

# Projecting healthcare expenditure to 2033/34

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 *Context*



# Scenario-based projections inspired by 2002 Wanless report

- In 2002, Sir Derek Wanless and the Health Trends Review team at HM Treasury produced the report “[Securing our Future Health: Taking a Long-Term View](#)”, which projected the financial resources required over the next 20 years to ensure that the “*NHS can provide a publicly funded, comprehensive, high-quality service available on the basis of clinical need and not ability to pay*”.
- Two decades on, the NHS is facing unprecedented pressure, exacerbated by the direct and indirect impacts of the Covid-19 pandemic. Hospital admissions are rising, GP services are stretched and the backlog of patients waiting for elective healthcare stands at over 7 million.
- To understand how demand for healthcare is likely to develop over the next decade, we have undertaken a Wanless-inspired modelling exercise to project total government healthcare expenditure to 2033/34 under various scenarios.
- Given time and resource constraints, our modelling is necessarily less detailed than the original Wanless exercise. However, we have investigated a range of scenarios exploring the relationship between healthcare activity and factors such as population health, productivity and inflation.
- The scope of this modelling exercise is **government-funded healthcare spending in England**. We have excluded private spending, insurance, social care spending and expenditure by the other home nations.
- The following pages set out our methodology and the data sources we have used.



# *Methodology*



# Methodology

Data

Modelling

Hospital activity

GP activity

Prescribing

Activity growth

Population

Unit costs

Healthy Life Expectancy (HLE)

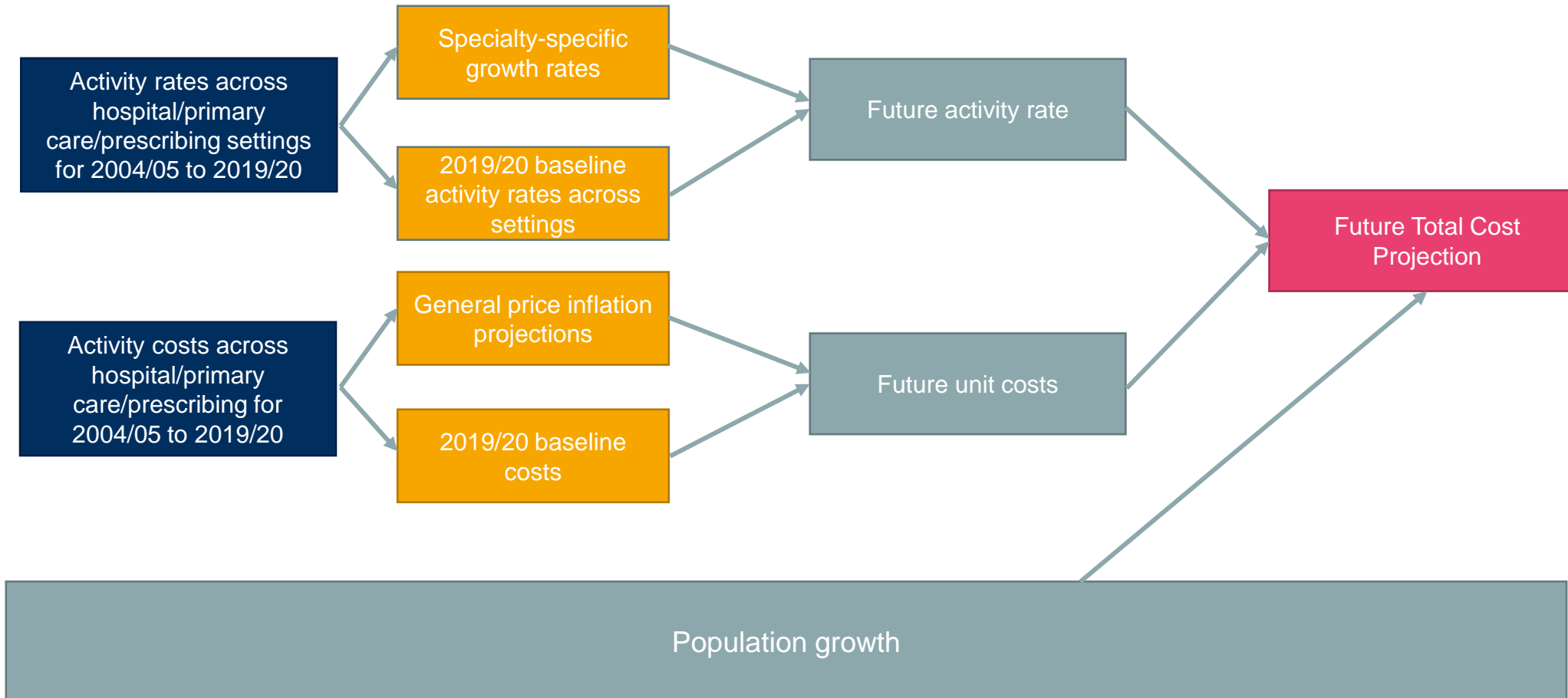
Scenarios

Aggregation

# Summary of data sources

Component of model	Care setting	Data used	Comments
Activity rates	Primary care	<ul style="list-style-type: none"> <li>• GP funding formula</li> <li>• Appointments in the GP practice (weekly since 2020) (<i>NHS Digital</i>)</li> </ul>	
	Hospital care	<ul style="list-style-type: none"> <li>• HES inpatient and outpatient admissions/attendances data (<i>NHS Digital</i>)</li> <li>• A&amp;E summary statistics (<i>NHS Digital</i>)</li> <li>• ONS life expectancies and healthy life expectancies (longitudinal &amp; split by geography) – used in morbidity scenarios</li> </ul>	
	Prescribing	Annual prescribing costs	We model the total cost of prescribing as one item, not broken down between unit costs and activity as we do not collect the unit cost information for prescribing activity
Unit costs	Primary care	<ul style="list-style-type: none"> <li>• PSSRU annual publication</li> </ul>	
	Hospital care	<ul style="list-style-type: none"> <li>• Reference costs (provider level)</li> </ul>	
	General	<ul style="list-style-type: none"> <li>• Market-based inflation expectations (bond yields)</li> </ul>	
Population demographics	N/A	<ul style="list-style-type: none"> <li>• ONS mid-2020 projections</li> <li>• ONS mid-2021 estimates (based on 2021 census)</li> </ul>	

## Core scenario overview





## General approach: core scenario

### Baseline & Rate of change

- The baseline total cost data for 2022/23 is derived from the Department of Health and Social Care (DHSC) 2021/22 annual report and accounts, reflecting our view that the increased spending required since the start of the pandemic may represent the new norm. However, to avoid distortions due to the fluctuations seen over the Covid-19 pandemic, we base our trend growth rates on data up to 2019/20.
- We have analysed rates of hospital and general practice activity in 2019/20, broken down by age, sex and treatment specialty where appropriate. We adjust the 2019/20 figures upwards slightly to remove the effect of reduced activity in March 2020 due to the onset of the pandemic.
- This data is supplemented by population data and estimates of the unit costs associated with hospital and GP appointments to construct a total cost figure for each year between 2019/20 and 2022/23. We adjust the unit costs figures to align with ONS data on total healthcare expenditure and the total costs figures to align with the DHSC accounts.
- We use trends in activity between 2004/05 and 2019/20 to project the baseline figures, adjusting the projections for a small proportion of activity where we do not believe that this trend and baseline provides an accurate guide to expected future experience.

### Projections

- In parallel to the activity rate projections, we adapt the ONS's population projections to estimate the total size and demographic make-up of the England population in each year to 2033/34.
- We have analysed healthcare cost indices between 2004/05 and 2019/20, broken down by area of expenditure (staff costs, premises, drug costs etc), and compared them against the consumer price index (CPI). As the healthcare cost increases were similar to CPI in most years, we project unit costs in line with actual (2019/20 to now) and expected (future) CPI increases.
- In each projection year, we calculate the projected total costs as the product of the projected activity rates, unit costs and population size.

Our core scenario reflects our best estimate of future experience based on past data

# *We used Hospital Episode Statistics (HES) and Reference Costs for the projection of hospital activity rates*



## **Data Sources for Activity Rates**

- Inpatient and outpatient activity rates are obtained from the aggregated inpatient/outpatient Hospital Episode Statistics (HES) data, which reports number of admissions/attendances broken down by:
  - Age (in 5-year age bands)
  - Sex
  - Treatment specialty (generally the same list for inpatients and outpatients)
- Accident & Emergency activity rates are based on the reported NHS activity/attendance counts, which are reported separately for:
  - Major A&E Units
  - Single Specialty A&E Unit & Minor Injury Unit/Walk in Centre (modelled together – split for A&E/GP scenario as discussed on page 27)
- We use detailed data on inpatient, outpatient and A&E activity rates for the period from 2014/15 to 2019/20 to model the trend in activity. We additionally adjust for higher historical rates of activity, aligning with aggregated total activity rates for the period from 2004/05 to 2019/20.

## **Data Sources for Cost**

- We use the annual trust-level Reference Costs (RC) data to cost the hospital activity.
- We aggregate the trust-level costs to the national (specialty) level using Hospital Resource Groups (HRG) / activity weighting (using trust-reported levels of activity for each HRG/specialty).
  - We use separate cost categories for inpatient, outpatient and A&E activity.
  - To obtain separate costs for Major and Minor A&E activities, we use HRG-level data and group them according to severity levels.

# Adjustment for March 2020



- Our activity projections are based on the reported activity levels in 2019/20, with the adjustment described below.
- The end of the 2019/20 period (March 2020) coincides with the start of the Covid-19 pandemic.
  - The distortion to activity levels in March 2020 was so large that it materially affects the overall growth projections.
- To address this issue, we uplift the activity for 2019/20 based on the monthly overall inpatient, outpatient and A&E activity
  - We assume that, without the effects of Covid-19, activity in March 2020 would have increased from the March 2019 level in line with the observed increase from April 2018-February 2019 to April 2019-February 2020.
  - Note that the absolute volumes used to calculate this uplift are lower than the volumes used for our baseline, as this is based on a different data source, but we are comfortable that this data source is a reliable measure of the relative increase between the relevant months.

