Research

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The path to sustainability

Funding projections for the NHS in Wales to 2019/20 and 2030/31

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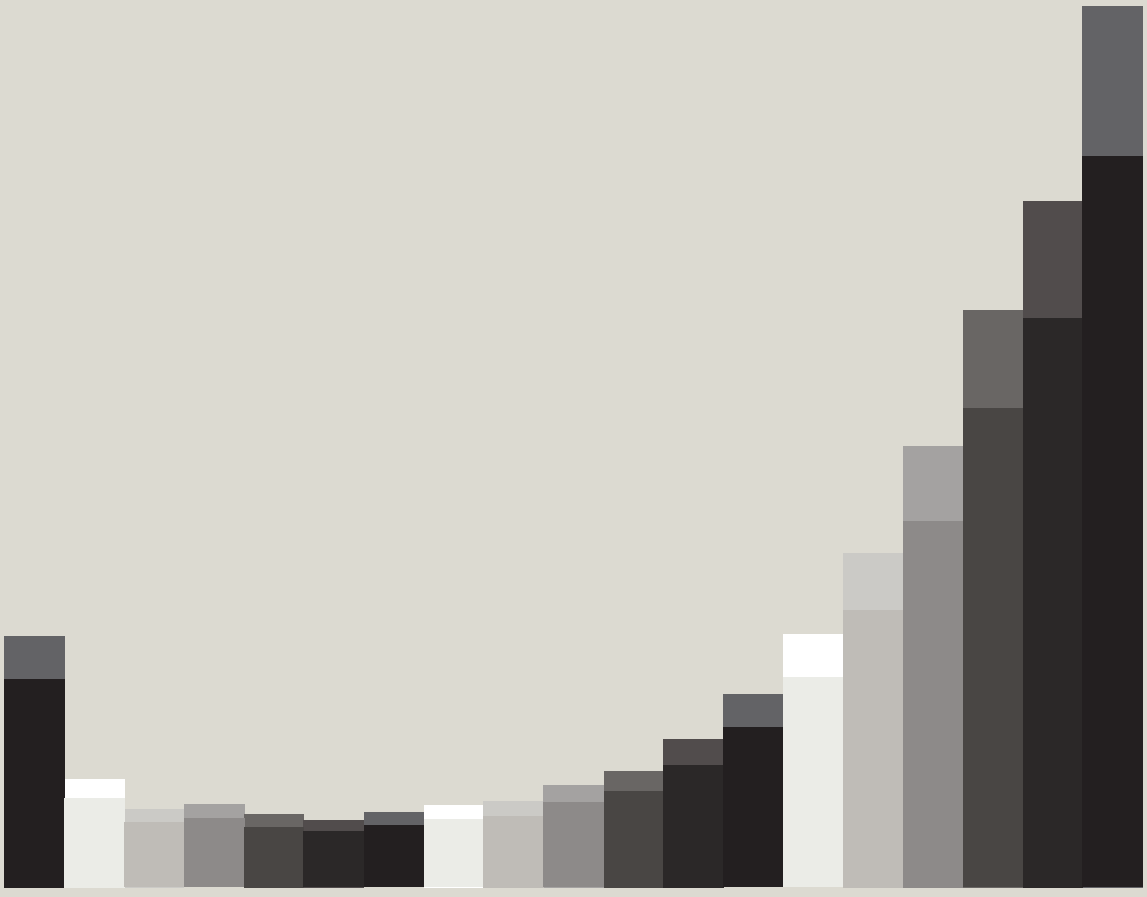

The Health Foundation

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Errors or omissions remain the responsibility of the authors alone.

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Executive summary

How to achieve long-term sustainability of the health care system is a fundamental challenge for all countries. Understanding the pressures facing the NHS in Wales, and the extent to which certain initiatives can reduce them, is essential to help the government set appropriate budgets – and NHS leaders live within them.

In this report we provide long-term projections of spending pressures for the NHS in Wales over the next 15 years (to 2030/31). We then look at the key risks to achieving fiscal sustainability, including the medium-term pressures (to 2019/20), and the potential costs associated with prudent health care – an approach to improve the way in which services are delivered to patients.

Our projections suggest that long-term fiscal sustainability of the NHS in Wales may be achievable, if the funding rises in line with expected economic growth to 2030/31, and the NHS maintains the trend rate for efficiency growth of 1% a year. However, this depends on some key assumptions, and there are steps that must be taken to address risks in the short term to avoid long-term implications.

Key findings

- Without any action to reduce pressures or increase efficiency, NHS spending would need to rise by an average of 3.2% a year in real terms to keep pace with demographic and cost pressures, and rising prevalence of chronic conditions. Maintaining the current range and quality of services would see spending rise from £6.5bn in 2015/16 to £10.4bn in 2030/31 (in 2016/17 prices).
- The NHS in the UK has achieved efficiency growth of an average of 1% a year in real terms since 1997. If the Welsh NHS is able to continue to increase efficiency at this rate then total spending pressures would reduce, requiring an average increase of 2.2% a year to 2030/31 – an extra £2.5bn in 2016/17 prices.
- Over the same period, the UK economy (measured by GDP) is also projected to grow by 2.2% a year.
- Therefore, meeting financial pressures in the long term will require sustained growth in efficiency, and additional funding at least in line with GDP growth. Neither of these are unrealistic assumptions based on historic trends.
- In the short term (up to 2019/20), funding for the NHS is likely to fall as a share of GDP. The budget for the Welsh NHS has not been set beyond 2016/17, but if its funding plans are similar to the NHS in England, the budget would rise by an average of 0.7% a year over this period. This is below projected growth in GDP and pressures facing the service.

- If funding for the Welsh NHS does increase at a similar rate to plans for the English NHS there would be a funding gap of £700m in 2019/20 – more than 10% of this year's budget. Efficiency growth at the historic rate of 1% a year would reduce this to £450m in 2019/20. Further savings are expected from the current UK national pay policy, which would further reduce the gap to £150m.
- To close the funding gap while protecting patient care, the NHS in Wales will need to maintain the current public sector pay deal and achieve additional efficiency growth of 1.5% a year, higher than the current UK trend.
- Beyond funding, fiscal sustainability requires adapting services so they are fit to meet the needs of the future population. Based on estimates from clinical experts, adoption of prudent health care principles would not increase the total cost pressures for the NHS.
- Sustainability of the NHS in Wales is dependent on the quality and motivation of its workforce. A strong focus on workforce policy will be needed to manage the implications of the current pay restraint, and ensure that that the right people have the right skills to deliver services in the future.
- Sustainability of the NHS is intertwined with sustainability of other public services, crucially social care. Pressures for adult social care are projected to rise faster than for the NHS, by an average of 4.1% a year. With funding unlikely to rise at the same rate, there is a real risk that the level of unmet need for care services could rise in Wales.
- Our projections are based on maintaining the current range and quality of services to meet future pressures, without any major advances in quality or technology. Any additional improvement would require investment above the levels projected.
- The level of funding available for the Welsh NHS in the long-term will depend in part on the level of economic growth achieved across the UK. If the recent decision by the UK to leave the EU has a negative effect on economic growth, as predicted by most economists, this may lead to a reduction in the total budget for the Welsh NHS in 2030/31 and increase the challenge of achieving a sustainable NHS.
- Our modelling suggests achieving a fiscally sustainable NHS in Wales in the long term is realistic. However, steps must be taken by NHS leaders, supported by government, to address key risks that threaten to lead to increased pressures in the long term. These steps are described in the table overleaf.

Steps required for a sustainable NHS in Wales

Steps to sustainability	Rationale
Maintaining historic growth in efficiency of 1% a year to 2030/31	Maintaining efficiency growth of 1% a year would reduce total cost pressures from an average of 3.2% a year to 2.2% a year in real terms between 2019/20 and 2030/31. This is similar to expected GDP growth for this period.
Maintaining funding for the Welsh NHS as a share of UK GDP to 2030/31	Even with efficiency growth of 1% a year, the NHS in Wales will still need additional investment. But this would not require it to rise above projected GDP growth, so may not need to take a greater share of the Welsh government's total budget over the long term.
Managing financial pressures to 2019/20	Funding for the Welsh NHS is likely to fall as a share of GDP up to 2019/20 as the UK government's priority is to reduce the national fiscal deficit. If the budget rises in line with plans for the English NHS (an average of 0.7% a year) there would be a funding gap of up to £700m by 2019/20. Closing this will require a combination of managing the national pay policy and additional efficiency growth of 1.5% a year, higher than the trend rate of 1% a year.
Improving services to make them fit for the needs of the future population, including adoption of prudent health care	Prudent health care is an approach by the Welsh NHS to improve the way in which services are delivered to patients. Although the aim of prudent health care is not to reduce costs pressures, it has clear implications on our financial projections. Our analysis suggests that, while prudent health care is unlikely to have a major impact on the total funding gap for the Welsh NHS in 2019/20, it may change the trends in demand for different services. If prudent health care improves the way that care is provided for patients, and therefore improves value for money, it represents a major step towards ensuring sustainable services that are fit for the population.
Developing a strong workforce policy that ensures adequate numbers of high quality and motivated staff	The NHS's employees are its most crucial asset, and account for the majority of spending. A large portion of the potential savings we have modelled over the next few years comes from the UK national pay policy, which sets an upper limit of a 1% annual increase in cash terms. However, this assumes that there is no impact on morale, recruitment and retention of staff, from what would be nearly a decade of no real-terms pay increases. Implementing the changes required for prudent health care and achieving necessary efficiency growth will require an engaged workforce with time and space to learn and develop new ways of working collaboratively. Strong policy to support and motivate the NHS workforce is crucial to achieving long-term sustainability.

Steps to sustainability	Rationale
Making realistic assumptions on the improvements in quality that can be delivered under different budgets	Our projection for required funding growth of 2.2% a year is lower than the average increase of 3.7% a year since 1948. It is based on maintaining the current range and quality of services to meet future pressures and expectations, with some improvements possible, such as through the adoption of the prudent health care principles. We have not included any major advances in quality or technology. If large scale improvements are desired then investment would be required above our projections. Based on analysis of the UK NHS by the OBR, we estimate that advancement in technology could add an extra 0.7% a year to spending pressures. With 1.0% efficiency growth, this would require spending increase of closer to 2.9% a year.
Managing demand for acute care, including investment in prevention	Action will be required to reduce trends in acute care through prevention of chronic conditions and better treatment of them and their associated morbidity out of hospital. In addition, there may be changes in thresholds for appropriate treatment following the adoption of prudent health care principles as clinicians aim to 'do only what is needed'.
Taking action to protect other public services, crucially social care	The demand for NHS services cannot be isolated from the quality of other public services, and one of the greatest interdependencies is for social care. Pressures on publicly funded adult social care in Wales are projected to rise by around 4.1% a year in real terms, using estimates from the London School of Economics and Political Science (LSE). Fully funding these pressures would require an extra £1.0bn by 2030/31, rising to £2.3bn from £1.3bn in 2015/16. The steps taken by the NHS to support and work with other services, and by government to adequately resource them, will have implications for the long-term sustainability of the NHS.
Managing the implications of the UK leaving the EU	The full implications of the UK leaving the EU are highly uncertain. One possibility is that it may lead to lower economic growth, resulting in lower tax receipts and therefore less funding for public services, including the NHS. This could see the budget for the Welsh NHS fall by between £150m and £350m in 2019/20, and between £120m and £650m in 2030/31, compared to projected before the referendum. Avoiding this impact on the NHS budget would require higher taxation, greater reduction for other areas of public spending, or the government delaying achieving balance of the national budget and extending the period of austerity. There is also a potential impact on staffing. Six per cent of staff in the Welsh NHS are from the EU, and any change in their eligibility to work in the UK could have a major impact on staffing levels in all services.

1. Introduction

How to achieve long-term sustainability of the health care system is a fundamental challenge in all countries. In 2006 the Council of the European Union issued a statement on common values and principles for EU health systems. These were: universal coverage, solidarity in financing, equity of access and the provision of high quality care.[1] Following the global recession in 2008, the challenge facing all health systems in the EU is to ensure fiscal stability without undermining these core values. As the UK looks to leave the EU, these core values are still likely to be important for the future of the NHS.

In Wales, the health and social services budget accounts for 48% of the total devolved budget of the Welsh government. Understanding the pressures facing the NHS in Wales, and the extent to which certain initiatives can reduce them, is essential for the government to set appropriate budgets – and for NHS leaders to plan a way to live within them. Striking the right balance between meeting immediate needs and ensuring services are designed for the future population is always difficult, and considering the long-term picture is particularly challenging in periods of austerity.

