in efficiency between trusts.
- Health Foundation analysis of trust-level productivity,⁹ which shows very little evidence of less productive trusts catching up with more productive trusts. This suggests that the differences in efficiency between trusts tend not to lead to rapid improvement in less efficient trusts.
- Analysis by Monitor, based on the Centre for Health Economics and Health Foundation methods, which supports the idea that there has not been very much narrowing in the distribution of trust efficiency.

The results of our analysis support a range for the efficiency factor of 1.5% to 2.5%, namely trend efficiency of 1.4% plus catch-up of up to 1.1%.

Given the scale of financial challenge that we face in 2016/17, and the current state of provider finances, we recommend that an efficiency factor in the region of 2% is appropriate."

4.4 Summary

Of the so-called "£22bn efficiency requirement", around £7bn will be delivered nationally, leaving around £15bn to be secured from local efficiencies, of which only £8.6bn relates to provider tariff efficiencies. Furthermore, the majority of these efficiencies are not cost reductions per se but involve slowing the rate of spend and growth.

⁸ Aragon, Castelli, Gaughan (2015) Hospital Trusts Productivity in the English NHS: Uncovering Possible Drivers of Productivity Variations *Centre for Health Economics Research Paper 117*
https://www.york.ac.uk/media/che/documents/papers/researchpapers/CHERP117_hospital_trusts_productivity_English_NHS.pdf

⁹ Lafond, Charlesworth, Roberts (2015) Hospital finances and productivity: in a critical condition? *The Health Foundation* <http://www.health.org.uk/publication/hospital-finances-and-productivity-critical-condition>

Appendix 1: Worked example – Calculating acute services base case pressures

Calculating demographic pressures for acute services

Cost Curve		Population	
5-year age sex bands	General & Acute	2015	2016
m_0_4	59.19	1,766,800	1,772,400
m_5_9	39.29	1,697,500	1,725,100
m_10_14	42.70	1,517,800	1,547,900
m_15_19	41.16	1,636,700	1,608,000
m_20_24	38.67	1,834,200	1,816,400
m_25_29	37.26	1,902,100	1,938,900
m_30_34	38.57	1,854,200	1,867,200
m_35_39	44.70	1,723,200	1,761,600
m_40_44	53.71	1,787,600	1,734,100
m_45_49	66.16	1,910,300	1,900,600
m_50_54	81.78	1,876,000	1,900,600
m_55_59	108.58	1,613,000	1,658,500
m_60_64	143.83	1,417,500	1,428,400
m_65_69	190.22	1,461,200	1,466,700
m_70_74	250.48	1,080,300	1,136,000
m_75_79	321.68	830,900	829,100
m_80_84	394.49	576,200	591,300
m_85+	501.40	463,400	487,600
f_0_4	47.94	1,682,100	1,687,600
f_5_9	33.14	1,619,400	1,644,300
f_10_14	36.71	1,446,400	1,474,000
f_15_19	47.32	1,551,800	1,529,000
f_20_24	49.42	1,763,400	1,739,800
f_25_29	53.51	1,865,400	1,883,700
f_30_34	58.63	1,862,100	1,864,000
f_35_39	68.06	1,727,900	1,768,700
f_40_44	77.98	1,819,900	1,760,800
f_45_49	88.78	1,957,500	1,949,800
f_50_54	104.02	1,919,400	1,949,800
f_55_59	118.85	1,649,700	1,697,900
f_60_64	141.27	1,474,000	1,483,800
f_65_69	177.24	1,547,000	1,554,600
f_70_74	221.62	1,185,100	1,241,300
f_75_79	281.95	973,600	969,600
f_80_84	346.32	758,400	766,300
f_85+	433.86	861,400	884,400
		5,666,082,563	5,742,114,470
Demographic pressure			1.3%

Calculating demographic pressure for acute services 2

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5,666,082,563	=SUMPRODUCT('General&Acute','2015 population')
5,742,114,470	=SUMPRODUCT('General&Acute','2016 population')
1.3%	=(5,742,114,470/5,666,082,563)-1

Calculating the non-demographic unmitigated forecast pressure for acute services in 2015/16

Steps	Comments
Total historical cost weighted activity.	From the total historical cost weighted activity we have removed the effect of demographic pressure in order to compute a historic non-demographic trend - 1.8%.
Project forward acute and specialised non-demographic pressure.	1.8% is a historical average of acute and specialised non-demographic pressure.
Specialised non-demographic pressure.	3.9% is a 12 years average of specialised non-demographic pressure. We then adjust 1.8% to account for the 3.9% pressure.
Acute non-demographic pressure.	1% is the acute non-demographic pressure without the specialised non-demographic pressure.

Appendix 2

2016/17 National Tariff Payment System: A consultation notice

Annex B5: Evidence on efficiency for the 2016/17 national tariff

The background of the image is a complex, abstract pattern of overlapping squares and rectangles in various shades of blue, ranging from light sky blue to deep navy blue. The pattern is dense and creates a sense of depth and movement.

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