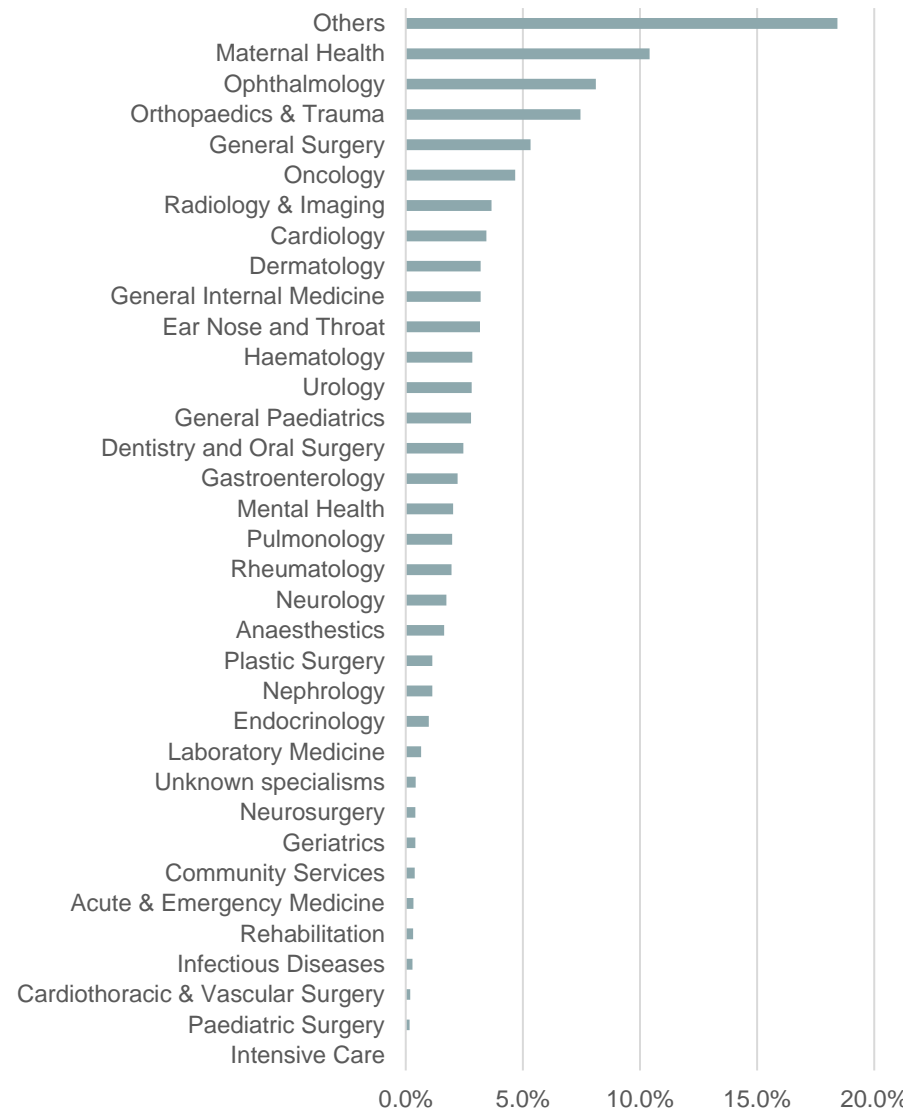
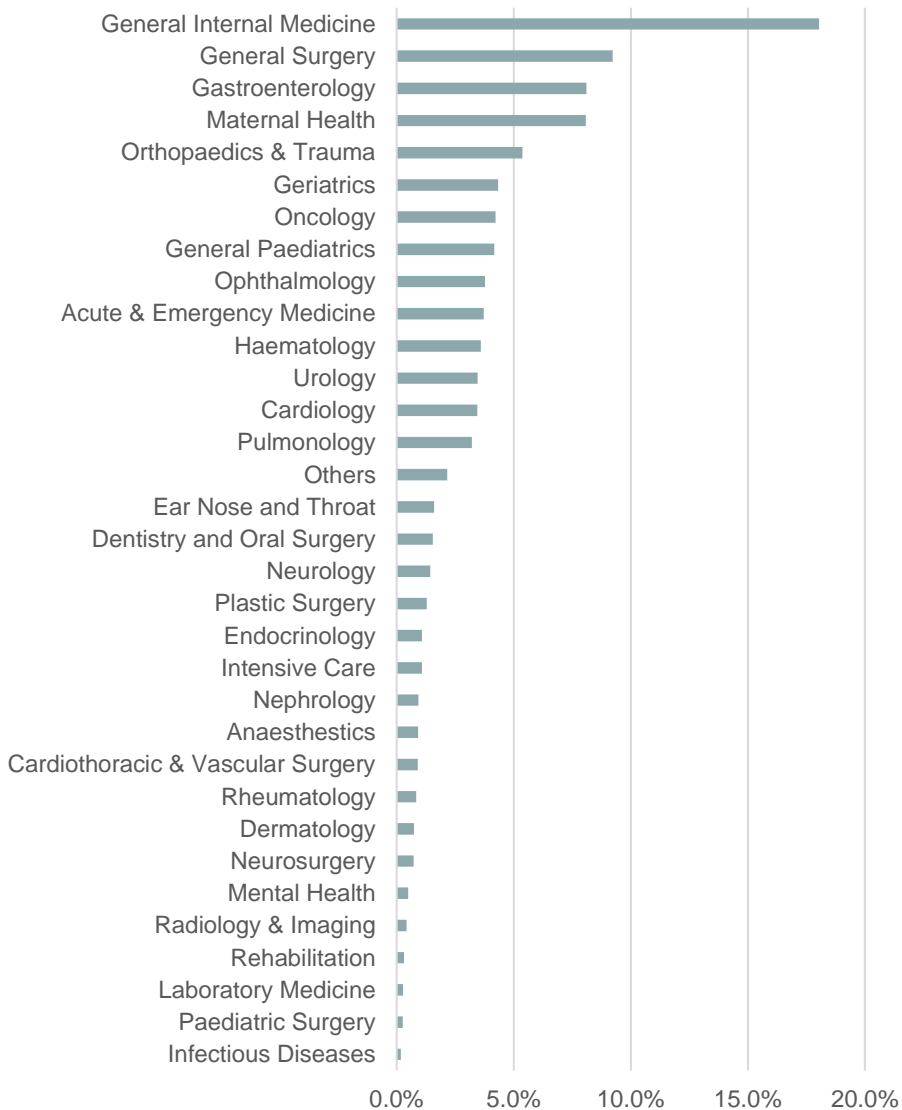
	Inpatient Activity	Outpatient activity	Major A&E	Minor A&E
<i>April 18 - Feb 19</i>	13,802,441	17,431,242	14,306,938	8,352,493
<i>April 19 - Feb 20</i>	14,138,960	17,752,452	14,797,665	8,687,650
<i>% Growth in April-Feb period</i>	<i>2.44%</i>	<i>1.84%</i>	<i>3.43%</i>	<i>4.01%</i>
<i>Volume March 2019</i>	1,309,342	1,610,327	1,373,061	794,490
<i>Volume March 2020</i>	1,020,826	1,312,133	1,013,021	518,780
<i>Revised March 2020</i>	1,341,265	1,640,001	1,420,157	826,370
<i>Total volume 2019/20</i>	15,159,786	19,064,585	15,810,686	9,206,430
<i>Revised total 2019/20</i>	15,480,225	19,392,453	16,217,822	9,514,020
<b>Uplift factor</b>	<b>2.11%</b>	<b>1.72%</b>	<b>2.58%</b>	<b>3.34%</b>

# Share of activity\* across specialties: Inpatient & Outpatient



**Inpatient**

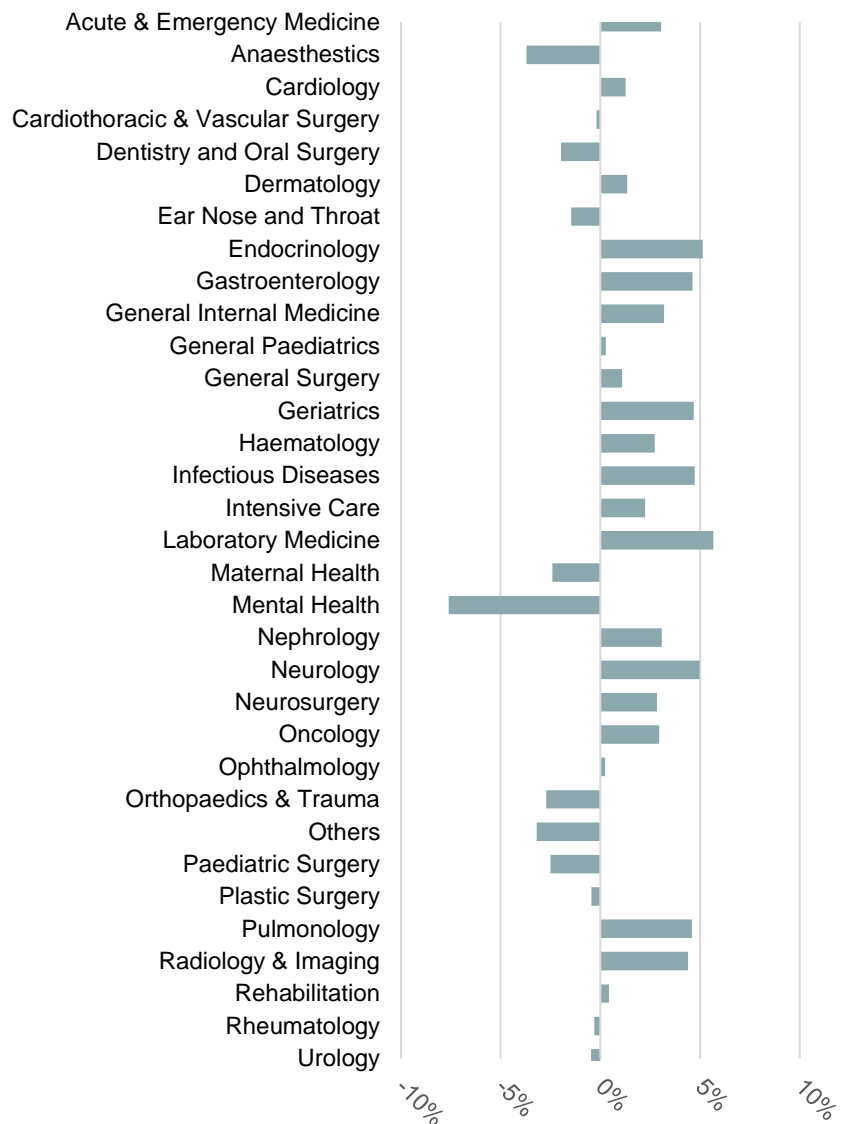
**Outpatient**



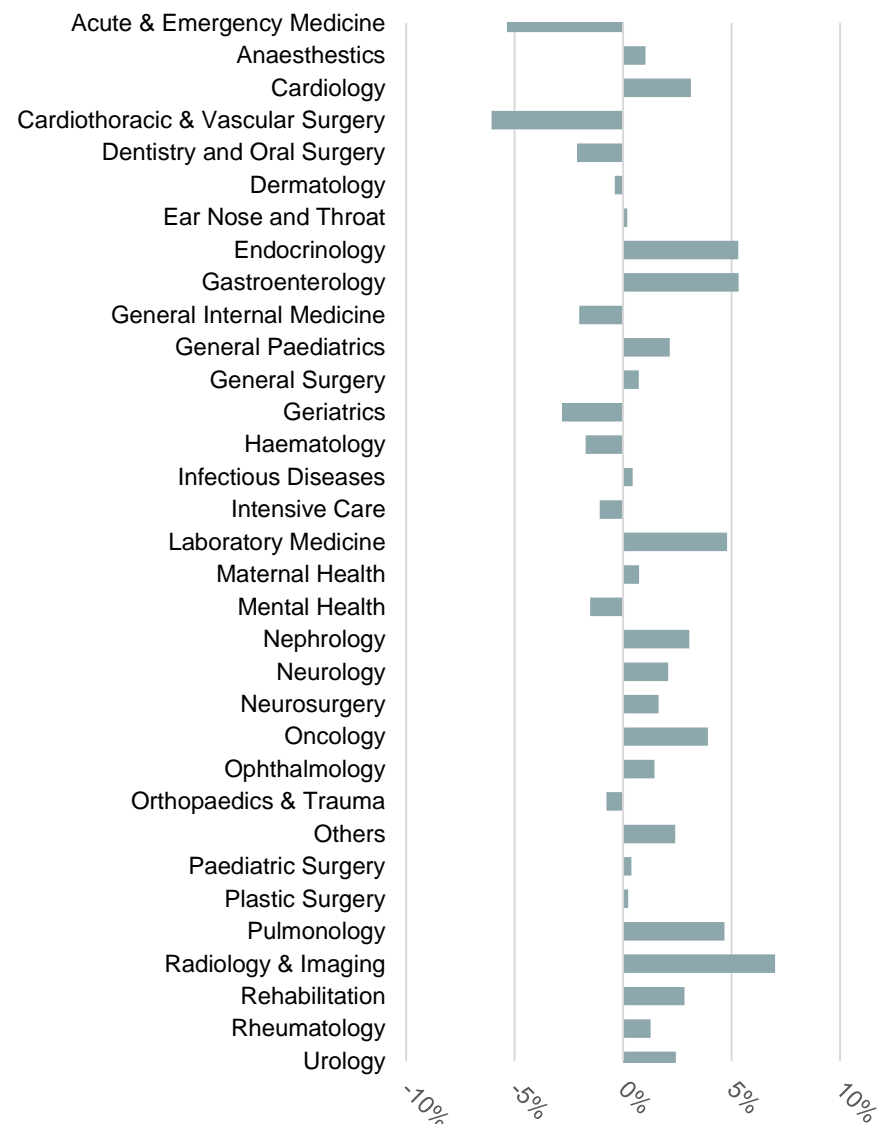
\*Activity is defined as number of episodes/attendances per 100,000 patient years