The NHS in Wales is currently in the most financially challenging period in its history. Since 2010 the UK NHS has seen its lowest ever growth in funding, rising by an average of 0.6% a year between 2010/11 and 2015/16, in real terms. This is a far cry from the average increase of 6% a year that the UK NHS received between 1997/98 and 2010/11,[2] as part of the wider national objective to set UK health spending at a similar level to that of other countries across the EU. However, the economic downturn in 2008 and national policy of fiscal consolidation has halted this trend, resulting in much lower increases in recent years.

At the same time, demand and cost pressures for the NHS are rising every year. These are nothing new. As the population grows and ages, people's expectations of care and the prevalence of certain conditions rise, and the cost of providing care increases. A 2014 report by the Nuffield Trust estimated that pressures in Wales were rising by around 3.2% each year, before accounting for any efficiency growth.[3]

With pressures on the NHS rising faster than its budget, providers have had to make substantial savings in order to protect the range and quality of services provided to patients. The report estimated that, at the rate at which the NHS in Wales was achieving efficiency savings, there would still be a small funding gap of around £200m in 2015/16.[3] The Welsh government responded to this by providing additional funding so that the gap would be closed, provided the NHS was able to maintain the rate of savings.

Alongside the additional investment, the process for planning was changed following the National Health Service Finance (Wales) Act 2014.[4] This means that health boards can make plans for three-year periods instead of one. The aim is that the extra flexibility from service planning, workforce and financial decisions over a longer period will lead to better decision making, and reduce the incentive for short-term decisions near year-end that may be detrimental to long-term interests.[5] All plans must be approved by Welsh Ministers.

Box 1: NHS providers in Wales

NHS services in Wales are provided by seven local health boards (LHBs) and three NHS trusts. Each of the LHBs are responsible for providing health care services for a specific region of Wales. The LHBs are:

- Abertawe Bro Morgannwg University Health Board
- Aneurin Bevan University Health Board
- Betsi Cadwaladr University Health Board
- Cardiff & Vale University Health Board
- Cwm Taf University Health Board
- Hywel Dda University Health Board
- Powys Teaching Health Board.

Public Health Wales NHS Trust, Velindre NHS Trust and Welsh Ambulance Service NHS Trust are responsible for providing public health, specialist and ambulance services, respectively, for the whole of Wales.

Despite these additional funds and planning changes, signs of pressure are beginning to show. The NHS in Wales overspent its budget by £50m in 2015/16,* following a net deficit across the seven LHBs.[6] Five LHBs managed a net surplus in the year, totalling £0.4m, but this was not large enough to cover the net deficit of £50.7m of the other two,† neither of which have approved Integrated Medium Term Plans (IMTP) by the end of the year. Betsi Cadwaladr University Health Board was placed into special measures in June 2015, while three other LHBs were subject to enhanced monitoring.‡

Each of the three NHS trusts achieved a surplus in 2015/16, totalling £106k. However, despite a surplus of £49k, the Welsh Ambulance Service NHS Trust has been placed in enhanced monitoring for not having an approved IMTP in place for 2015/16–2017/18.

The future funding settlement for the NHS in Wales beyond 2016/17 is not yet known, but it seems unlikely that substantial funding increases will be available in the near future. The need for further efficiencies is therefore likely, at least in the short-to-medium term, which is likely to be extremely challenging. Understanding the scale of the challenge is a crucial first step towards developing a plan for how to meet it.

But too much focus on meeting the current financial challenge can have major implications on the long-term sustainability of health care services. The problem of growing demand on the health service is ever-present, and the types of services required in 15 years will be markedly different to those existing today. As the Welsh government sets the budget for

* While the NHS had a deficit for 2015/16, the health and social services group departmental expenditure limit (DEL) was in a slight surplus, after accounting for consolidated funding, residual central budgets savings and uncommitted budgets.

† £19.5m for Betsi Cadwaladr University Health Board and £31.2m Hywel Dda University Health Board.

‡ Abertawe Bro Morgannwg University Health Board, Cardiff & Vale University Health Board and Hywel Dda University Health Board were all subject to enhanced monitoring.

the NHS in the coming years it will be vital to consider the scale of the rising pressures, and the potential to improve quality and reduce costs by investing in reconfiguration that can establish new services, while maintaining and improving existing ones as appropriate.

In this report we build upon previous analysis[3] to produce new estimates for the rising pressures facing the NHS in Wales, the likely budget available and the resultant funding gap. We explore the potential impact of adopting prudent health care principles, and the feasibility of closing the funding gap through national policy and improved efficiency. Our aim is to understand what is required for long-term sustainability of the health system, while also considering the short- to medium-term financial challenges.

All figures are quoted in 2016/17 prices, using the June 2016 GDP deflator,[7] unless otherwise stated.

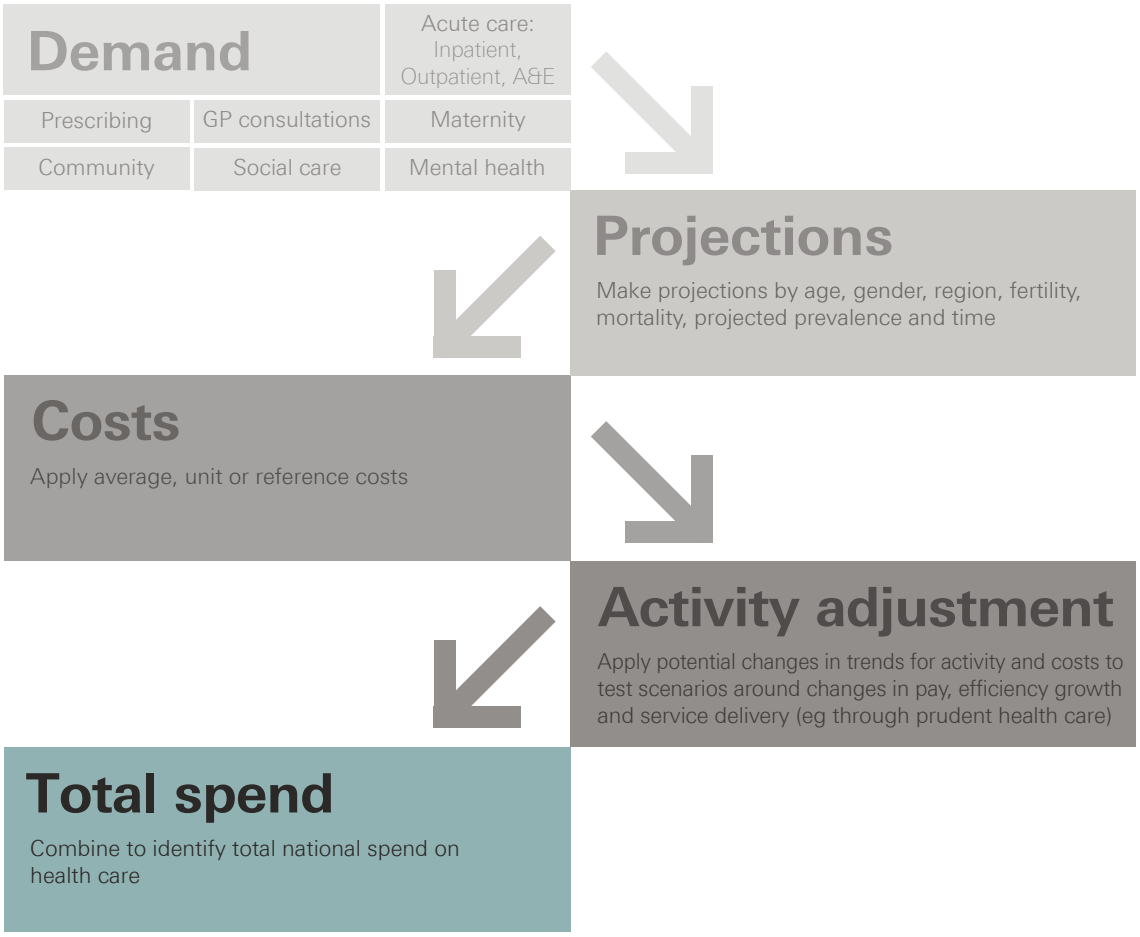
2. Methods

The methods used for our analysis are explained in detail in the accompanying technical appendix.* We have included a short summary here covering the key points.

The NHS in Wales provides a wide range of services for the population, which all face differing patterns of demand. To reflect this we have modelled services separately, including inpatient (separated into emergency, elective and day case), outpatient, A&E, community care and prescribing, mental health services, and primary care. We also provide an estimate of projected pressures for adult social care. This allows for greater flexibility for testing scenarios around how patterns of service provision might change.

Our approach can be split into five steps, as shown in Figure 1.

Figure 1: Steps for producing total NHS spending projection



* See www.health.org.uk/publication/path-sustainability. A Welsh translation of the technical appendix is available on request.

The approach involves the following steps:

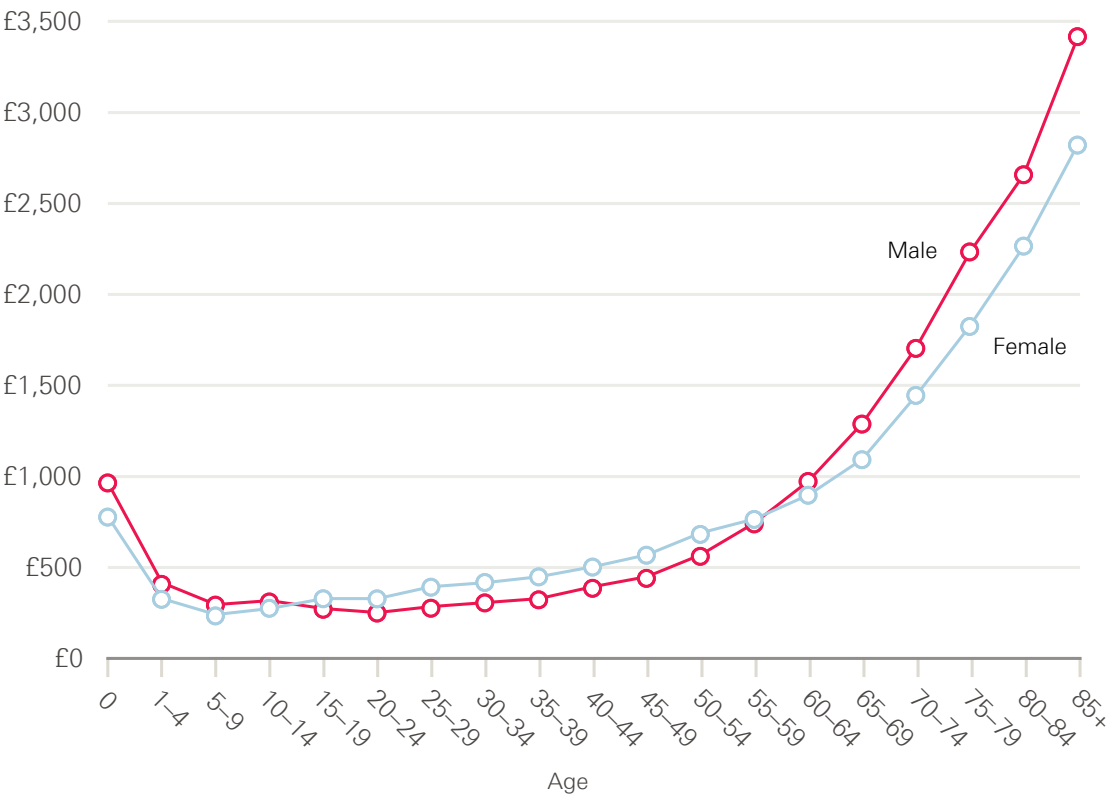
- **Step 1 (Demand):** Model the factors associated with current health service use, based on the most recent available data. The complexity and accuracy of the model depends on the quality of the data, varying from complex person-level models for acute care, to high-level total cost models for community care. For adult social care we have used the demand pressures model for England from the London School of Economics,[8] adapted to the Welsh population.
- **Step 2 (Projections):** Use the results of step 1 to create projections for key factors (including population growth and ageing, mortality, fertility and proportion of the population with chronic conditions who will have hospital admissions) to estimate future demand for services. We have not specifically modelled the cost of new technology due to data limitations, but we have assumed some increase due to rising expectations of admissions for people with chronic conditions and trends for community pharmacy.
- **Step 3 (Costs):** Calculate required spending using unit costs, and length of stay for acute care, based on 2014/15 prices and data and adjusting them to reflect the potential real-terms growth in health service pay rates.
- **Step 4 (Activity adjustment):** Apply potential changes in trends for activity and costs to test scenarios around changes in pay, efficiency growth and service delivery (eg through prudent health care).
- **Step 5 (Total spend):** Aggregate service projections and adjust for services not modelled to create an estimate of the total spending pressures for the NHS in Wales.