# Historic rate of change in activity rates (2014/15 – 2019/20) <sup>+</sup> LCP powering possibility

Annual rate of change - Inpatients

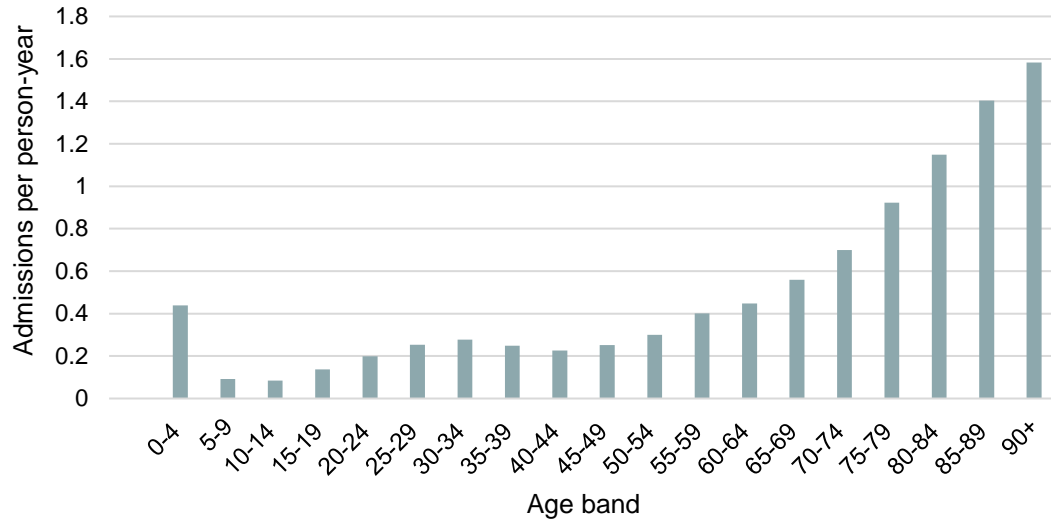


Annual rate of change – Outpatient

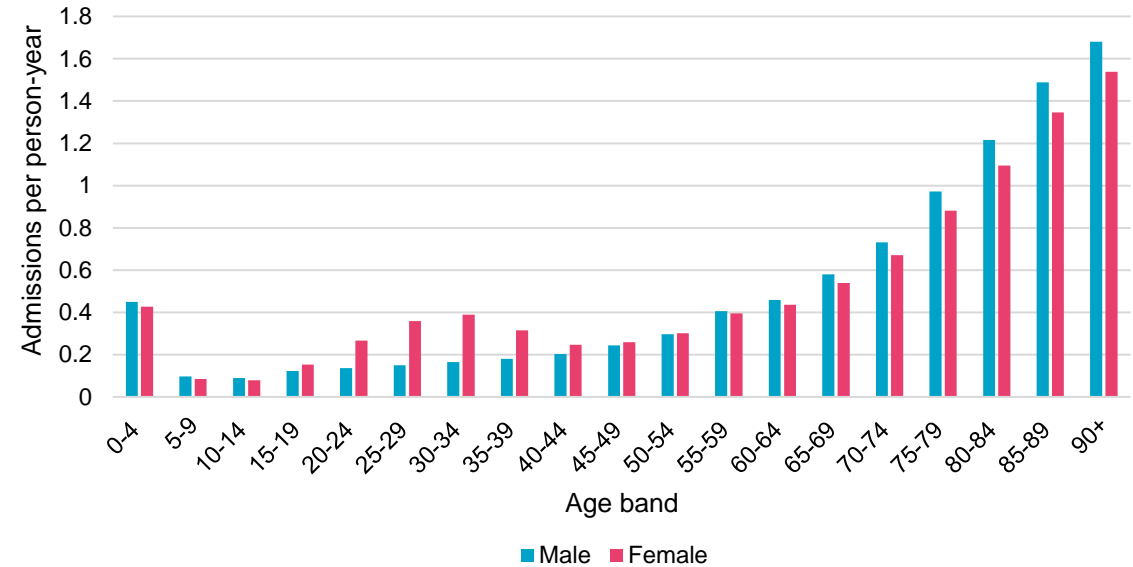


## Baseline inpatient activity – by age and sex

### Activity rates by age



### Activity rates by age and sex



The publicly available HES inpatient data provides a breakdown of activity by age bands; it further provides the proportion of activity in each sex group. This information is used to approximate activity by sex in each age group, taking into account the population size and relative risk of admission for each sex.

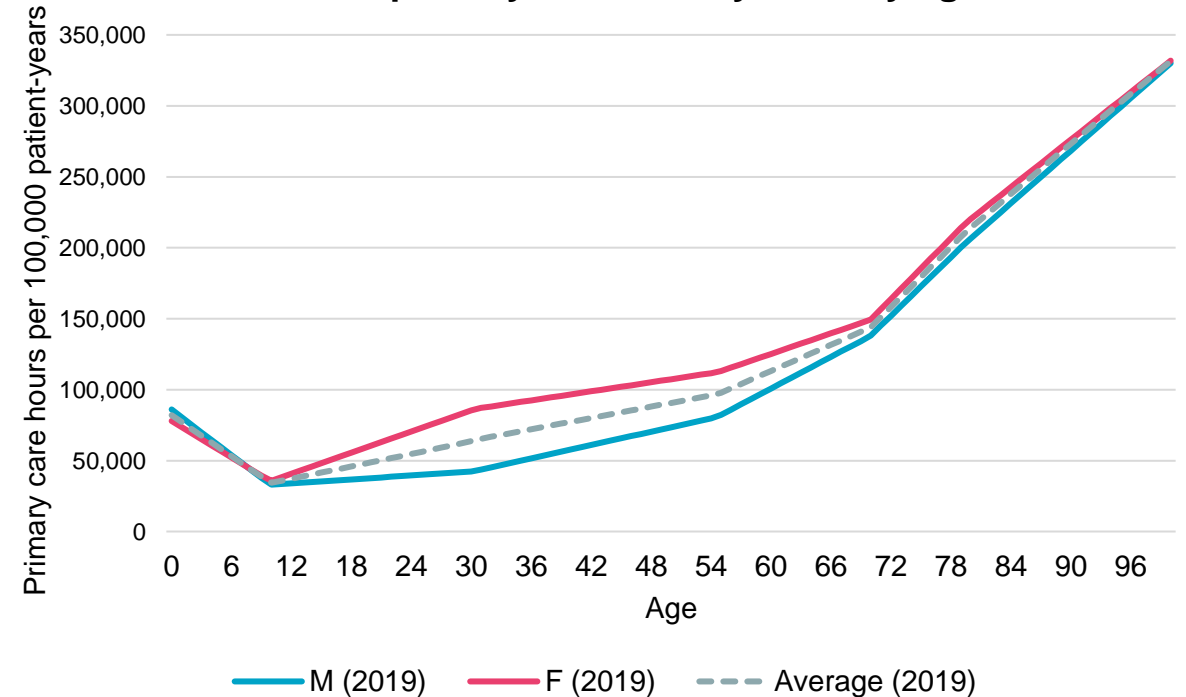
# We combined several datasets to obtain the baseline levels of primary care activity and costs



## Data Sources

- In absence of comprehensive activity data, we combine several sources to calculate the baseline activity rates:
  - We use NHS activity rates for the period from 2020 onwards.
  - As this only reports the aggregate rate, we use the GP funding formula age ratios to break down the activity rates by age group.
- We use the PSSRU 2020 publication and 2013 Nursing Survey to derive the cost of primary care activity.
  - We use a weighted average of unit costs for GP and nurse appointments.
- Our projections assume future activity growth in primary care activity of 2.5% pa.
  - The next page contains more detail on this assumption.

## Modelled primary care activity rates by age



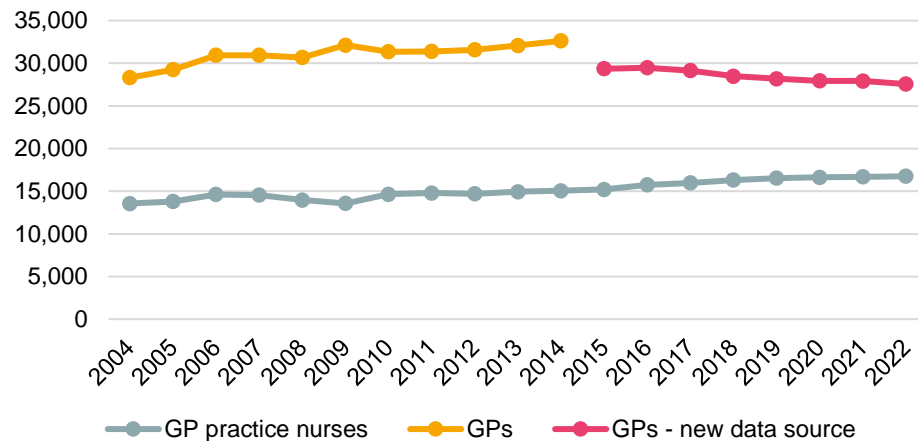
The average baseline (2019) cost per hour of GP/nurse time from the PSSRU 2020 publication is £212. We have scaled this up to a figure of £253 for overall GP surgery costs (including overheads) based on top-down expenditure data from the ONS.

# Plans to increase GP workforce and reform care delivery suggest increased future growth in primary care activity



## Flat historic growth

Primary care staff over time



- The number of primary care staff was largely flat from 2004 to 2022, especially after allowing for population growth.
- Recently, there has even been a slight decline in the number of primary care staff.
  - Using NHS Workforce data from September 2015 to September 2022, we observe a decrease of 0.07% pa.

## Plans for future growth

- Despite these historic trends, there are reasons to believe that growth will be higher going forwards:
  - Resource gap: recent levels of primary care capacity have not been sufficient to keep up with demand, [as indicated by the 2023 GP Patient Survey](#), suggesting the need for additional future resource to make up the backlog.
  - High number of GPs in training: the NHS's first-ever [long-term workforce plan](#) aims to increase the number of training places for GPs by 50% by 2031, resulting in 2,000 more trainees each year and a consequent 46% increase in the number of FTE GPs between now and 2036/37.
  - Reform of how primary care services are delivered: for example, [pharmacies will be authorised to prescribe medication](#), potentially freeing up GP time that would have otherwise been spent on writing prescriptions and providing greater overall capacity in the primary care sector.

Based on long-term workforce plans, we assume 2.5% pa growth in primary care activity

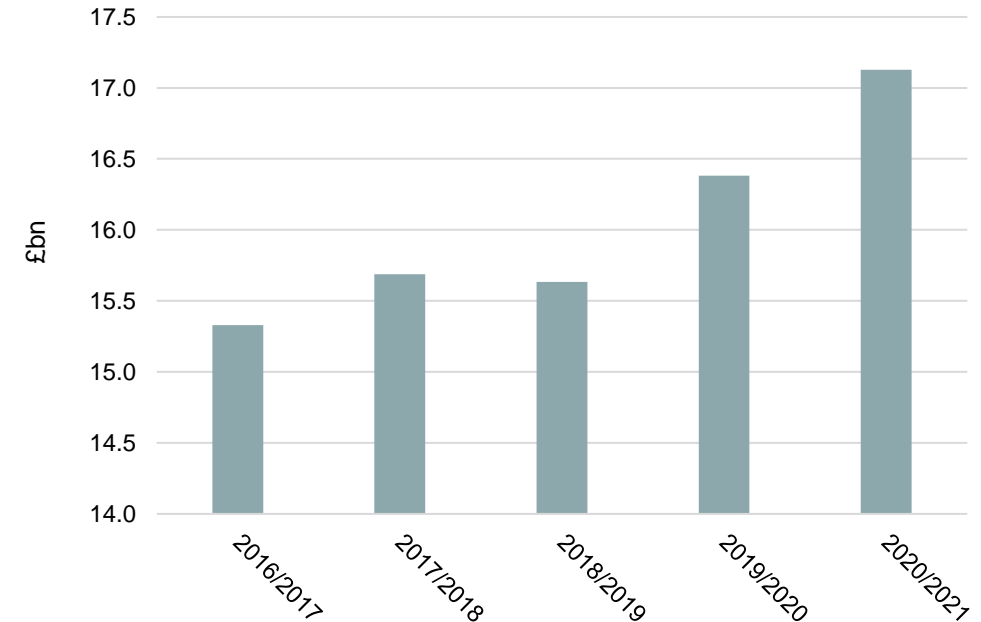


# Prescribing and other costs

## Prescribing

- For the baseline values and trends, we use prescription data published by the NHS Business Services Authority for the period from 2016/17 to 2020/21.
- We include total prescribing from the following settings:
  - *Hospital prescribing issued within hospitals*
  - *Dental prescribing dispensed in the community*
  - *Hospital prescribing dispensed in the community*
  - *Primary care prescribing dispensed in the community*
- Prescribing can be measured as either the **number of items prescribed** or the **overall spend on the prescription**.
  - We use the overall spend in the analysis, as the number of items does not accurately capture the volume of the active ingredients.

## Total cost of prescribing over time



## Other costs

- Other items of healthcare expenditure not covered by our detailed modelling include dental practices, providers of home healthcare, other ambulatory providers, preventive care services and admin/financing.
- In the absence of detailed data on these items, and based on recent observed trends, we have projected these “other” costs in line with hospital, GP and prescribing costs.