Drivers of health care spending pressures

A growing and ageing population

A growing and ageing population is the most obvious contributor to rising pressures for NHS services. We project that demographic changes alone would increase spending pressures on acute services by 1.3% a year in real terms – around a third of total modelled pressures. The likelihood of a person needing hospital services, and therefore the associated spending, rises as they age (Figure 2). So a population with an older age profile will have higher costs than a population of the same size with a younger age profile. The total population of Wales is predicted to grow by 5.6% between 2015 and 2030, an average of 0.4% a year.[*,9] However, the age profile will become older, with the number of people aged 65 and over predicted to grow by 28.5% over this period.

Figure 2: Cost of acute care in Wales
Average annual cost by age and sex, 2014/15



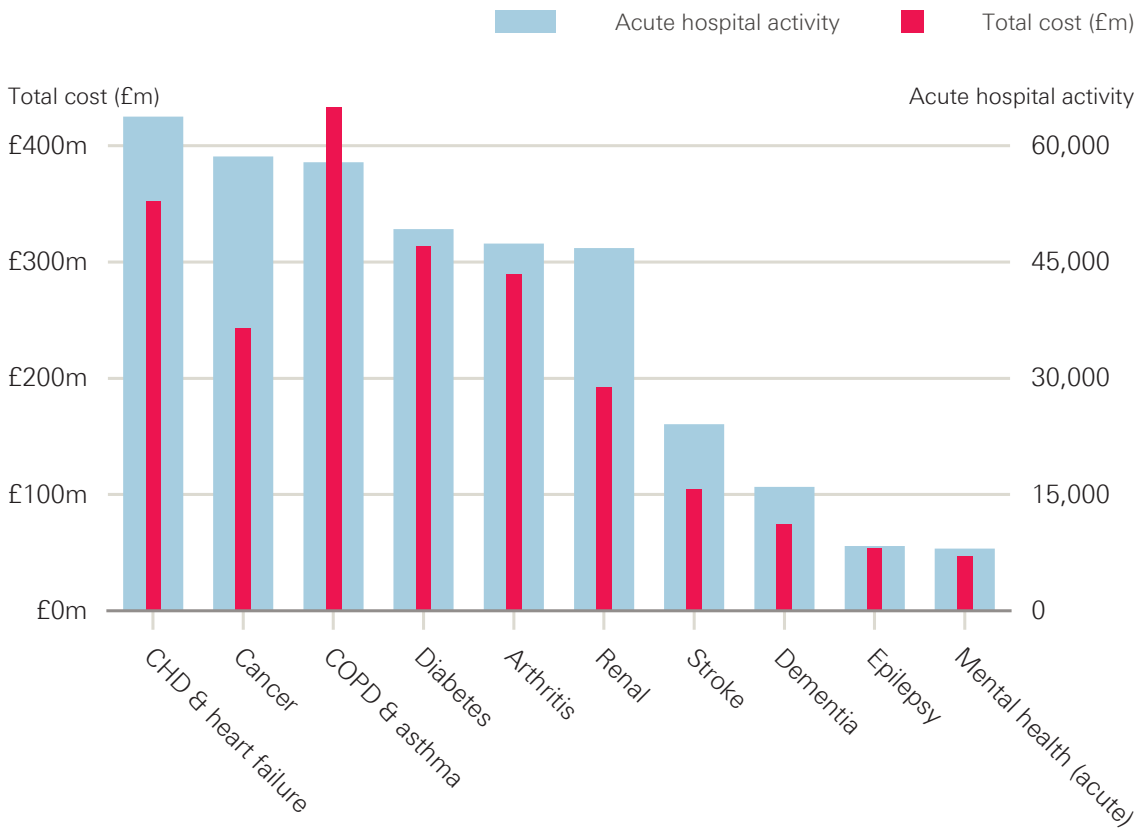
Source: ONS

* This is the lowest projected increase for the UK. Total UK population is project to grow by an average of 0.6% a year between 2015 and 2030. The population of England is projected to grow by an average of 0.7% a year, 0.3% for Scotland, and 0.5% for Northern Ireland. We use population projections provided by the Welsh government rather than the ONS as they are available by LHB. The ONS estimate for Wales is slightly lower at 0.3% a year.

Increases in chronic conditions

Another major cause of rising costs is the increasing prevalence of chronic conditions. We identified hospital admissions for people with at least one of 12 chronic conditions, which in total accounted for 58% of total inpatient spend in 2014/15, or 72% for those aged 50 and over. The biggest areas of spending are admissions of people with coronary heart disease (CHD) or heart failure, chronic obstructive pulmonary disease (COPD) or asthma, and cancer (Figure 3).

Figure 3: Cost of admissions for chronic conditions
Total cost of inpatient admissions for people with chronic conditions in 2014/15



Note: data include admissions for people with chronic conditions, not necessarily treatment specifically for those conditions.

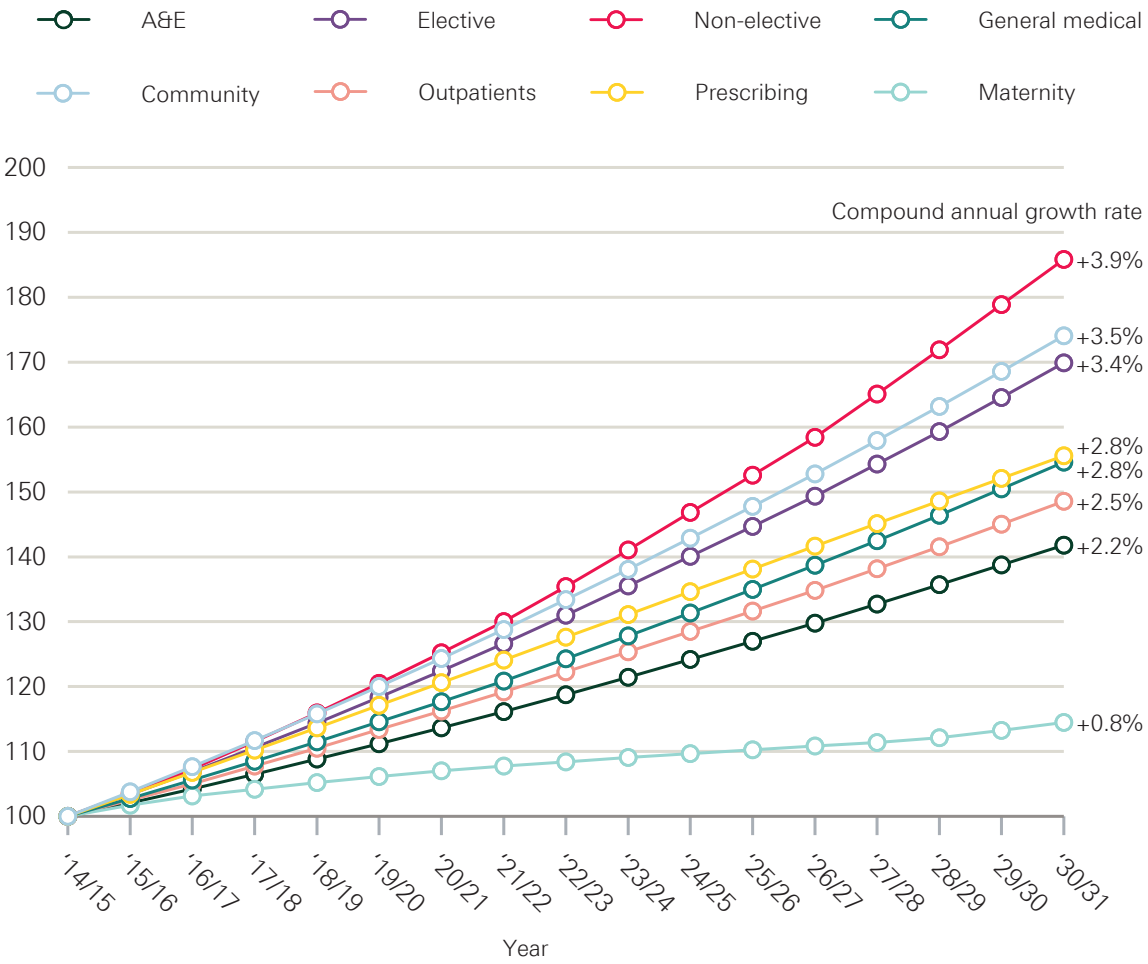
The number of admissions related to these conditions rises every year, in part due to the ageing of the population, as the likelihood of living with a chronic condition rises with age. However, there is also rising likelihood of hospital admissions with chronic conditions within age groups. For example, the proportion of women over 50 years old having an admission related to diabetes has risen from 1.1% to 1.3% between 2004/05 and 2014/15.

To estimate the future pressures from admissions for people with chronic conditions, we modelled the trend growth of chronic condition-related admissions by age, sex and condition, between 2004/05 and 2014/15. We then assume these trends will continue to 2030/31.

While spending pressures are projected to grow for all services, the projected rate of growth varies by the type of service (Figure 4). We estimate that spend of non-elective admissions would see the greatest increase (3.9% a year), as costs are more concentrated among the elderly population (which is expected to have the highest rate of growth). Meanwhile, maternity costs are expected to grow at a lower rate of 0.8% a year.*

Our projections are based on meeting the demand pressures facing the NHS. The true level of spend will also depend on the extent of supplier-induced demand, whereby the use of services rises or falls due their availability.[10] If the level of supply rises faster or slower than our projected rise in demand, this could increase or decrease demand pressures respectively.

Figure 4: Spending on different treatment areas
Index of spending projections for individual treatment areas, as a result of rising activity and unit costs. 2015/16 = 100



* The ONS is currently projecting a fall in the birth rate in the period 2014/15–2030/31 of 0.6% per year, from 37,000 in 2015 to 33,000 in 2030.

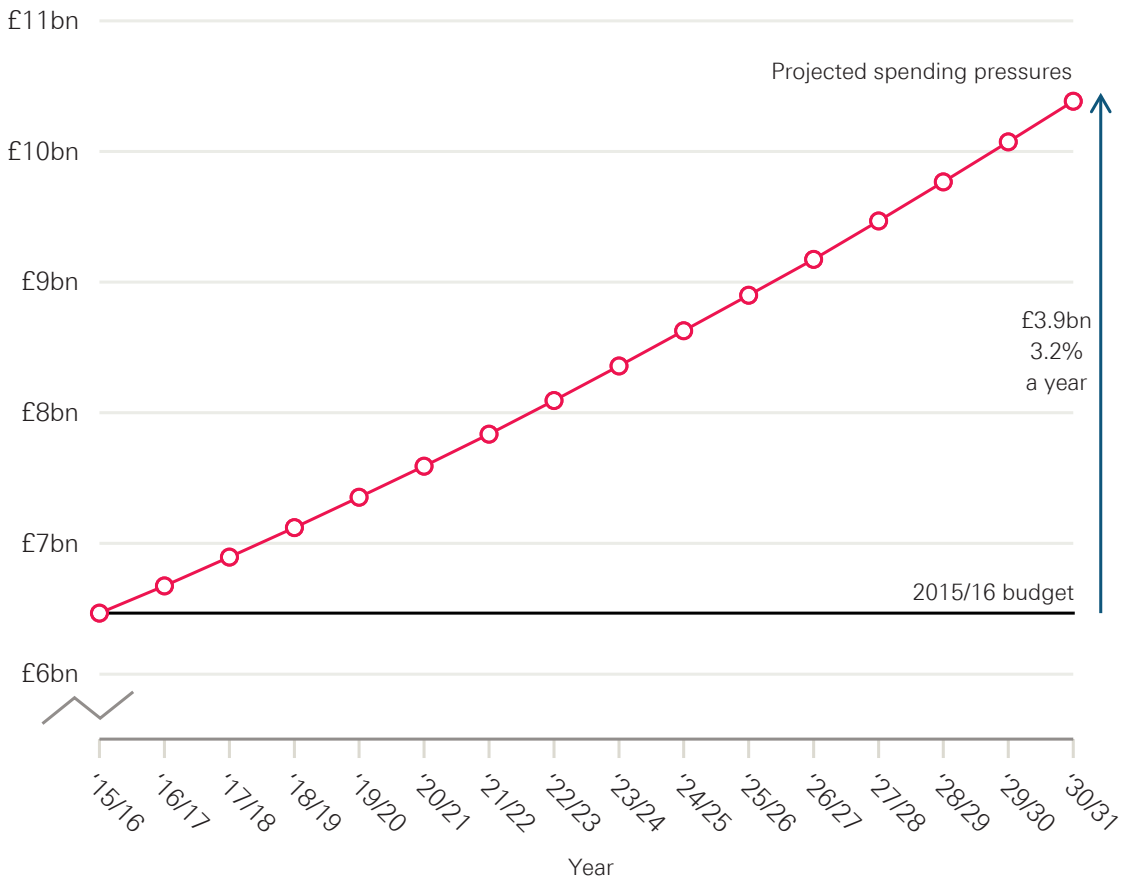
Social care

We estimate that pressures for adult social care services would rise by an average of 4.1% a year in real terms. This is based on modelling by the London School of Economics,[8] adapted to the Welsh population. Decisions made over the level of investment in social care in Wales will have implications for the spending pressures on the NHS, although further research is required to understand the true extent of this relationship.