## Rate of change in activity rates

### Hospital activity

- We first calculate the linear trend for the period from 2014/15 to 2019/20:
  - Separately for each treatment specialty in the inpatient and outpatient setting; and
  - Separately for Major A&E and Minor A&E units (this includes single specialty and Minor Injury/Walk in Centre Activity).
- For hospitals, we then uplift the calculated trend for each specialty by comparing the overall rate of activity growth (across all specialties) from 2004/05 to 2019/20 against the rate from 2014/15 to 2019/20. This results in a 0.1% pa uplift for outpatients and a 0.7% pa uplift for outpatients.

### Primary care

- We assume 2.5% future growth in GP activity, based on government plans to increase primary care capacity (further detail on page 16).

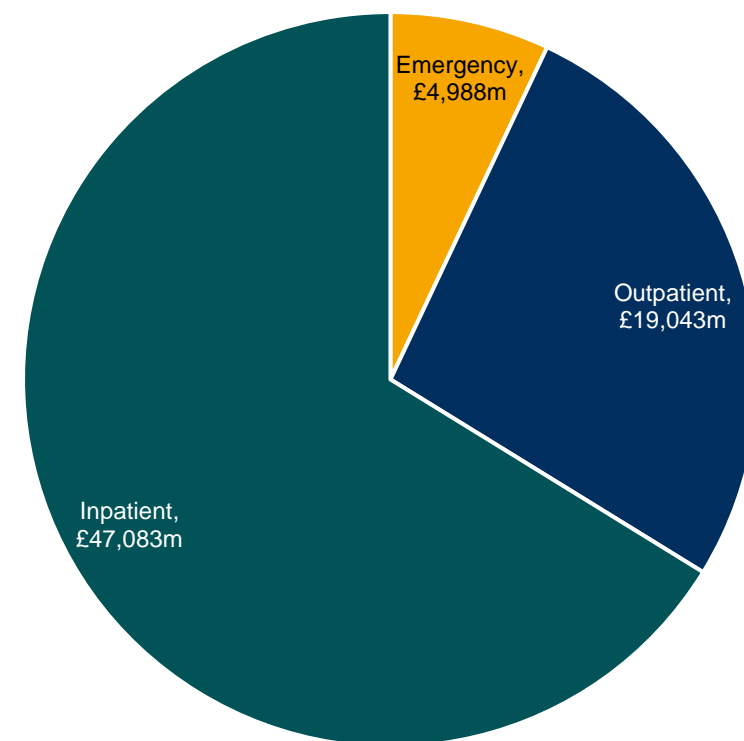
### Prescribing

- We project total prescribing costs by extrapolating from 2016/17 - 2019/20 data.

### Other activity

- In the absence of detailed data on these items, we assume all other items move in line with hospital, GP and prescribing costs. This is consistent with 2014/15 to 2019/20 trends.

### Split of hospital expenditure (2019/20)



# Adjusting for historical rate of change in activity

*Activity growth was limited over 2014/15-2019/20 due to capacity constraints*

- Due to austerity policies and capacity constraints, growth in activity in the period 2014/15 - 2019/20 was relatively low.
- Our approach makes no direct allowance for increasing levels of unmet need as evidenced by increasing waiting times.
- Analysis conducted by the [IFS](#) has documented a gradual increase in backlogs in patient care and hospital maintenance since 2010, which has subsequently accelerated since 2015.
- To address this issue, we make an adjustment to capture long term activity growth, capturing the period from 2004/05 to 2019/20.
  - Our detailed regression analysis to determine growth rates over 2014/15 - 2019/20 could not be extended back to 2004/05 due to data constraints.
  - Instead, we calculate linear trends in total activity using the available data for the periods 2004/05 - 2019/20 and 2014/15 - 2019/20.
  - The adjustment applied to the more detailed regression-based 2014/15 - 2019/20 growth rates is the ratio between the two linear trends.

# The increase in other activity is driven by the high growth of “not elsewhere classified” expenditure



## The “Other” category is comprised of the following:

**Dental:** This category includes costs related to oral health and dental procedures. Between 2014 and 2019, it saw an annual growth rate of 0.57% (in nominal terms), indicating a relatively slow increase.

**Home Healthcare:** This comprises expenses related to the provision of healthcare services in the home setting. The annual growth rate from 2014 to 2019 was substantial at 3.85%.

**Other Ambulatory:** This includes costs associated with outpatient healthcare services not categorized elsewhere. It had an annual growth rate of 2.72% in the period of 2014-2019. It accounted for the biggest proportion of other costs in 2019.

**Ancillary Services:** These are supplementary healthcare services. The annual growth rate for this category from 2014-2019 was 4.66%.

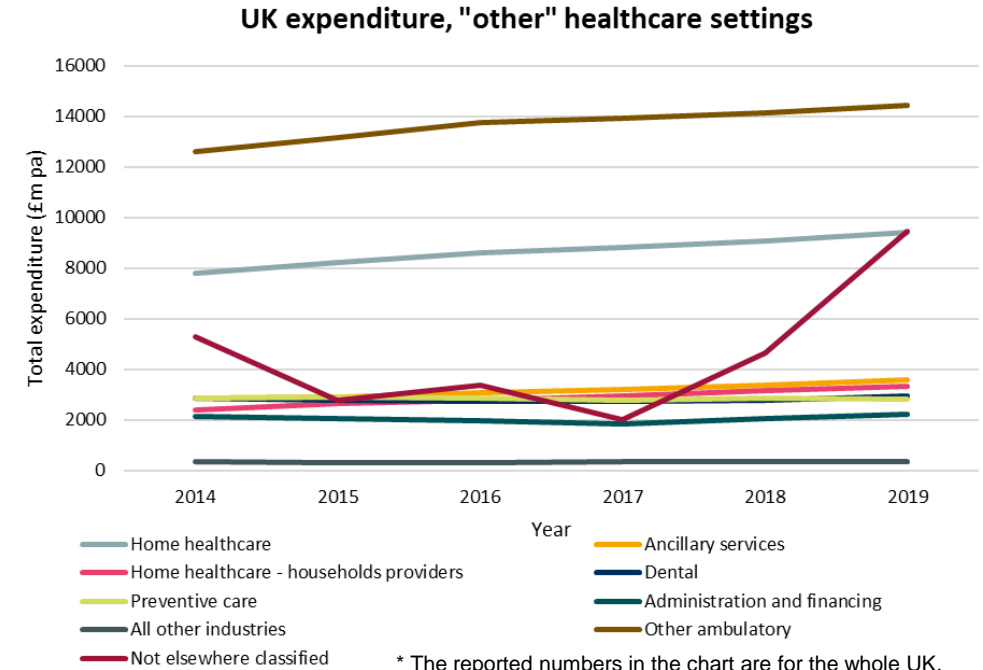
**Preventive Care:** This encompasses expenses for health services primarily focused on disease prevention, like screenings and vaccinations. Interestingly, it experienced a slight decline (0.19% pa) in nominal terms from 2014-2019.

**Administration and Financing:** Costs in this category stem from managing and financing healthcare services. This sector saw an annual growth rate of 0.76% from 2014-2019.

**Home Healthcare - Household Providers:** This subcategory represents the costs related to services provided by household members in a home healthcare setting. It had a significant annual growth rate of 6.85% between 2014 and 2019.

**All Other Industries:** This category includes costs not classified under the above categories within the broader healthcare sector. It had a moderate annual growth rate of 1.42% from 2014-2019.

**Not Elsewhere Classified:** This category also encompasses costs not fitting into any of the specified categories. It demonstrated the highest annual growth rate at 12.27% from 2014-2019, coming in second in proportion after Other Ambulatory costs in 2019.



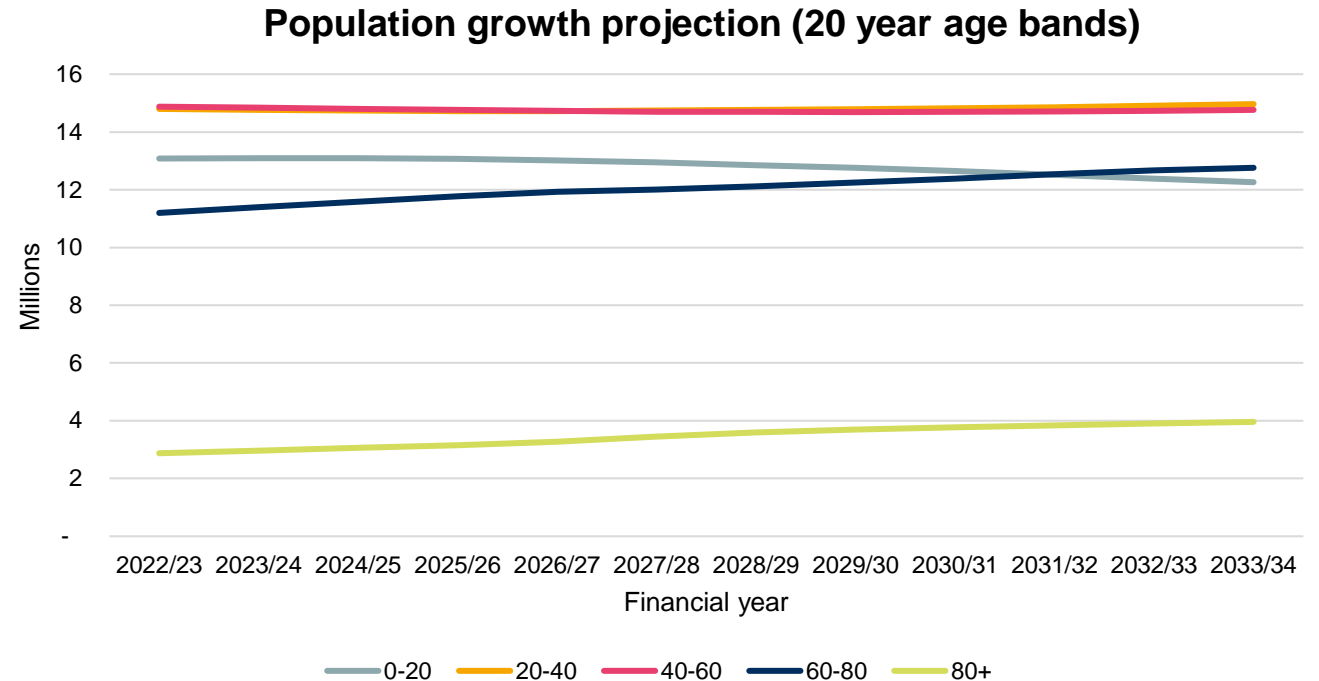
The annual growth in the “Other” category was 4.41% including “Not elsewhere Classified” and 2.94% excluding it.

The “not elsewhere classified” category is very volatile and is often revised retrospectively by the ONS. There is therefore a large amount of uncertainty over how it will behave going forwards. Hence, we have excluded it from our projection of the “Other” costs, leading to a growth rate that is roughly in line with the growth of hospital, GP and prescribing costs. To avoid spurious precision, we have assumed the “Other” costs grow exactly in line with the weighted average of hospital, GP and prescribing costs going forwards.

# Population demographics

*Projected using ONS models and healthcare cost indices*

- We use the ONS mid-2020 population projections by sex and year of age as our starting point.
- We adjust these to reflect the difference between the projected mid-2021 population figures within the mid-2020 projections and the updated ONS mid-2021 population estimates, as only the latter reflect 2021 census data.
- We then calculate average projected populations over each financial year between 2022/23 and 2033/34.



We project the total population to increase from 56.8 million in 2022/23 to 58.7 million in 2033/34

# Unit cost projections

## Description of method

- We project future costs based on the Consumer Price Index (CPI) inflation.
- We project CPI using the LCP gilt inflation curve, which is fitted to data on the difference between yields on fixed-interest and index-linked government bonds with various future maturity dates. To account for the fact that these bonds are RPI-linked, we deduct an RPI-CPI gap of 0.9% pa from the gilt inflation curve up to 31 January 2030 and 0.1% pa thereafter.
- We explored the relationship between CPI and NHS specific price indices, published by the Department of Health and Social Care (more details on the following page):
  - NHS Pay Index
  - Clinical supplies and Services
  - Non-clinical supplies and Services
  - Premises
  - Depreciation
- While these indices mostly move in line with CPI, we observe some exogenous shocks in certain years; to remove the effect of these, we project unit costs in line with CPI in the core scenario.