3. The long-term fiscal sustainability of the Welsh NHS

Combining the projections for all services shows that total spending pressures on NHS services in Wales will grow by an average 3.2% a year in real terms between 2015/16 and 2030/31, if no efficiency growth is achieved during this period (Figure 5). Fully funding these pressures would require the budget for the Welsh NHS to rise by £3.9bn, from £6.5bn in 2015/16, to £10.4bn in 2030/31.

Figure 5: Projected spending pressures to 2030/31



This assumes that there is no improvement in the efficiency with which services are provided by the NHS, which has not been the case historically. Although the current rate of efficiency growth for the Welsh NHS is not separately identified, across the UK quality adjusted productivity in the NHS rose by an average of 0.9% a year between 1997 and 2013.[11] Extending this further by combining different estimates, the Office for Budget Responsibility (OBR) calculate that NHS productivity rose by an average of 1.2% a year

between 1979 and 2013.[12] Based on these, we have used 1.0% efficiency growth year as a realistic assumption for our projections. If the Welsh NHS can maintain this level over the next 15 years, total pressures would rise by around 2.2% a year, which would require additional real-terms funding of £2.5bn by 2030/31.

Flat real-terms funding for health care is unlikely over such a long period. Internationally, as a country's national income grows so does the amount they choose to spend on health care. The income elasticity of health across the EU is broadly between 0.8 and 1.0,* after accounting for demographics. We have therefore assumed that funding might rise in line with expected UK national income (GDP). The latest estimates project that UK output will grow by 2.2% a year in real terms from 2020.†,7 This is similar to the rate that pressures on the Welsh NHS are projected to grow, assuming historic growth in efficiency.

Therefore, if the Welsh NHS achieves efficiency growth in line with the trend rate of 1% a year, the budget would only need to rise in line with GDP to meet projected spending pressures.

This suggests that the long-term outlook for the fiscal sustainability of the Welsh NHS is promising. With modest growth in funding, achieving a sustainable NHS in the long term requires the NHS to maintain trend growth in efficiency.

However, a drop in efficiency, or a lower funding settlement,‡ would result in a funding gap. For example, if no efficiency growth is achieved over this period, then funding in line with projected GDP would result in a funding gap of £1.4bn in 2030/31. Alternatively, if the NHS did achieve 1% efficiency growth each year, but did not receive any real-terms growth in the budget, the remaining funding gap would be £2.5bn. The goal therefore is to ensure efficiency growth can be sustained, while ensuring that health funding can at least maintain share of GDP over the long term.

The projection for required funding of 2.2% a year is lower than the historic average increase of 3.7% a year since 1948. This is because it is based on maintaining the current range and quality of services to meet future pressures and expectations. If dramatic improvements in quality were required, as was the case between 2000 and 2010, these would need additional funding above our projections. This is discussed further in Section 5.

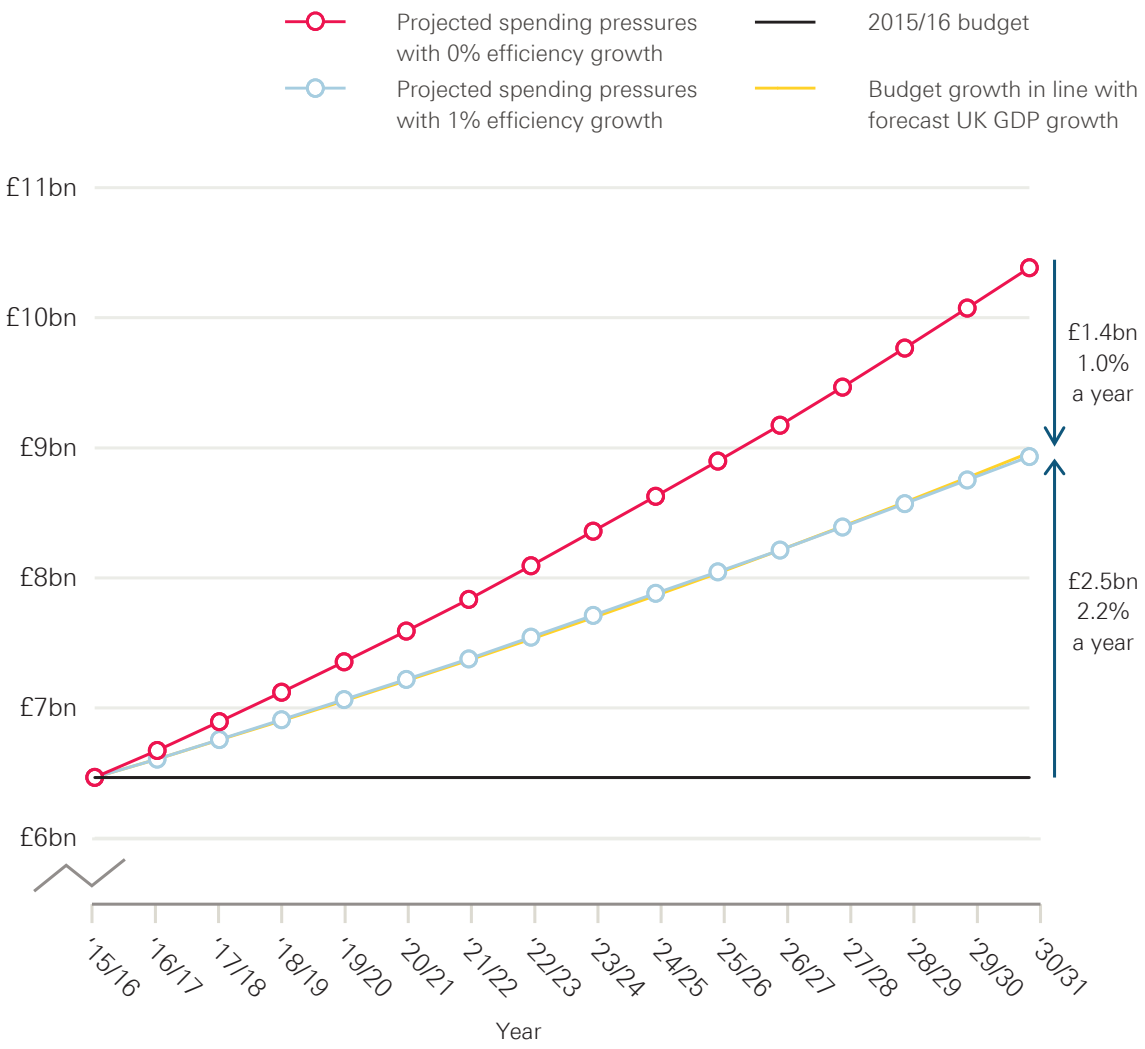
While the projections for long-term sustainability are positive, the NHS faces substantial financial pressures over the medium term.

* Income elasticity of health describes the effect that a change in GDP has on national-level demand for health care. A figure of 1 assumes that as the UK national income (GDP) rises, society will prioritise improvements in health care in line with that growing wealth, even if this exceeds changing population needs.

† These predate the June referendum on the UK's membership of the EU. Updates accounting for the decision to leave the EU are not available at time of publication.

‡ Either due to lower economic growth than predicted, or funding falling as a share of GDP.

Figure 6: Efficiency growth of 1% and budget rising with GDP
Funding pressures for the NHS in Wales with 1% efficiency growth and budget rising in line with GDP to 2030/31



4. The financial challenge to 2019/20

The NHS in Wales is currently in the most financially challenging period in its history. Rather than seeing funding rise in line with historic funding increases (around 3.7% a year in real terms), funding has risen by an average of 0.1% a year between 2011/12 and 2015/16. The Welsh NHS exceeded its total budget in 2015/16, with pressures showing for local health boards (LHBs), which had a total overspend of more than £50m.

Spending plans for the Welsh government are not yet set beyond 2016/17, but the total budget available is predominantly determined by the Barnett formula* based on spending plans for the UK and England. These plans have been published for the period to 2019/20,†,[13] resulting in a likely 3.2% real-terms reduction in the Welsh government's overall resource budget between 2016/17 and 2019/20.‡,[14] This reduction would not be spread evenly across the period, with a 0.3% reduction in 2017/18, 1.4% in 2018/19 and 1.6% in 2019/20.

How these reductions are distributed across the devolved departments in Wales will be determined by the budget on 18 October 2016. Sharing reductions across all services would require reductions in the NHS budget. However, it is likely that the NHS budget will be protected, as it has been in England and in recent years in Wales. The Institute of Fiscal Studies (IFS) estimates that this would require an average reduction in other devolved services of 7.4% by 2019/20. It also estimates that increases of 2% a year for the NHS would involve average reductions of 18% for other devolved services over the next three years.[14] It is possible that reductions to spending on other services of this magnitude may lead to rising unmet need, which may put further pressure on NHS services, as discussed later.

For this report we have assumed that the NHS budget in Wales will continue to be ring-fenced, as it has been in England. If the Welsh NHS budget were to rise in line with the health-specific Barnett consequential[15] this would see it grow from £6.5bn in 2015/16 to £6.6bn in 2019/20, in 2016/17 prices (Table 1). This is an average increase of just 0.7% a year – substantially lower than the 2.2% growth in budget assumed over the longer term to 2030/31, as discussed in Section 3.

* The Barnett formula is used to calculate allocations for the devolved governments of Northern Ireland, Scotland and Wales. It is based on the change in planned spending for English public services, the comparability percentage (the proportion of public service spending that falls within the devolved budget) and the change in population in each country.

† Spending plans for the English NHS have been published up to 2020/21

‡ This is based on plans set out in the March 2016 budget, and assumes the Welsh government makes no change to income tax rates.

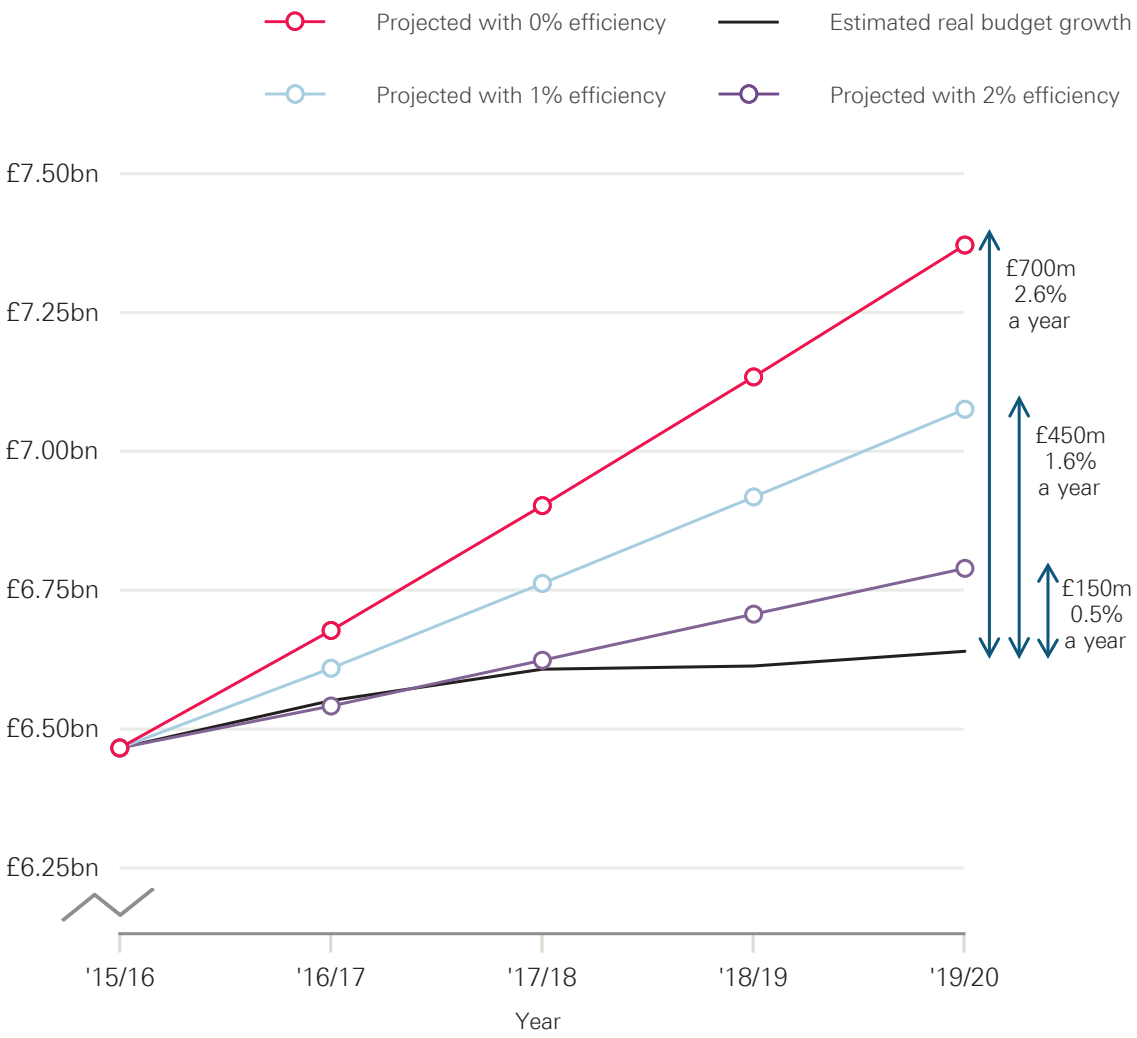
Table 1: Health budgets for England and Wales
Department of Health Total Department Expenditure Limit (TDEL) as outlined in the March budget 2016[13] (all figures are £bn unless specified)