## CPI projection

Year from	Year to	CPI*
2019/20	2020/21	0.6%
2020/21	2021/22	4.0%
2021/22	2022/23	9.8%
2022/23	2023/24	5.1%
2023/24	2024/25	3.0%
2024/25	2025/26	2.7%
2025/26	2026/27	3.0%
2026/27	2027/28	3.0%
2027/28	2028/29	2.9%
2028/29	2029/30	2.9%
2029/30	2030/31	3.3%
2030/31	2031/32	3.6%
2031/32	2032/33	3.6%
2032/33	2033/34	3.5%

Observed  
CPI

Part-observed,  
part-projected

Projected  
CPI

# Historical trends in medical cost indices



## Description of method

### Hospital costs

- While the NHS pay index, which is published by DHSC and measures staff salary increases, moves broadly in line with the general inflation index (see Figure 1), we observe fluctuations in the period from 2004/05 to 2018/19 (*consistent indices are not available after this period*). In particular, we observe:
  - Higher salary increases compared to inflation in the period 2004/05 - 2006/07.
  - Salary increase in line with inflation in the period 2007/08 - 2009/10.
  - Large drop in salary increases in the period from 2010/11 - 2013/14.
  - Broadly in line with inflation after 2014/15.
  - These outliers make any regression-based method very sensitive to the selection of the time period.
- To avoid projecting past biases in the future projection, we assume the staff and non-staff costs are increasing in line with CPI
- We have also explored using the GDP deflator instead of CPI; as can be seen in Figure 2, both indices grow at a similar rate over time and are closely aligned with healthcare expenditure growth. We therefore decided not to adjust our unit cost projections to depend on the GDP deflator.

### GP costs

- Historic GP costs between 2014/15 and 2018/19 move very closely in line with CPI. We have used CPI to project these costs too, although the projection would not be materially different if we projected directly from historic index values.

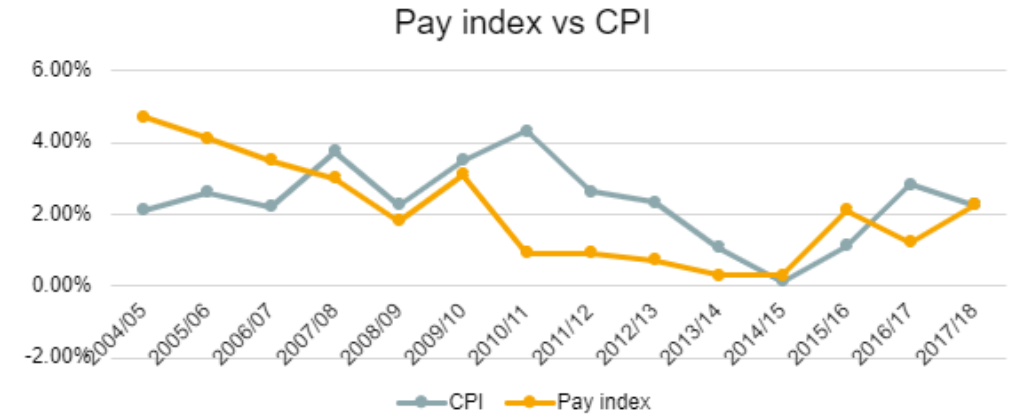


Figure 1

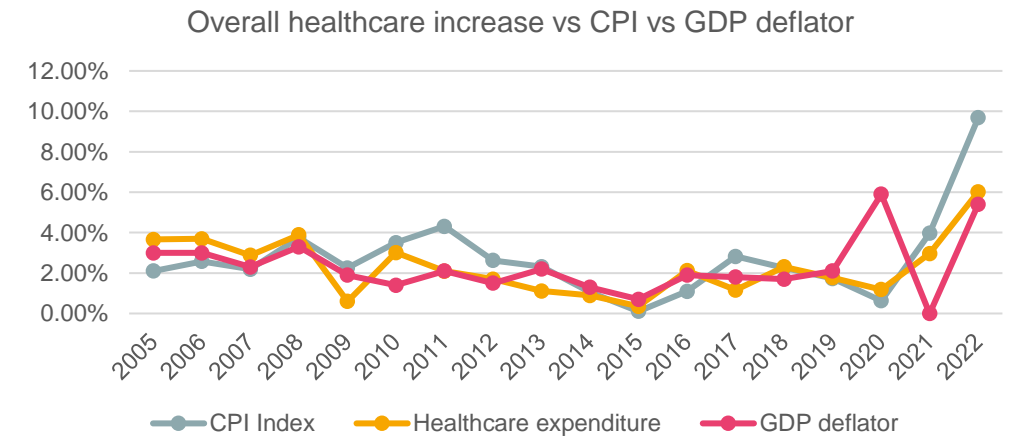
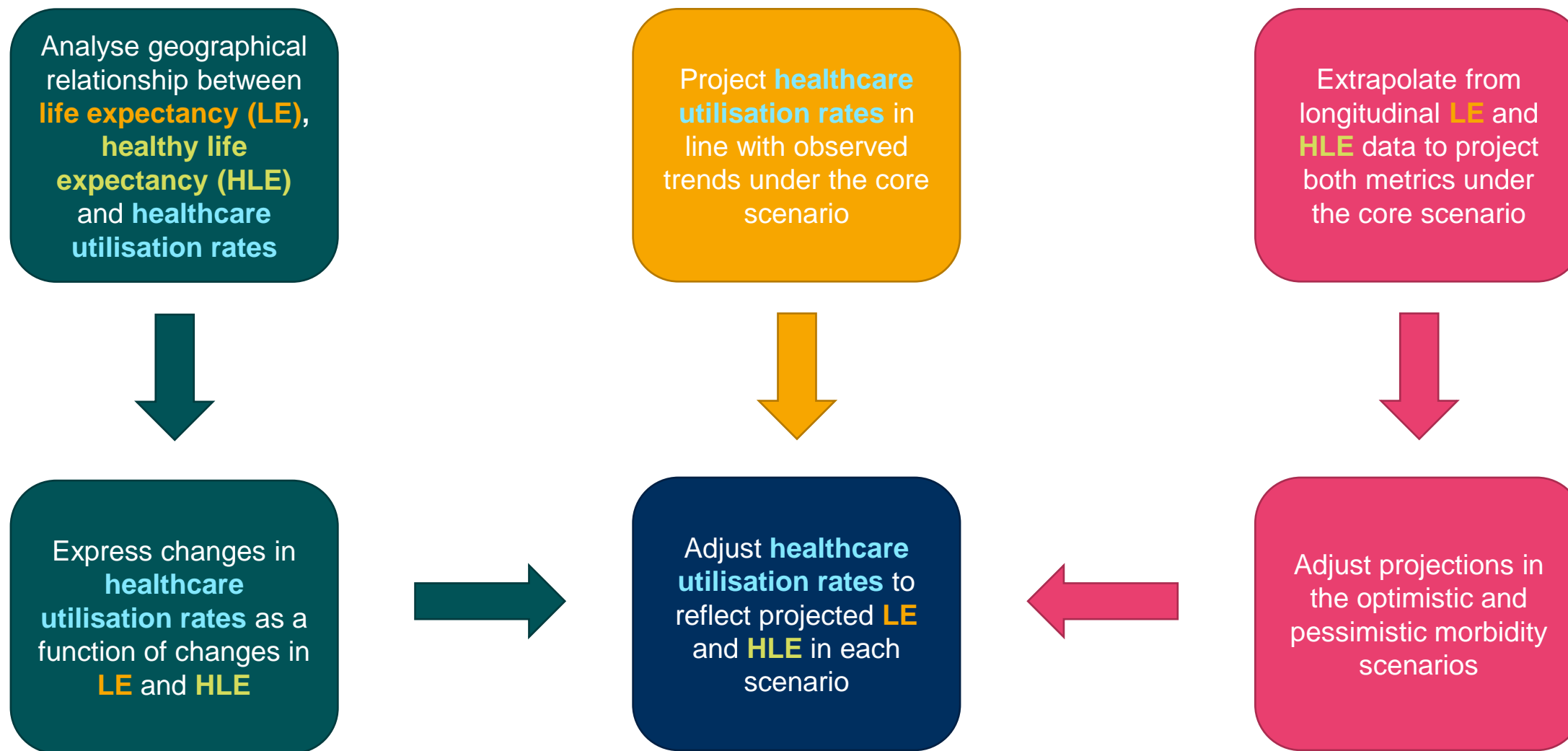


Figure 2

# Scenarios: linking population health to activity

Measure population health using healthy life expectancy



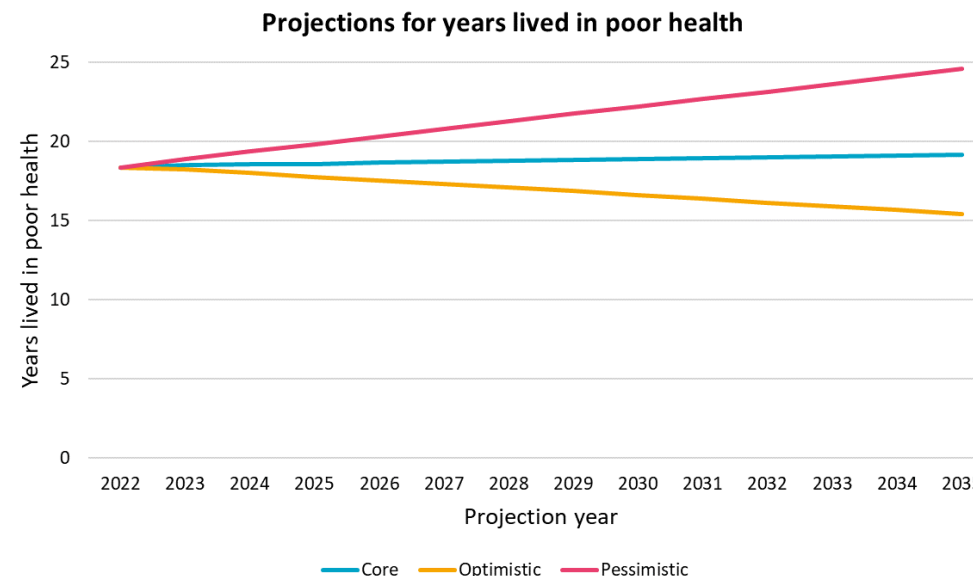
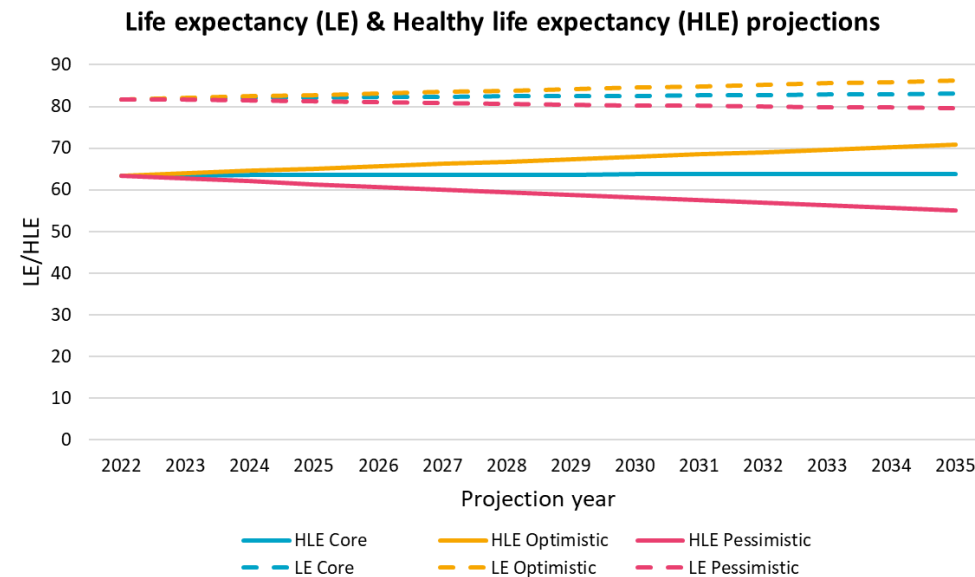




# Healthy life expectancy

- We project life expectancy (LE) and healthy life expectancy (HLE) to 2033/34 and use their difference (i.e. number of years lived in poor health) as a proxy for overall population morbidity. The following page describes how we have linked this measure to healthcare utilisation rates.
- Our core scenario assumes that [ONS life expectancy projections](#) play out in practice. We calculate HLE in each projection year using the Sullivan method and assuming that the [ONS health prevalence rates](#) for 2018-20 (based on 2011 Census data) remain in force.
- Our optimistic scenario involves increasing our projections of healthy life expectancy to reflect the gains seen in the 2000s. We apply a corresponding improvement in mortality rates to obtain revised estimates of the number of years lived in poor health.
- Our pessimistic scenario is the reverse of the optimistic scenario. From a calculation perspective, our optimistic and pessimistic projections involve tapering health prevalence and mortality rates to align with the second least and second most deprived decile of the England population respectively. In practice, this results in the following annual rates of change, with the 0.9% pa growth in HLE under the optimistic scenario in line with the actual gains in HLE seen between 2000-02 and 2009-11:

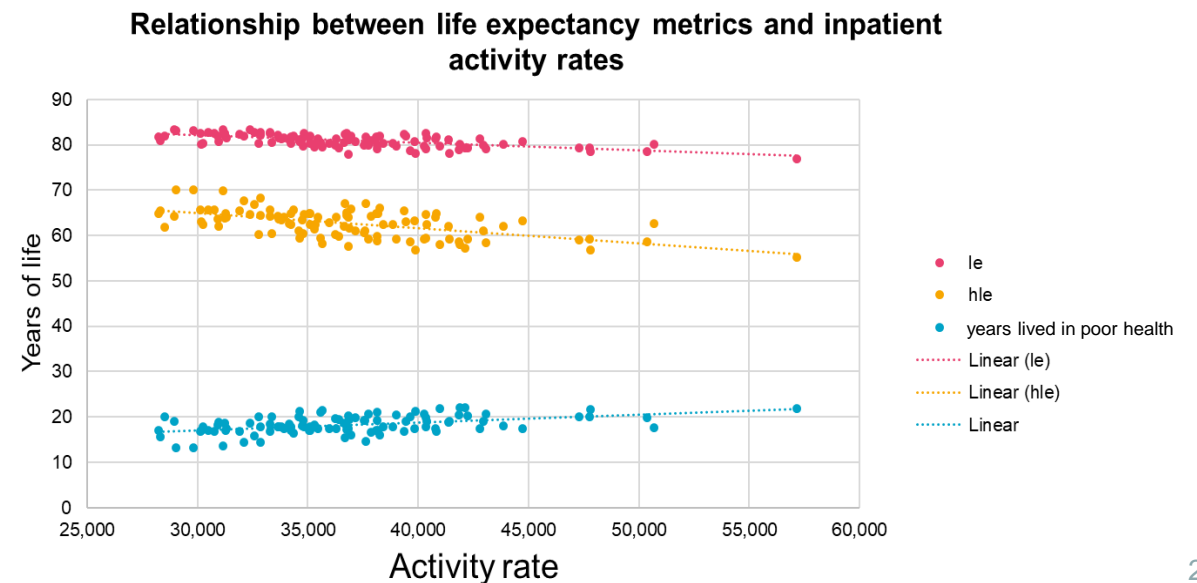
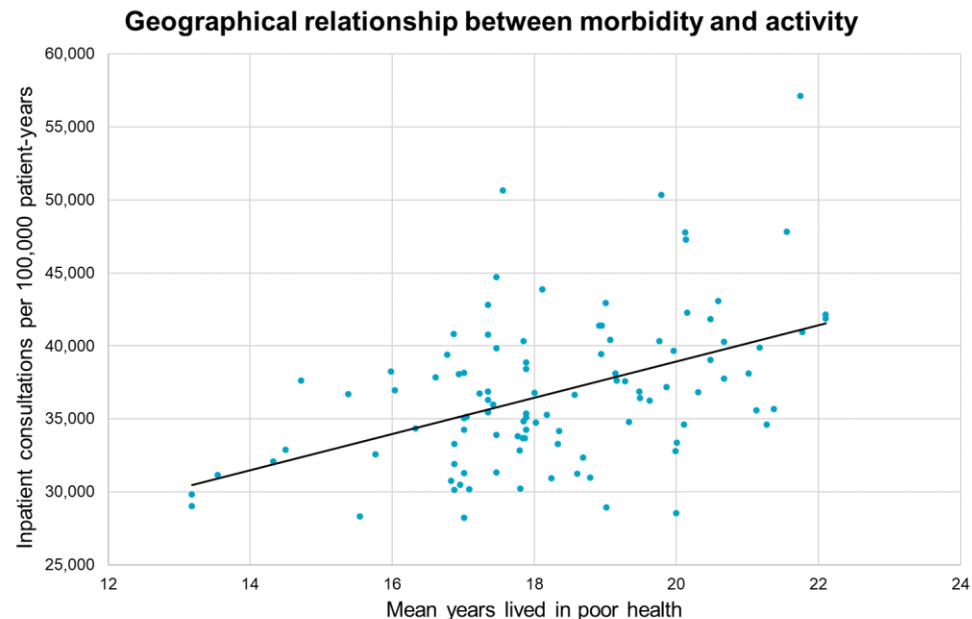
Metric	Core scenario	Optimistic scenario	Pessimistic scenario
Life expectancy	+0.1% pa	+0.4% pa	-0.2% pa
Healthy life expectancy	+0.1% pa	+0.9% pa	-1.1% pa
Years lived in poor health	+0.3% pa	-1.3% pa	+2.3% pa



# Morbidity scenarios



- To translate changes in morbidity into changes in activity, we investigate the geographical relationship between the number of years lived in poor health and the rate of inpatient activity across the 103 sub-ICBs in England.
- As illustrated on the left-hand chart below, there is a positive correlation between these two variables (Pearson correlation coefficient of +0.46). The right-hand chart additionally shows the relationship with LE (Pearson coefficient of -0.63) and HLE (coefficient of -0.57).
- As we do not have comparable data for outpatients at the same level of granularity, we assume that the same coefficient of +0.46 applies for outpatients and A&E departments as for inpatients.
- We use this coefficient, alongside the relative standard deviations of the datasets, to convert modelled changes in morbidity metrics into predicted changes in hospital activity.
- We assume that changes in morbidity do not impact GP surgery activity, as we would expect demand for primary care to be linked to health-seeking behaviour as well as underlying population health, which may lead to an offsetting effect.



# Substitution between A&E appointments and GP services

- We explore a scenario in which we assume a proportion of Minor A&E activity can be transferred to GP services.
  - We calculate the proportion of transferable activity based on reported HRG activity from the 2019/20 Reference Cost collections.
  - We assume that all activity grouped to the HRG “VB11Z - Emergency Medicine, No Investigation with No Significant Treatment” can be transferred to GPs.
- We assume in this scenario that GP and transferable A&E activity grow at the same rate.
  - The rate is calculated in such a way that the transferable A&E activity decreases linearly to zero in 2033/34.
- We further assume that the aggregate number of A&E and GP appointments in 2033/34 is the same as in the core scenario.

Under this scenario the GP growth rate changes from 2.5% pa to 2.6% pa

Under this scenario the minor transferable A&E growth rate changes from 3.2% pa to -7.1% pa

These changes have a small effect on total healthcare expenditure growth (reduction of less than 0.1% pa), mainly due to the size of the GP sector (320 million+ appointments) compared to the volume of transferable minor A&E activity (4 million)

# Calculation of baseline total costs: approach

- We gathered ONS data on total government-financed current expenditure, split by healthcare provider and function (but not split by age/sex/treatment specialty), for each calendar year between 2019 and 2022, before adjusting the totals to align with published expenditure figures from the Department of Health and Social Care (DHSC). For illustration, we have shown the calculations for 2019 here and on the following page.
- The ONS data covers the whole UK in 2019. We apply the scaling factors opposite to translate it into estimated expenditure in England in the financial year 2019/20.
- We exclude expenditure on residential long-term care facilities (assumed to be social care) and “rest of the world” (outside of England scope).
- We compare the “top-down” ONS total cost data against a “bottom-up” calculation using our other data sources for hospitals and GPs, i.e. activity levels (*HES/GP funding formula*) \* unit costs (*RC/PSSRU*) = estimated total costs.
- We scale our bottom-up figures (for each age/sex/specialty cell) by a factor of 1.39 for hospitals and 1.16 for GPs such that the total costs match the ONS top-down data.
- Finally, we compare our total ONS-based figure (£138.4bn) against the DHSC figure for 2019/20 (£134.2bn) and scale our baseline costs in each healthcare sector down such that the total matches the DHSC figure of £134.2bn.
- We carry out equivalent calculations for 2020/21, 2021/22 and 2022/23, the last of which are based on provisional ONS data for 2022.

Population scaling:  
 $56.35\text{m [England, 2019/20]} / 66.79\text{m [UK, 2019]} = 0.844$

Inflation adjustment:  
 $(108.5 \text{ [average CPI, Jan-Mar 2020]} / 106.7 \text{ [average CPI, Jan-Mar 2019]} - 1) / 4 = 0.42\%$

## Healthcare providers

- Hospitals
- ~~Residential long-term care facilities~~
- Offices of general medical practitioners
- Other ambulatory providers
- Providers of medical goods
- Providers of preventive care
- Providers of healthcare system administration and financing
- Households as providers of home healthcare
- All other industries as secondary providers of healthcare
- ~~Rest of the world~~
- Not elsewhere classified

## Calculation of baseline total costs: example

- The boxes below set out our calculation of ONS-based baseline healthcare costs and GDP in England in the 2019/20 financial year.
- The raw data in the healthcare cost calculation (in blue below) is from this ONS file: <https://www.ons.gov.uk/file?uri=/peoplepopulationandcommunity/healthandsocialcare/healthcaresystem/datasets/healthaccountsreferencetables/2019/ukhealthaccountsreferencetables2019final.xls>.
- The raw data in the GDP calculation (in orange below) is from this ONS time series: [Gross Domestic Product at market prices: Current price: Seasonally adjusted £m - Office for National Statistics \(ons.gov.uk\)](#).
- The population scaling and inflation adjustment are calculated on the previous page.

### Healthcare cost calculation

(Total government-financed current healthcare expenditure (UK, 2019): £176.8bn  
*less*  
 Government-financed expenditure on residential long-term care facilities (UK, 2019): £13.2bn  
*less*  
 Government-financed expenditure in rest of the world (UK, 2019): £0.2bn)  
*multiplied by*  
 UK to England population scaling: 0.844  
*multiplied by*  
 Calendar to financial year inflation adjustment: 1.0042  
*equals*  
 Baseline healthcare costs (England, 2019/20): **£138.4bn**

### GDP calculation

(UK GDP in Q2 2019: £556.3bn  
*plus*  
 UK GDP in Q3 2019: £563.2bn  
*plus*  
 UK GDP in Q4 2019: £567.7bn  
*plus*  
 UK GDP in Q1 2020: £559.9bn)  
*multiplied by*  
 UK to England population scaling: 0.844  
*equals*  
 Baseline GDP (England, 2019/20): **£1,896bn**

## Alignment with DHSC accounts

- The final step in setting our baseline cost figures for 2019/20 – 2022/23 is to adjust the totals to align with the reported figures in the Department of Health and Social Care (DHSC)'s annual report and accounts. As DHSC accounts for 2022/23 are not yet available, we uplift the figure from the 2021/22 accounts in line with the growth in ONS-reported healthcare expenditure between 2021/22 and 2022/23.
- The following table summarises the adjustments made:

Financial year	ONS data with LCP adjustments	DHSC reported expenditure	Scaling applied
2019/20	£138.4bn	£134.2bn	97%
2020/21	£176.2bn	£179.1bn	102%
2021/22	£181.7bn	£188.8bn	104%
2022/23	£184.3bn	£191.4bn	104%*

\* Same scaling applied as in 2021/22, as 2022/23 DHSC accounts unavailable

## Underlying productivity assumptions

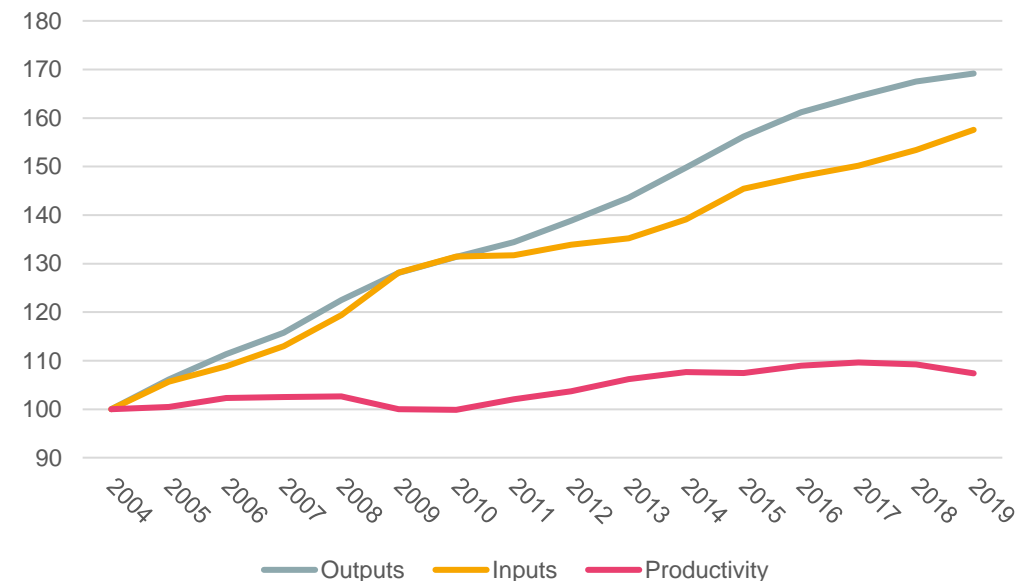
- Our core scenario assumes 0.5% pa improvements in productivity over time.
- This is in line with historical productivity growth reported by the NHS, which stands at around 0.5% per year based on the ONS estimates.
- It's important to note that measuring healthcare productivity presents inherent challenges due to the complexity of determining the true "value" of a specific medical procedure, rather than simply considering its cost.
- Technological advancements are likely to improve productivity and efficiency of the healthcare delivery (for example, by shortening the length of stay, or providing medication that does not require a surgical procedure).