	2015/16	2016/17	2017/18	2018/19	2019/20
TDEL Department of Health, England	117.2	120.4	123.5	126.1	128.9
TDEL Department of Health, England (2016/17 prices)	119.0	120.4	121.3	121.3	121.7
Assumed budget for Welsh NHS from using health specific Barnett consequentials	6.4	6.5	6.7	6.9	7.0
GDP Deflator – June 2016	100.0	101.5	103.3	105.5	107.5
Welsh NHS (2016/17 prices)	6.5	6.5	6.6	6.6	6.6
Real annual growth (%)	–	1.30%	0.84%	0.09%	0.40%

If this is the case, then the NHS in Wales would need to achieve a greater level of efficiency growth over the next few years to avoid undermining the long-term sustainability of the NHS. Growth in efficiency in line with the long-run average of 1% a year would still leave a funding gap of around £450m in 2019/20. Even efficiency growth of 2% without other savings would leave a gap of £150m. The NHS would need to achieve annual efficiency growth of around 2.5% a year to close the gap without reducing the range and quality of services (Figure 7).

These projections are based on the assumption of near financial balance in 2015/16. However, there are obvious concerns that large deficits of two LHBs outweigh the small surpluses of the other LHBs and NHS trusts. The extent to which the end-of-year position depends on non-recurrent savings is a crucial consideration. If the underlying position for 2015/16 is significantly worse, then the requirement for sustainable efficiency savings will be greater.

Figure 7: Pressures for the Welsh NHS in 2019/20
Projections with possible budget and different rates of efficiency growth



Opportunities for closing the gap: pay, prudent health care and technical efficiency

There are a number of policies and initiatives that are likely to have an impact on the spending pressures facing the NHS in Wales. We have explored three key areas: the impact of the current public sector pay policy, potential changes from the adoption of prudent health care, and current drives for greater technical efficiencies.* We have chosen these scenarios to give the greatest amount of relevant information to help inform policy decisions around funding and efficiency measures. It is not an exhaustive list of potential savings – for example, we have not explored options around user charges, reductions in services or increased waiting times.

Pay

Pay is the single greatest cost of delivering health and care services, accounting for around two-thirds of NHS spending. Any change in pay conditions therefore has major implications on total cost pressures on the NHS in Wales. For our projections we start with the assumption that pay per head will rise by the long-run average of 2% a year in real terms, to provide an estimate of pressures before the impact of policy decisions.[3] However, current national policy is that public sector pay per head should not rise by more than an average of 1% a year in cash terms.[16] The impact this has on the total NHS pay bill in Wales depends on the likely shift in skill mix,† incremental drift‡ and the impact of changes to NHS pension schemes. Estimates for the English NHS are that total pay will rise by an average of 0.3% a year in real terms between 2015/16 and 2019/20, with an increase of 1.8% in 2016/17 due to rising pension costs, followed by real-terms decreases in 2018/19 and 2019/20 (Table 2).

Table 2: Cost of pay and pensions for English NHS
Assumed cost increases due to pressures from pay and pension for English NHS, in cash and real terms[17]

	2016/17	2017/18	2018/19	2019/20
Pay and pensions for English NHS, cash terms	3.3%	2.0%	1.6%	1.6%
GDP Deflator June 2016	1.5%	1.8%	2.1%	1.9%
Pay and pensions for English NHS, real terms	1.8%	0.2%	-0.5%	-0.3%

Note: Data include incremental drift and skill mix effects, with uplifts of 1.75% in 2016/17 to account for pension reform, and 0.4% in 2017/18 for the apprenticeship levy.

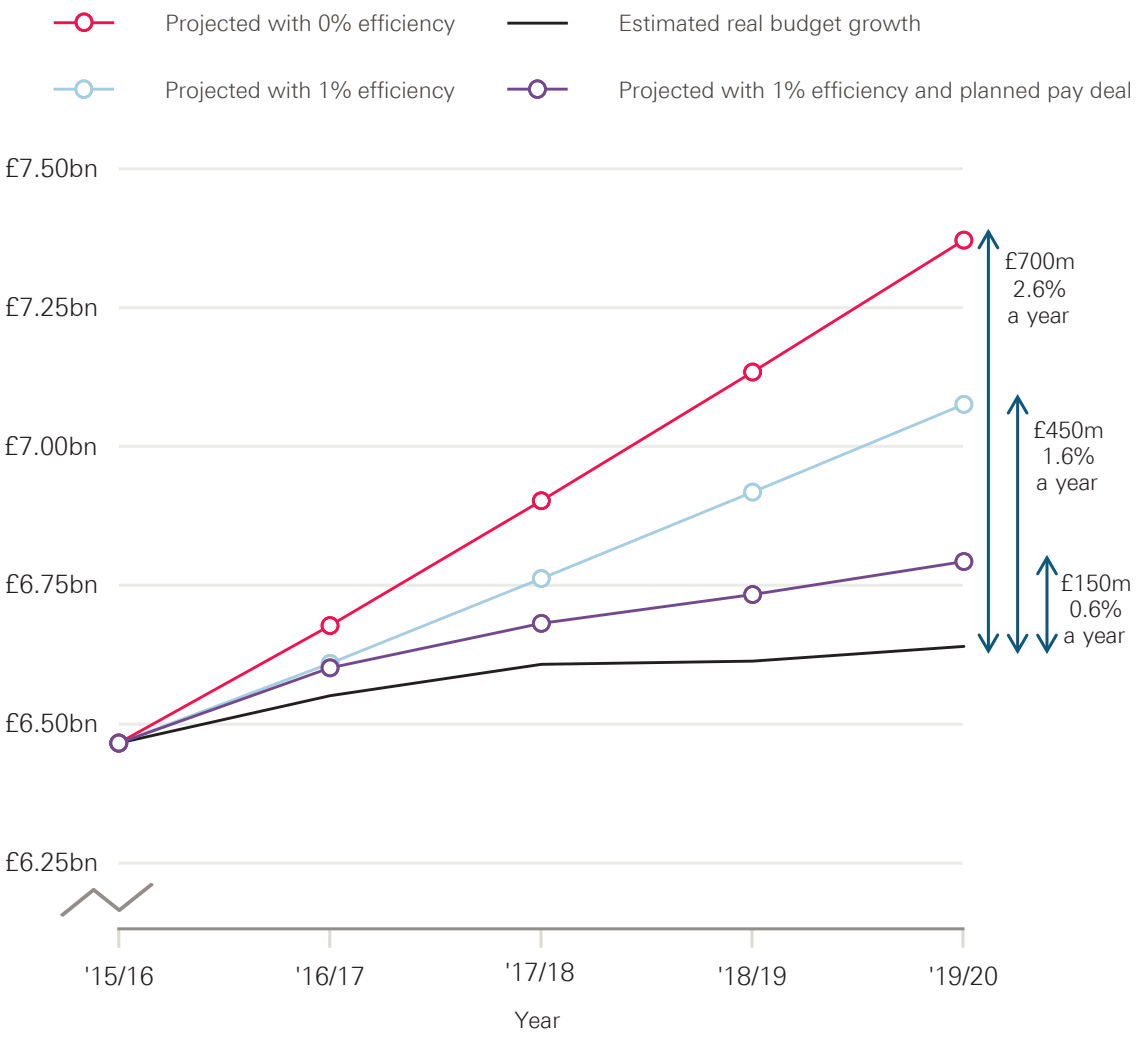
* Technical efficiency means providing the agreed outputs at the lowest possible costs, while sustaining or improving quality.

† It is worth noting that the principles of prudent health care may have implications on the future required staff skill mix.

‡ Increase in salaries as staff progress through pay bands.

A similar effect on pay costs in Wales, combined with 1% growth in efficiency, would reduce pressures by a further £300m in 2019/20, leaving a funding gap of around £150m (Figure 8). The current pay deal therefore has a similar effect on projected pressures as increasing efficiency from 1% to 2% a year (see Figure 7 on page 20).

Figure 8 : Effect of 1% efficiency and the current public sector pay deal



These estimated spending pressures associated with the planned pay deal must be treated with care. The current pay settlement comes after a period of broadly flat real-terms pay between 2010/11 and 2015/16. It is possible that holding pay for this extended period will have negative impacts in terms of morale, recruitment and retention of staff. This is partly evident from the recent substantial increase in spending on agency staff for the Welsh NHS, which was 60% higher in 2015/16 than in 2014/15[17] – although this is also a response to planned increases in ward nurse staffing levels following the Safe Nurse Staffing Levels (Wales) Bill.[18]

Agency staff have a higher cost, and may impact on the quality of care provided, particularly in terms of continuity of care for a patient.[19] If the use of agency staff continues to increase, the additional cost would reduce the potential savings from the pay policy.

Prudent health care

Prudent health care is an approach to improve the way in which services are delivered to patients by the Welsh NHS. It is defined as '*healthcare which is conceived, managed and delivered in a cautious and wise way characterised by forethought, vigilance and careful budgeting which achieves tangible benefits and quality outcomes for patients*'.[20]

There are four major principles of prudent health care.[21] These were developed by the Bevan Commission through engagement with clinicians, managers and patients. They are:

- Achieve health and wellbeing with the public, patients and professionals as equal partners through co-production.
- Care for those with the greatest health need first, making the most effective use of all skills and resources.
- Do only what is needed, no more, no less; and do no harm.
- Reduce inappropriate variation using evidence based practices consistently and transparently.

The aim is to improve the millions of encounters between Welsh people and their health service, to achieve the optimal outcome by providing appropriate services at the optimal time in the best setting. In some cases this will mean offering treatment in a new setting, which is often not in hospital. In other cases, where the treatment is not considered effective, it means not offering the service. It requires all health care and other professionals to use resources effectively and efficiently, to reduce wasteful allocation of resources. This includes encouraging staff to work to the top of their training, with an original principle of 'only do what only you can do' now incorporated into the second principle.

Prudent health care is predominantly about improving quality of care and value for money, rather than reducing overall financial pressures on the service. But given its prominence in policy and planning, we felt it important to consider how adoption of prudent health care might affect future demand pressures. This is not straightforward given the wide-ranging implications for different services, types of patients, workforce skill mix and patient expectations. We have therefore not attempted to fully model all scenarios, but have chosen certain aspects relevant to the model. Using opinions from relevant experts, we have explored how trends of demand might change for key patient groups, to give an indication of the likely impact.

The Welsh Institute of Health and Social Care (WIHSC) is carrying out research on the current and future adoption of prudent health care through qualitative analysis involving service leaders. The research is being funded by the Health Foundation and will be completed in early 2017. However, we have been provided with the results of the first stage of WIHSC's work to support our research. These initial results give an indication of the possible changes in service delivery as a result of adoption of the prudent health care principles. Further information on the research approach is available in Appendix 2.