Additional scenarios we examined look into the impact of enhanced productivity on healthcare.

Potential shifts that could boost future productivity growth include (among others):

- Fast technological advancements
- Increased use of AI and other efficiency-improving technologies
- Advancement in surgical techniques that improve outcomes and shorten length of stay

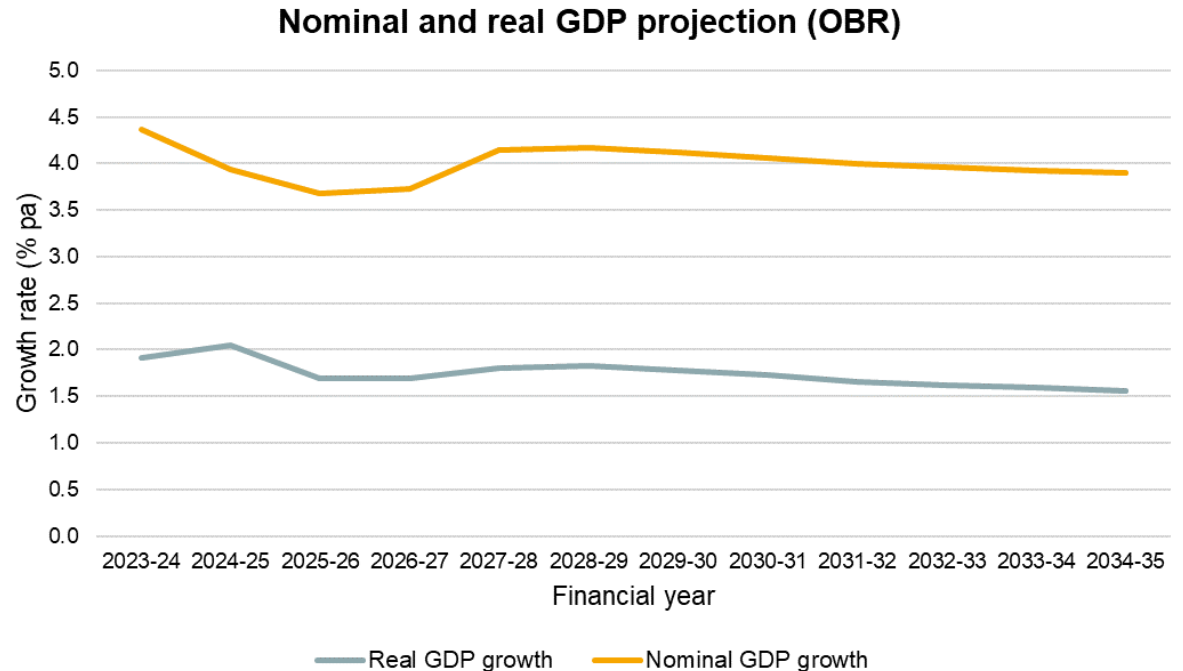
Inputs, Outputs and Productivity





## Projection of total costs

- We project population size (split by age and sex), unit costs (split by specialty) and activity rates (split by age, sex and specialty) separately for each year from 2023/24 to 2033/34. The product of these is the projected total healthcare expenditure.
- We compare these projections against the medium-term GDP forecast from the Office for Budget Responsibility (OBR)'s *March 2022 Economic and fiscal outlook*. We use the same data source to project the GDP deflator and hence calculate a real rate of healthcare expenditure growth.
- We supplement the projections with observed nominal GDP figures and GDP deflator growth rates up to and including March 2023.



$$\text{Total expenditure} = \text{population size} * \text{activity rate} * \text{cost per unit}$$





# *Results*



# Results

Summary

Core scenario

Alternative scenarios

Optimistic morbidity scenario

Productivity scenario

Combined scenarios

Zero-productivity scenario

# Results summary

## *Core scenario costs expected to grow at 3.6% pa in real terms*

- Our core scenario projects that government healthcare expenditure in England will rise at 5.7% pa in nominal terms over the period from 2022/23 to 2033/34. On average, this equates to 3.6% pa in real terms\* and 1.6% pa above GDP growth over the same period.
- We project total nominal expenditure to rise from £191bn in 2022/23 to £352bn in 2033/34. This covers government-financed expenditure in England only and excludes social care.
- We project healthcare spending to increase as a proportion of GDP, rising from 9.0% in 2022/23 to 10.7% in 2033/34.
- These projections are calibrated to past data (broadly covering the period from 2004/05 to 2019/20) and do not make allowance for future changes in government policy on healthcare funding. Our projected trends do not make significant allowance for the impact of Covid-19, given the uncertainty surrounding the long-term consequences of the pandemic for the NHS. In practice, healthcare expenditure may need to grow faster than the rates calculated under our core scenario to ease backlogs and compensate for low historic rates of funding.
- Of the 5.7% pa growth in overall expenditure, 2.6% pa is attributable to inflation of unit costs (0.7% pa below CPI), 2.3% pa to increases in underlying healthcare utilisation rates, 0.4% pa to changes in the age/sex distribution of the population (primarily population ageing) and 0.3% pa to population growth.
- We estimate that, if healthy life expectancy increased in line with the gains seen in the 2000s (around 0.95% pa) from now until 2034, this would reduce total 2033/34 expenditure to £334bn through reduced demand for healthcare services – a decrease of 5% compared to the core scenario. This scenario sees total expenditure growth of 5.2% pa on average, 3.1% pa in real terms and 1.1% pa above GDP.
- If, in addition to the above gains in healthy life expectancy, productivity also improved by 0.5% pa relative to the core scenario, total expenditure in 2033/34 would reduce to £318bn (with a real growth rate of 2.7% pa).

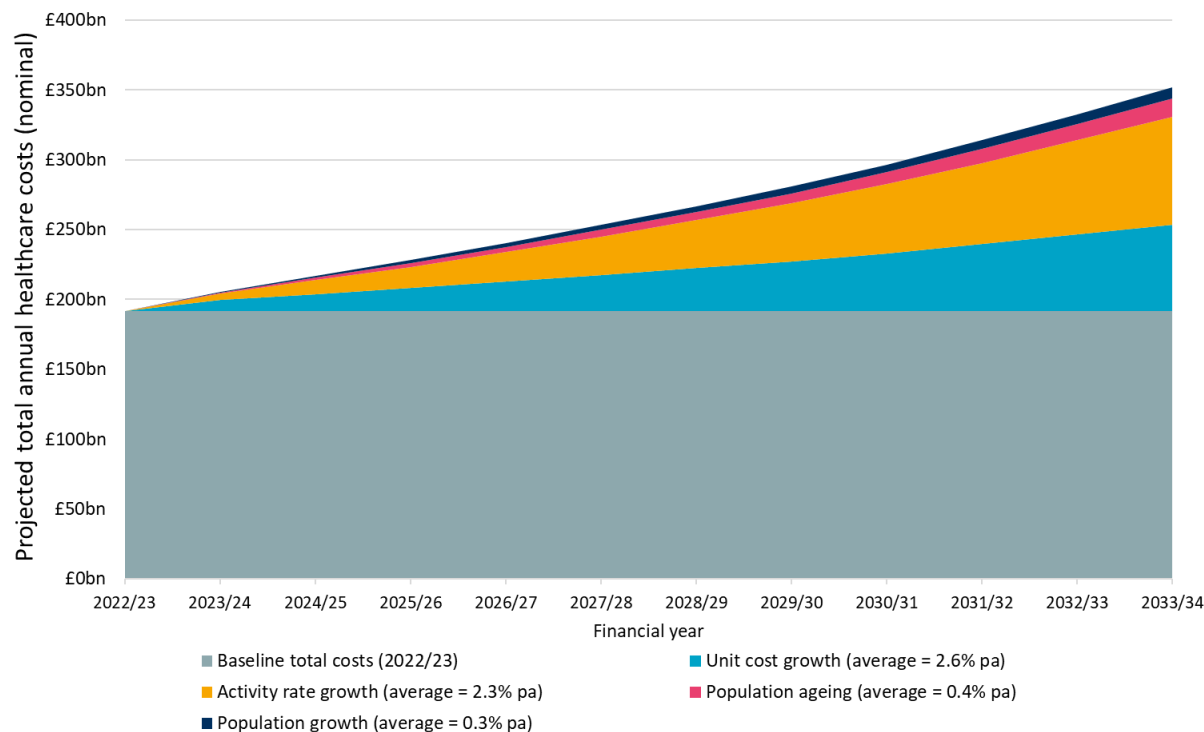
\* Growth in real terms is calculated relative to the GDP deflator

# Growth components – core scenario

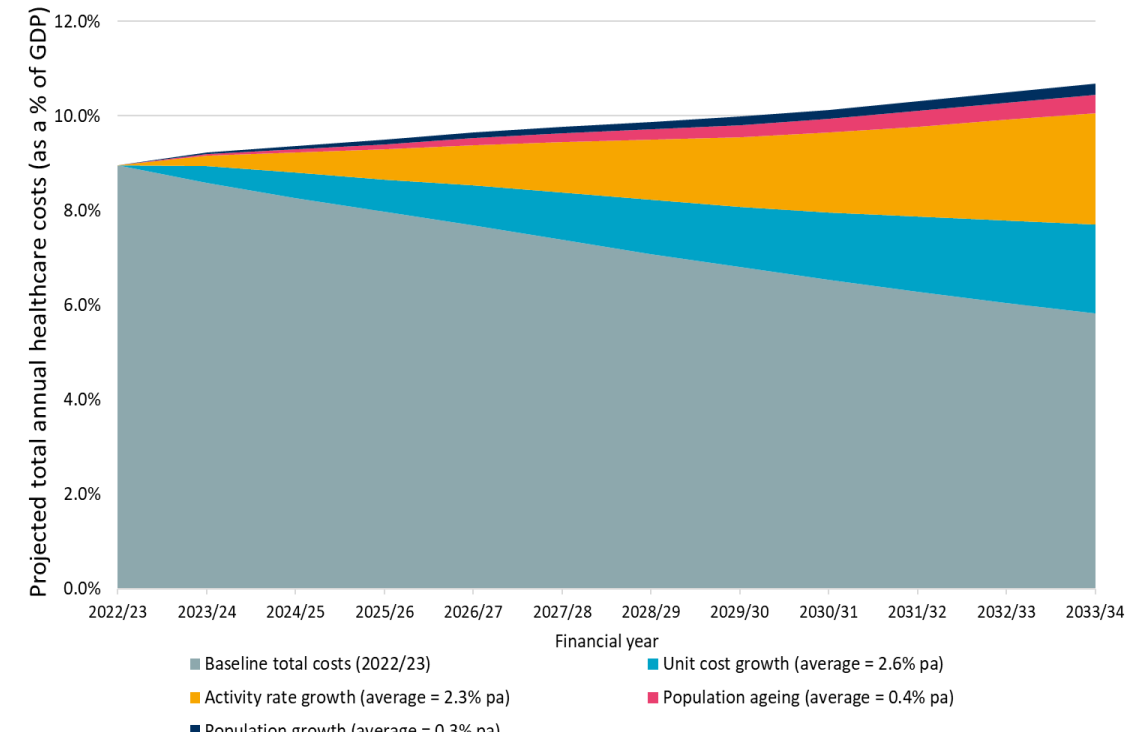
Cost growth consists of demographic changes, inflation and changes in activity

- The following charts show the breakdown of projected total healthcare expenditure between the different drivers of growth, both in nominal terms and as a proportion of GDP. The most significant driver is unit cost growth, followed by increases in underlying utilisation rates (activity rate growth).