Table 3 shows the WIHSC estimates for possible impacts of adopting prudent health care on the current trends for specific activity types and patient groups.* It is important to note that these are not planned changes, but are instead estimates based on opinions from leading experts in the relevant field about how future trends might change based on evidence for past activity growth. While not perfect, they give the strongest available estimate for the likely direction and magnitude of future of service provision if prudent health care is adopted.

The results are used to reflect on what would happen if expectations are met, rather than for specific planning purposes. Given the importance placed on prudent health care, we would recommend that further work is done to develop these scenarios to understand the full impact, in order to help with formal planning processes. Equally, formal tracking and evaluation of changes will help to drive the pace and scale of improvement, and allow for a quick response when unexpected results occur.

Table 3: Adjustment to activity trends between 2015/16 and 2020/21 as a result of prudent health care (annual average values in brackets)

DOMAIN	Elective admissions	Non-elective admissions	Length of stay (elective)	Length of stay (non-elective)	Outpatients	A&E	Prescriptions	Community contact	GP
Mental health	-3% (-0.7%)	-7% (-1.9%)	-7% (-1.7%)	-8% (-2.0%)	-3% (-0.8%)	-10% (-2.6%)	-5% (-1.2%)	10% (2.4%)	3% (0.8%)
Chronic conditions	-4% (-1.0%)	-8% (-2.0%)	-3% (-0.6%)	-3% (-0.8%)	-5% (-1.1%)	-5% (-1.4%)	-5% (-1.2%)	8% (1.8%)	3% (0.8%)
Frailty and end of life care	-1% (-0.2%)	-5% (-1.3%)	-1% (-0.3%)	-4% (-0.9%)	1% (0.1%)	-5% (-1.3%)	-5% (-1.2%)	8% (1.8%)	3% (0.8%)

Source: WIHSC

By applying these adjustments to the activity trends in our model we can estimate the impact that adopting prudent health care may have on projected funding pressures.† It is likely that investment will be required in certain services, such as community and primary care, as services are provided in more appropriate settings.

* For example, the middle-left cell in Table 3 means that for patients with chronic conditions, the professionals surveyed by WIHSC expect that elective admissions will be 4.0% lower in five years than they would otherwise have been, as a result of prudent health care.

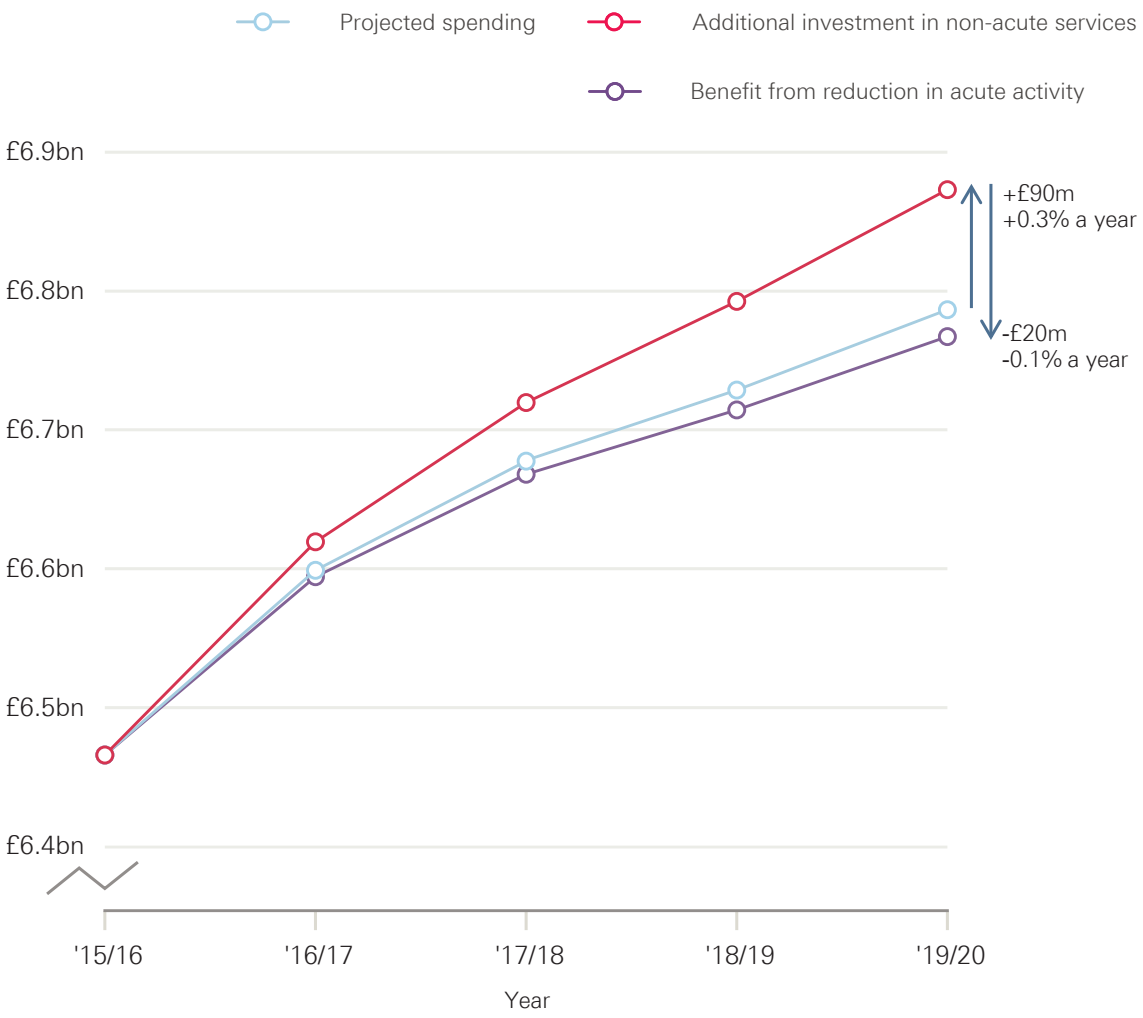
† It is important to note that these are based on the results of qualitative research, so while likely to be broadly correct, they should not be taken as fact. Our analysis reports what the effect on NHS finances would be, were the change in activity described in Table 3 to come to fruition.

It is also expected that trends in hospital care and community prescribing will rise more slowly as a result of prudent health care. This is because more patients would receive the care that they need out of hospital. In addition, thresholds for appropriate interventions are likely to change and improvement in population health is expected to lead to reduced demand for NHS services. Public engagement should also help manage expectations of what the service should provide.

The key question for total financial pressures is whether the investment required in out-of-hospital services is greater than, equal to or less than the potential for saving from reduced hospital demand.

Figure 9 shows the projected increase in total funding pressures of the additional investment in community contacts and GP consultations, based on the assumptions in Table 3.

Figure 9: Effect of prudent health care on spending
Estimated effects of investment and acute savings associated with prudent health care on total expenditure in NHS Wales



This investment would add an additional £90m to the total spending pressures in 2019/20. If the estimated reduction in pressures on hospital services and in community prescribing are realised,* we estimate this would roughly balance the investment, reducing total pressures by £110m and leading to a £20m decrease in total costs. This would be worth 0.3% of total spending in 2015/16.

Overall it is likely that prudent health care will be broadly cost-neutral across the NHS in Wales over the next five years. The additional investment required for out-of-hospital services is projected to be similar to the potential for savings across acute care and community prescription costs.

This means that, if quality, appropriateness and value for money of services are improved for patients through adoption of the prudent principles, this may be achieved without additional pressure to the total Welsh NHS budget. However, these principles are unlikely to play a major role in closing the funding gap facing the NHS. So other measures for savings, such as increasing technical and allocative efficiencies, must be explored.

Box 2: Transformation funding

In this report we have not explored the transformational funding needed to achieve the changes required for prudent health care. If the Welsh NHS is to achieve transformation it may need specific investment for four key areas:

- Staff time – time for staff to spend away from their regular commitments to learn and develop new ways of working.
- Programme infrastructure – on a national and local level, to help identify and spread best practice.
- Physical infrastructure – including improved use of IT.
- Double-running costs – to allow new services to be set up while continuing current services, with the assumption that demand for the latter will fall as new services become established.

In our joint project, with the King's Fund, on a transformation fund for the English NHS, we estimated costs for these based on engagement with a number of experts. Applying the same assumptions for the Welsh NHS would require investment of around £60m a year by 2019/20.

To arrive at this indicative figure we assumed that this investment to generate change would involve three sets of costs:

- an investment cost per head of the population of £5
- the cost of training staff of between 2.5 and 5 days
- cost associated with IT of just under £5 per head of the population.

Some of this investment would likely come from the capital budget (not included in this analysis) and by reallocation of funding for change already in the NHS budget. But some protected additional investment for transformation may also be required.

For more information, see our report produced with the King's Fund: *Making change possible: a Transformation Fund for the NHS*.[22]

* It is worth noting that our scenarios explore the reduction in the trend, not a decrease in what is currently supplied. The scenarios would still see more activity delivered in hospital, but less than otherwise projected. The task therefore is not to close hospital wards, but to avoid the need to open new ones.

Improving efficiency

Even with the current national public sector pay policy, potential impact of prudent health care and efficiency growth of 1% a year, the Welsh NHS is still likely to be facing a funding gap of around £150m in 2019/20, assuming the budget does not rise faster than is planned for England. Living within its budget, while protecting the range and quality of services for patients, will therefore require the NHS to achieve additional efficiency growth.

There are suggestions that efficiency growth above 1% is achievable. York University estimates that efficiency for the English NHS has risen by an average of 1.5% a year between 2004/05 and 2013/14.[23] In addition, there is a perception that there are savings to be made in the delivery of NHS services. Of Welsh respondents to the 2014 British Social Attitudes (BSA) survey, 56% thought that the NHS wastes money. This is similar to the proportion of English respondents and significantly higher than Scottish respondents (52% and 45%, respectively) who thought the same.[24]

The NHS in England is currently focused on achieving an ambitious target of 2–3% efficiency growth each year to 2020/21, following the publication of the *NHS five year forward view* (Forward View).[25] This requires sustained improvement in efficiency of between two and three times that achieved since 1997, representing a substantial challenge.

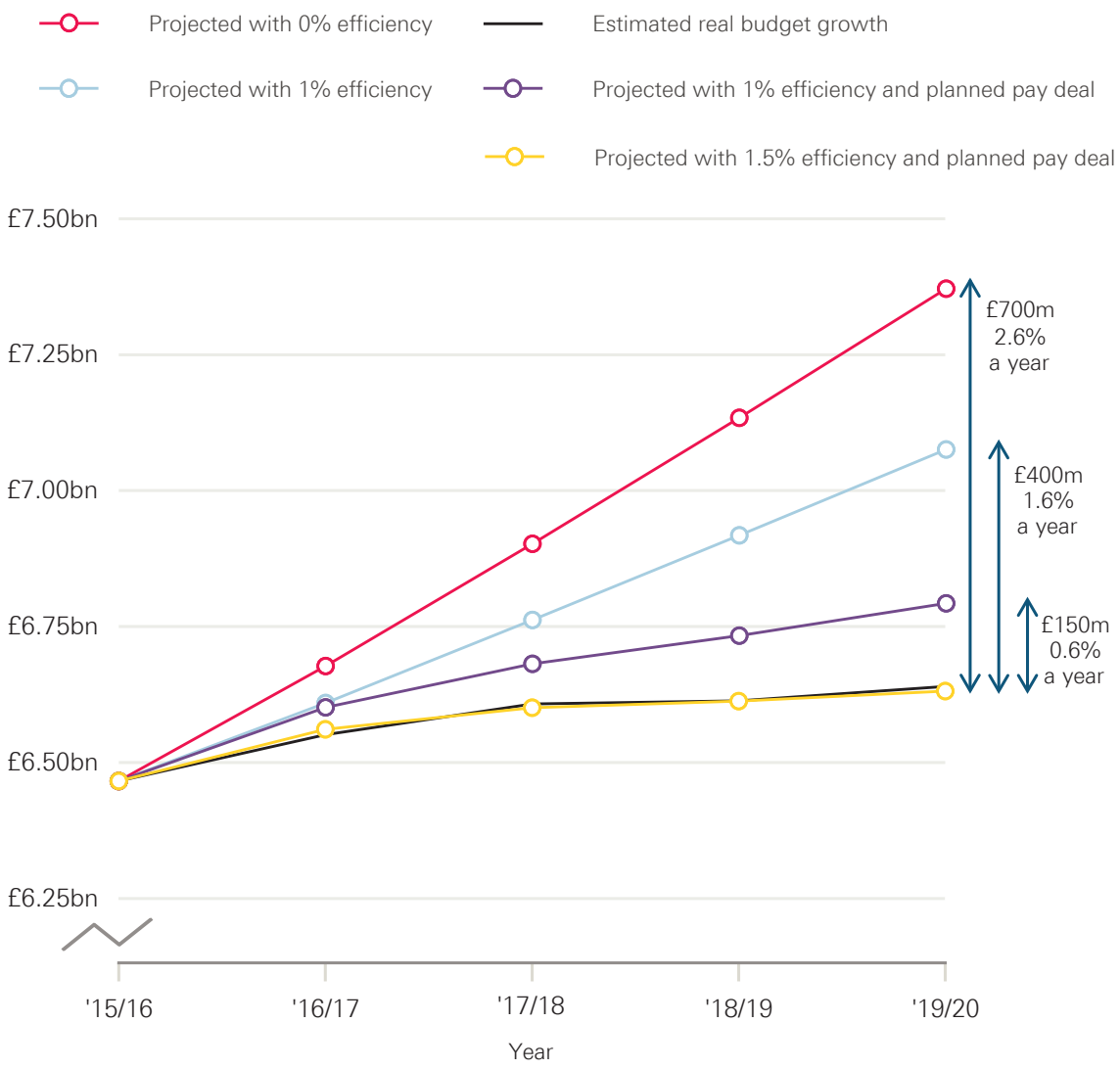
If the NHS in Wales is able to increase efficiency growth to 1.5% a year, combined with the effects of the national pay policy this would effectively close the funding gap in 2019/20 (Figure 10 overleaf). This is above the trend rate for efficiency, so will require concerted effort from all providers, with national support, to reduce waste and unwanted variation.

Obtaining the required savings is likely to need improvements in technical efficiency.* There is a growing evidence base for how this might be achieved, much of it from the English NHS as it works to meet the challenges from the Forward View. A key contributor is the work led by Lord Carter of Coles on unwarranted variation in hospitals.[26] This identified potential for £5bn savings for acute trusts – this is worth nearly a quarter of the £22bn of savings the English NHS is aiming to achieve.

The Public Policy Institute for Wales have been exploring the potential for improving technical efficiency within the Welsh NHS through a series of engagement workshops. The results of these will be published shortly.[27] Following this, a national focus will be required across the whole Welsh NHS to develop a realistic plan for how a higher rate of efficiency growth can be achieved.

* Technical efficiency means providing the agreed outputs at the lowest possible costs, while sustaining or improving quality.

Figure 10: Pay deal and efficiency projections
Spending projections for NHS Wales based on current pay deal and different efficiency assumptions



5. Discussion

Fiscal sustainability of the NHS in Wales appears to be achievable over the long term. It will require continued focus on making improvements to efficiency, and additional real-terms investment, but neither at levels that are unrealistic. So long as trend rates of efficiency growth are maintained and funding rises in line with expected growth in national income up to 2030/31, the NHS should be able to at least maintain the current range and quality of services to meet the needs of future populations.

However, there are some crucial factors that could have major implications on the long-term sustainability of the Welsh NHS if they are not well managed. These include short-term funding pressures, national requirements for the level of quality, support for the NHS workforce, management of chronic conditions and other service changes, investment in social care and other public services, and the impact of the UK's decision to leave the EU.

Current pressures

The funding available for the NHS is likely to grow by less than 1% a year over the next few years – much lower than the projected rise in pressures. Even with the current pay policy capping rises to an average of 1% a year in cash terms, and continuing the average rate of efficiency growth (1% a year), there would be a funding gap of around £150m by 2019/20, assuming the budget rises in line with plans for the English NHS. The NHS in Wales will therefore need to achieve efficiency growth of around 1.5% a year in real terms if the quality and range of services is to be protected – or even improved through adoption of prudent health care principles.

This is higher than the long-run trend in efficiency growth across the UK NHS and so represents a significant challenge. The challenge must be met in the short term in a manner that will not undermine long-term sustainability. In addition, funding growth in Wales has been low in recent years, rising by 0.1% a year between 2011/12 and 2015/16. This means that efficiency savings are likely to be harder to achieve year-on-year.

The NHS in Wales exceeded its total budget in 2015/16, with the deficits of two of the seven LHBs much larger than the total surpluses of the other LHBs and NHS trusts. If the final position was overly dependent on non-recurrent savings, and the underlying position for 2015/16 is significantly worse, the requirement for sustainable efficiency savings will be greater than modelled.

National and political requirements for quality

Our model projects that, if it continues to achieve the long-term average growth in efficiency (1% a year), the NHS in Wales could be fiscally sustainable with funding growth of around 2.2% a year. This is almost half the average rate of funding growth the UK NHS has received since it was established in 1948 (3.7% a year). There are a number of reasons that our projections are lower, including that population growth in Wales is expected to be lower than for the rest of the UK. We use population projections produced by the Welsh Government, which project an average increase of 0.4% a year between 2015 and 2030. The ONS estimate that over the same period the UK population will grow by an average of 0.6%.[9]

Another major reason that our projection is lower than historic increases is that it is based broadly on maintaining the current range and quality of services to meet the needs of the future population. We have assumed some improvements in quality, particularly around treatments for chronic conditions, and rising expectations, but only in line with recent trends. We have also modelled improvements in appropriateness of treatments provided through prudent health care (discussed in more detail later in this section).

We have not included any major advances in quality or advances in technology in our projections, which is why the estimate of investment required for long-term sustainability is lower than the historic trend rate of funding growth. If large-scale improvements are desired then additional investment would be required above our projections.

This has occurred across many periods of NHS history, most notably between 1997 and 2008, when real-terms funding in the NHS doubled following the decision by Tony Blair's government to raise spending on health care to the EU average to bring performance in line with other European countries.[2] Funding rose by an average of around 6% a year,[28] which in part led to major improvements in many aspects of quality, particularly access and safety. For example: average waiting times for elective treatment in England fell from 12.7 weeks in 2002 to 4.3 weeks in 2010; mortality from stroke fell by 25% between 2000 and 2009;[29] and there was a 62% fall in MRSA infection rates between 2003/04 and 2008/09.[30]

The OBR recently published projections for a range of scenarios for public spending on health in the UK between 2020/21 and 2060/61.[12] Alongside variations on productivity growth, income elasticity and expansion of morbidity, they also model the additional cost pressures for reasons other than demographics, predominantly increasing relative health care costs and advances in technological innovation. From this, we estimate that advances in technology could add another 0.7% a year to spending pressure. In this case, with 1.0% efficiency growth, spending pressures would rise by 2.9% a year in real terms. Allowing for these advances would therefore require higher efficiency growth, or funding to increase as a share of GDP.

Workforce

The NHS workforce is its most crucial asset, and greatest area of spending. The current public sector pay policy – capping rises to 1% a year in cash terms – is therefore expected to make a major contribution to the savings required by 2019/20. However, this assumes that the pay policy will have no further impact on morale, recruitment and retention of staff.

The current policy means that by 2019 NHS pay will have remained broadly flat in real terms for almost a decade. While flat pay per between 2010 and 2015 was low compared to a long-run average of 2% a year since 1974/75, it was comparatively better than private sector pay, which fell during this period as a result of the fallout from the 2008 global economic crisis. Public sector pay is now expected to fall relative to private sector pay,[31] which may result in difficulties training, recruiting and retaining staff in the NHS as the relative benefits of working elsewhere increase.

There are worrying signs that LHBs are already struggling to fill vacancies, with spending on agency staff 60% higher in 2015/16 than in 2014/15. Agency staff can cost considerably more than permanent staff, and if this trend continues the additional costs could easily undo much of the financial saving from the pay restraint policy.

Sustained low pay awards and potential staff shortages may lead to a decline in staff morale. In the Welsh 2013 staff survey, while the majority of respondents reporting being satisfied in their job (64%), around one in five (21%) reporting being fairly or very dissatisfied. In addition, a composite score across seven questions suggests only 55% of respondents are fully engaged in their jobs.* Over half of employees (54%) felt that there were not enough staff at their organisation for them to do their job properly.[32]

The Welsh NHS will need to achieve some major changes in the way services are delivered over the next few years. One of the essential factors involved in successful transformation is an engaged workforce whose members are given time and space to learn and develop new ways of working collaboratively.[22] If the sustained period of flat real-terms pay has reduced the level of engagement any further it could have serious implications on the ability of the NHS to achieve what is required for realising efficiency savings or service improvements through prudent health care.

A strong focus on workforce policy will be essential as the NHS aims to meet its short- and long-term financial challenges. This policy must be linked to desired changes as a result of adopting prudent health care to ensure that the workforce is fit for the purpose in the future.

Hospital admissions for people with chronic conditions

Our model shows that growth in hospital admissions for people with chronic conditions is a key pressure on the NHS. Prevalence of chronic conditions rises with age, however the overall increase seen is over and above what can be explained by the ageing of the population alone, with rising levels of admissions for people with these conditions occurring in all age groups. This growth is a combination of many factors that are hard to separate. Some is a result of increasing prevalence of the conditions, including due to population risk factors, such as the rising rate of obesity, while other factors include rising underlying public expectations of the quality and amount of treatment available. In addition, new technology can both increase the treatment options available and improve life expectancy for people with chronic conditions.

* This is a composite index score calculated across seven questions, including 'I look forward to going to work' (49%), 'I am happy to go the extra mile at work when required' (86%), and 'I am involved in deciding on the changes that affect my work/area/team/department' (37%).

Any change in the trend of admissions would have substantial implications for future costs. The level of investment in prevention services – both within the health sector and, crucially, more broadly – combined with the ability to provide suitable care at the right time and in the most appropriate setting, will be an important factor in managing the rate of growth in these admissions, and therefore the long-term sustainability of the NHS. This will require up-front investment, and it may be some time before the benefits are realised through reduced demand.

Prudent health care and slowing trends for hospital treatment

The principles of prudent health care are a key focus for improving the way services are provided for patients, and getting the best value for money for the Welsh NHS. Although our modelling suggests that the total financial impact of prudent health care on the NHS budget is likely to be minimal, it is unlikely to cost extra overall – so long as demand for acute services is reduced (this also excludes any transformation funding that may be required). Therefore, if prudent health care leads to improved quality for patients and better value for money for the NHS, it should have positive results.

However, this depends heavily on realising the expected reduction in hospital care and community prescribing activity. The reductions in activity are expected from multiple elements of the prudent approach, including:

- changes in thresholds for appropriate treatment as clinicians aim to 'do only what is needed'
- providing care in more suitable settings such as primary and community services
- investment in prevention and population health
- better management of expectations through public engagement.

If the benefits are not realised then the total cost pressures facing the Welsh NHS would rise. For example, based on the assumptions in our modelling, if prudent health care did not reduce the trend for acute and community pharmacy pressures then currently expected total spending pressures would rise by £90m in 2019/20.

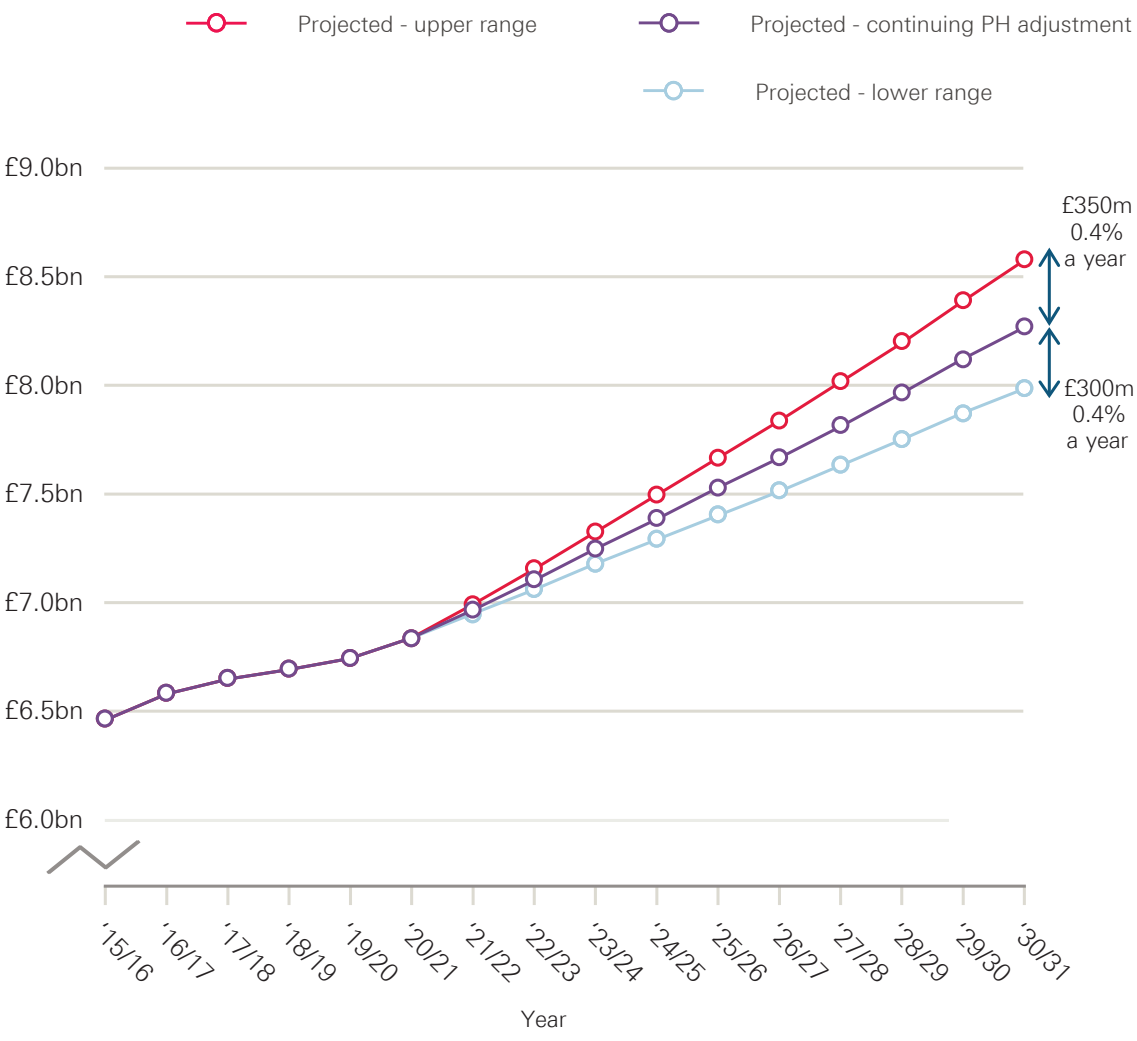
Additionally, if there is a high level of unmet need for NHS services there is a possibility that prudent health care might increase overall pressures further, as previously unmet need fills the space created by shifting some care out of hospitals. While this is an obvious benefit to those with the unmet need and to those receiving care in a more appropriate location, the potential costs would need to be accounted for.

The long-term benefits of prudent health care are uncertain. We have initially assumed that the trends expected over the early period continue, and the ultimate result is broadly cost-neutral. However, it may be that maintaining the earlier investment in community and primary care is sufficient to lead to continuing falls in the trends for other services.

In this case the long-term benefit would be greater, potentially reducing pressures in 2030/31 by £300m.* Alternatively, if NHS Wales continues to invest in community and primary care as part of prudent health care, without achieving any further benefit in the acute sector, then funding pressures could rise by around £350m in 2030/31† (Figure 11).

In its analysis, WIHSC explored possible changes of services for early years of life. However, as results on this investment are not likely to be seen within five years, we have not included them in our model. It is more likely that the results will be seen in 2030/31, and so the long-term effects of prudent health care may be greater than shown here.

Figure 11: Potential impact of prudent health care by 2030/31



* This assumes that the average annual reduction in trend continues for acute and community pharmacy beyond 2019/20, without continuing the increase in trend for primary and community care.

† Here we assume that the trend for acute and community pharmacy does not change any further beyond 2019/20, while the average annual reduction in trend continues for primary and community care.

Investment in social care and other public services

The health of the population depends on far more than the quality of health care services. Some studies estimate that health care may contribute as little as 10% towards the health and wellbeing of a country's population.[33] The demand for NHS services in Wales will, however, clearly be affected by the general health of the Welsh population. The key determinants of health are largely outside the control of health services, and under-investment in other public services, such as education and welfare, may have negative implications for health care services, increasing demand over the long term.

This interrelationship of public services contribution to health is now established in Welsh law, through the 2015 Wellbeing of Future Generations (Wales) Act.[34] The act requires all public bodies to 'think more about the long term, work better with people and communities and each other, look to prevent problems and take a more joined-up approach'. The success of this act may have implications on future demand for health services, depending on the effectiveness of coordinated approaches across health and education.

The quality of – and spending on – social care will have one of the strongest impacts on the demand for health care. Although the true extent of interdependence is hard to define, it is widely acknowledged that poor quality of social care has implications for demand for health care, and vice versa.

Unfortunately appropriate data were not available to estimate demand pressures for adult social care in Wales. Instead, we have estimated them using modelling for England by the London School of Economics, based on the English Longitudinal Study of Ageing (ELSA).[35] This provides an estimated growth in demand for people in England aged 16–64 and those aged 65 and over. We have assumed that the relative growth in required spending per head in the two age groups in Wales will be similar to England. While not perfect, we feel this provides a good guiding estimate.

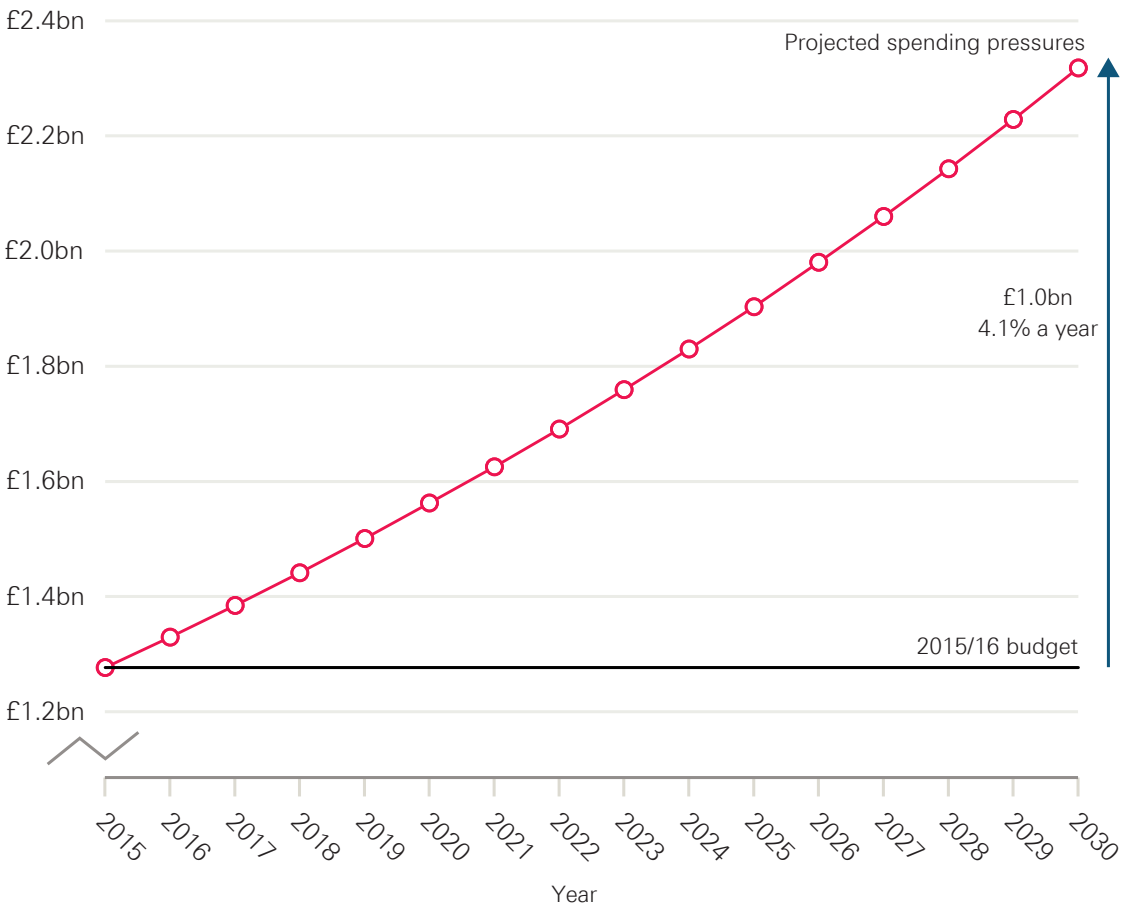
In 2014/15, Wales spent £1.2bn on personal social services, excluding family and children's services.[36] This is worth around £397 per head of population, higher than in England (£290). This partly reflects estimates of higher needs in Wales, as well as the government's decision not to ring-fence the health care budget in 2011/12 in order to protect other areas of public spending.[3]

We estimate that pressures on social care will rise by around 4.1% a year between 2015 and 2030/31, due to demography, chronic conditions and rising costs. This will require the budget to almost double to £2.3bn by 2030/31 to match demand (Figure 12).

This rate of growth is higher than expected for the NHS, as social care services are heavily concentrated on the most elderly (a group that is seeing the fastest population growth) and the growing proportion of the population with learning disabilities.[37] Also, historically, the scope for productivity growth in social care in the UK has been lower than for health care, having fallen by an average of 1.7% a year between 1997 and 2013.[11]

Unless funding for adult social care rises at the same rate as pressures, or there is a dramatic change in the rate of efficiency growth for social care services, there is a risk that the level of unmet need in Wales would rise. The is a strong link between spending on social care and the NHS,[38] so any increase in unmet need for social care would be likely to lead to a rise in demand for NHS services.

Figure 12: Projected cost pressures for adult social care in Wales



Leaving the European Union

In this analysis we have not considered the implications of the recent vote to leave the EU. There is a high degree of uncertainty around what leaving the EU will mean for the UK as a whole, and therefore the potential impact for the Welsh NHS. Most economists agree the outcome will result in a fall in the rate of economic growth.[39] This in turn would have implications for the total funding available for public spending, and therefore the NHS budget.

The Health Foundation's recent briefing suggests that following the referendum, the budget for the NHS in England could drop by between £2.8bn and £4.6bn by 2019/20, depending on decisions around trade agreements with the EU.[40] The equivalent impact

for the Welsh budget would be a reduction of around £150m by 2019/20 if the UK joins the European Economic Area. If instead the UK uses World Trade Organization (WTO) trading rules, the Welsh budget for 2019/20 could be as much a £350m lower than currently projected.

To avoid this impact to the NHS budget, the government would need to increase taxation; make greater reductions in other areas of public spend (which could have a long-term impact of increasing demand on the NHS); or delay balancing the national budget and extend the period of austerity.

The longer-term effects could see the NHS budget in England fall by between £3bn and £12bn in 2030/31 due to lower economic growth. The equivalent for the Welsh NHS would be a reduction in budget of between £120m and £650m. Reductions of this scale would require savings in addition to those we have identified.

The decision to leave the EU also has potential implications for the NHS workforce. Around 6% of people working within the Welsh NHS are EU migrants.[41] Any major change to their eligibility to work in the UK will have clear implications for all services. Current workforce shortages are already apparent through the rise in agency spending and the proportion of employees reporting they cannot do their job properly due to staff shortages. Protecting NHS employees' right to remain in the NHS will be crucial for long-term sustainability.

6. Conclusion

The NHS in Wales, in common with all health systems, is aiming to achieve long-term fiscal sustainability while protecting the fundamental values of universal coverage, solidarity, equity and high quality care.

Our modelling suggests that achieving a fiscally sustainable NHS in Wales in the long term is realistic. However there are a number of necessary steps on the journey. These include:

- securing real-terms funding increases for the Welsh NHS of 2.2% a year after 2019/20, in line with predicted UK GDP growth
- maintaining historic growth in efficiency (1% a year)
- meeting the financial challenges associated with likely low funding increases to 2019/20, during which time funding is likely to grow by less than 1% a year
- developing a strong workforce policy that ensures adequate numbers of high quality and motivated staff
- agreeing realistic assumptions on the improvement in quality that can be delivered under different budgets
- focusing strongly on improving services to make them fit for purpose, including the adoption of prudent health care principles and improved prevention and public engagement to manage trends in acute care
- protecting social care services, as well as other public services that impact on people's health including education and social housing.
- managing the implications of the UK leaving the EU.

If these key steps can be taken now, then we see no reason why the NHS in Wales should not be sustainable for the future.

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Our aim is a healthier population, supported by high quality health care that can be equitably accessed. We learn what works to make people's lives healthier and improve the health care system. From giving grants to those working at the front line to carrying out research and policy analysis, we shine a light on how to make successful change happen.

We make links between the knowledge we gain from working with those delivering health and health care and our research and analysis. Our aspiration is to create a virtuous circle, using what we know works on the ground to inform effective policymaking and vice versa.

We believe good health and health care are key to a flourishing society. Through sharing what we learn, collaborating with others and building people's skills and knowledge, we aim to make a difference and contribute to a healthier population.

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