Core scenario projections - component breakdown



Core scenario projections - component breakdown

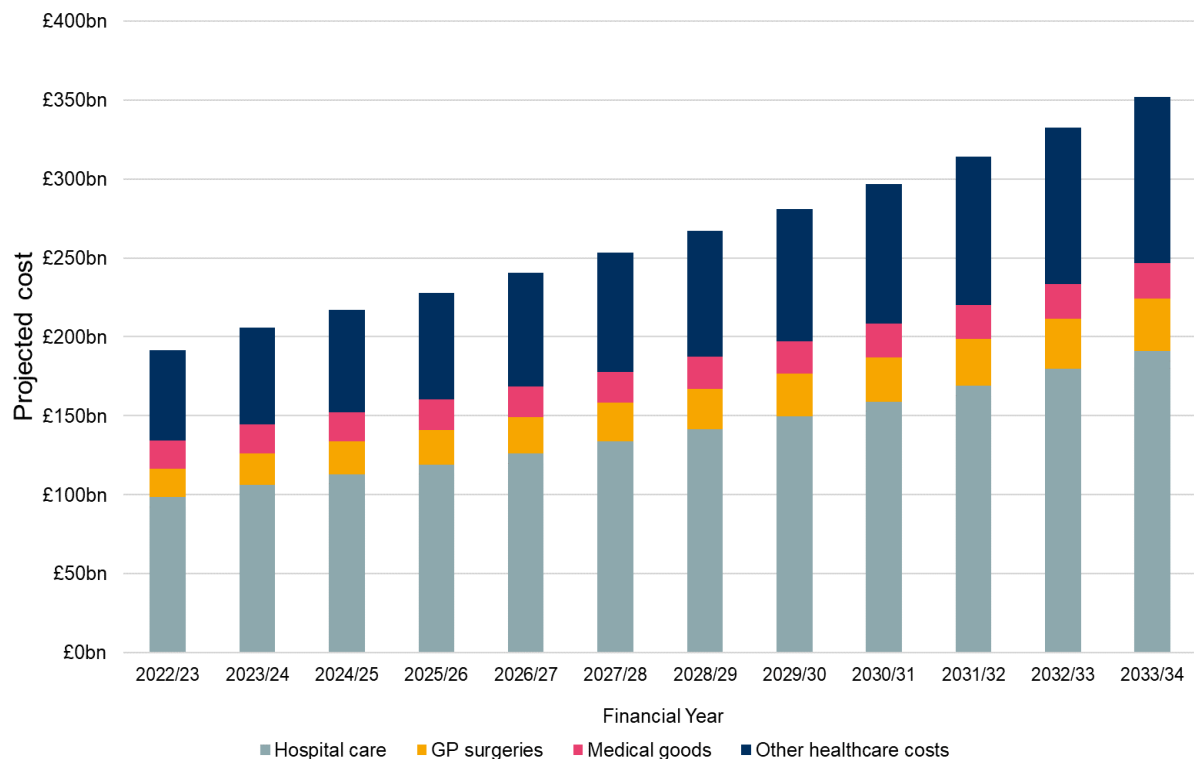


# Cost components – core scenario

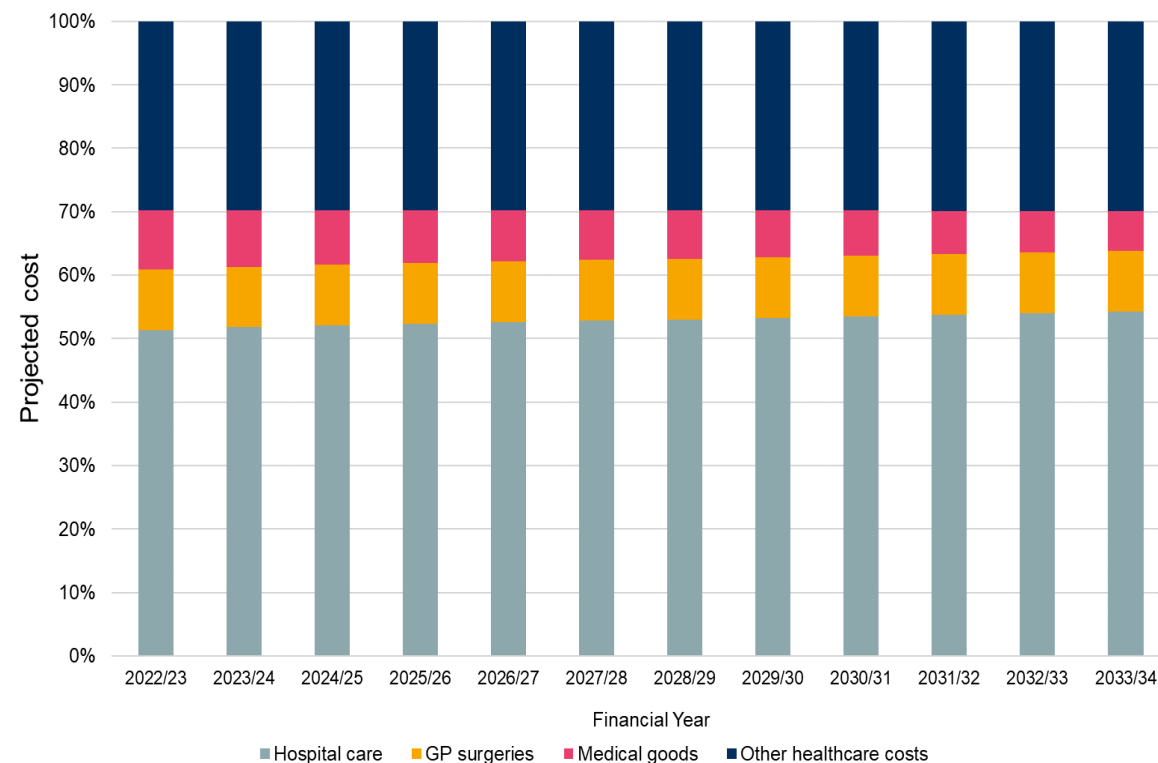
*Split between hospital, GP and other expenditure*

- The following charts show the breakdown of total projected nominal expenditure growth between different healthcare settings. Hospital care includes inpatient care, outpatient care and accident & emergency.
- The baseline 2022/23 data is based on reported expenditure in the Department of Health and Social Care’s 2021/22 annual report and accounts, uplifted for the growth in ONS-reported healthcare expenditure between 2021/22 and 2022/23.

Components of cost - core scenario



Components of cost - core scenario



# Core scenario results (“repeating history”)

This table sets out our projections under the core scenario. On average, healthcare spending is expected to increase about 3.6% pa in real terms and 1.6% pa faster than GDP growth.

Financial year	Hospital care	GP surgeries	Medical goods	Other healthcare costs	Total healthcare costs	Annual % increase (nominal)	GDP deflator	Annual % increase (real)	Gross Domestic Product (GDP)	Annual % increase (over GDP)	% of total GDP
2019/20	£68.9bn	£12.8bn	£12.6bn	£39.9bn	£134.2bn				£1,896bn		7.1%
2020/21	£91.2bn	£16.6bn	£15.8bn	£55.5bn	£179.1bn	33.5%	6.3%	25.5%	£1,762bn	43.7%	10.2%
2021/22	£96.2bn	£20.1bn	£16.9bn	£55.6bn	£188.8bn	5.4%	-0.7%	6.1%	£1,973bn	-5.9%	9.6%
2022/23	£98.3bn	£18.2bn	£18.0bn	£56.9bn	£191.4bn	1.4%	6.5%	-4.8%	£2,136bn	-6.3%	9.0%
2023/24	£106.5bn	£19.7bn	£18.3bn	£61.2bn	£205.6bn	7.4%	2.5%	4.8%	£2,229bn	2.9%	9.2%
2024/25	£112.9bn	£20.8bn	£18.7bn	£64.5bn	£216.9bn	5.5%	1.6%	3.8%	£2,317bn	1.5%	9.4%
2025/26	£119.2bn	£21.8bn	£19.1bn	£67.9bn	£228.0bn	5.1%	1.0%	4.1%	£2,402bn	1.4%	9.5%
2026/27	£126.3bn	£23.0bn	£19.4bn	£71.6bn	£240.4bn	5.4%	1.2%	4.2%	£2,492bn	1.6%	9.6%
2027/28	£133.8bn	£24.3bn	£19.8bn	£75.5bn	£253.4bn	5.4%	1.7%	3.7%	£2,595bn	1.2%	9.8%
2028/29	£141.6bn	£25.6bn	£20.2bn	£79.6bn	£266.9bn	5.3%	2.3%	3.0%	£2,703bn	1.1%	9.9%
2029/30	£149.7bn	£26.9bn	£20.6bn	£83.8bn	£281.0bn	5.3%	2.3%	2.9%	£2,815bn	1.1%	10.0%
2030/31	£158.8bn	£28.4bn	£21.0bn	£88.5bn	£296.7bn	5.6%	2.3%	3.2%	£2,929bn	1.5%	10.1%
2031/32	£168.9bn	£30.0bn	£21.4bn	£93.7bn	£314.1bn	5.9%	2.3%	3.5%	£3,046bn	1.8%	10.3%
2032/33	£179.7bn	£31.7bn	£21.9bn	£99.3bn	£332.5bn	5.9%	2.3%	3.5%	£3,166bn	1.9%	10.5%
2033/34	£190.9bn	£33.5bn	£22.3bn	£105.1bn	£351.8bn	5.8%	2.3%	3.4%	£3,291bn	1.8%	10.7%
<i>Average growth (2022/23 – 2033/34)</i>	<i>6.2% pa</i>	<i>5.7% pa</i>	<i>2.0% pa</i>	<i>5.7% pa</i>		<b>5.7% pa</b>	<i>2.0% pa</i>	<b>3.6% pa</b>	<i>4.0% pa</i>	<b>1.6% pa</b>	

# Scenario results



Scenario	Adjustment(s) made	Average nominal growth rate (total costs)	Average real growth rate (total costs)	Total costs in 2033/34
<b>Core (“repeating history”)</b>	N/A	5.69%	3.64%	£352bn
<b>Morbidity: optimistic</b>	HLE improvements in line with 2000s	5.19%	3.15%	£334bn
<b>Morbidity: pessimistic</b>	Reversing the gains in HLE of the 2000s	6.36%	4.30%	£377bn
<b>Productivity</b>	Unit costs decrease by 0.5% pa in hospital and GP settings	5.21%	3.17%	£335bn
<b>Combined morbidity (optimistic) + productivity</b>	HLE improvements in line with 2000s while unit costs also decrease by 0.5% pa	4.72%	2.68%	£318bn
<b>Deferred combined morbidity (optimistic) + productivity (“reform”)</b>	HLE improvements in line with 2000s starting after 5 years while unit costs also decrease by 0.5% pa	4.96%	2.92%	£326bn
<b>High inflation</b>	CPI inflation fixed at 3.8% pa from September 2023 (average of curve in core scenario: 3.3% pa)	6.17%	4.11%	£370bn
<b>Low inflation</b>	CPI inflation fixed at 2.0% pa from September 2023 (average of curve in core scenario: 3.3% pa)	4.73%	2.69%	£318bn
<b>Zero productivity growth (“post-pandemic new normal”)</b>	Unit costs grow in line with CPI	6.17%	4.11%	£370bn

- The following page sets out further detail on how we have derived each scenario and a chart comparing the growth rates.
- We explored a further scenario showing some activity from A&E units being absorbed by GP surgeries, but the impact of this is negligible compared to the other scenarios explored above.

# Scenarios comparison

## Morbidity

- We use healthy life expectancy (HLE) as a proxy for morbidity.
- In our optimistic scenario, we assume that health prevalence and mortality rates improve gradually from 2022 such that they match the rates currently seen in the second least deprived decile of the English population by 2032. This corresponds to an annual rate of growth in HLE comparable to the improvements seen between 2001 and 2010 (around 0.95% pa).
- The pessimistic scenario reverses this and aligns 2032 health prevalence and mortality rates with those currently seen in the second most deprived decile.
- We translate these changes in HLE into changes in hospital activity by looking at the observed geographical correlation between the two variables. We assume that other healthcare settings (e.g. GP surgeries) are not impacted by changes in HLE.

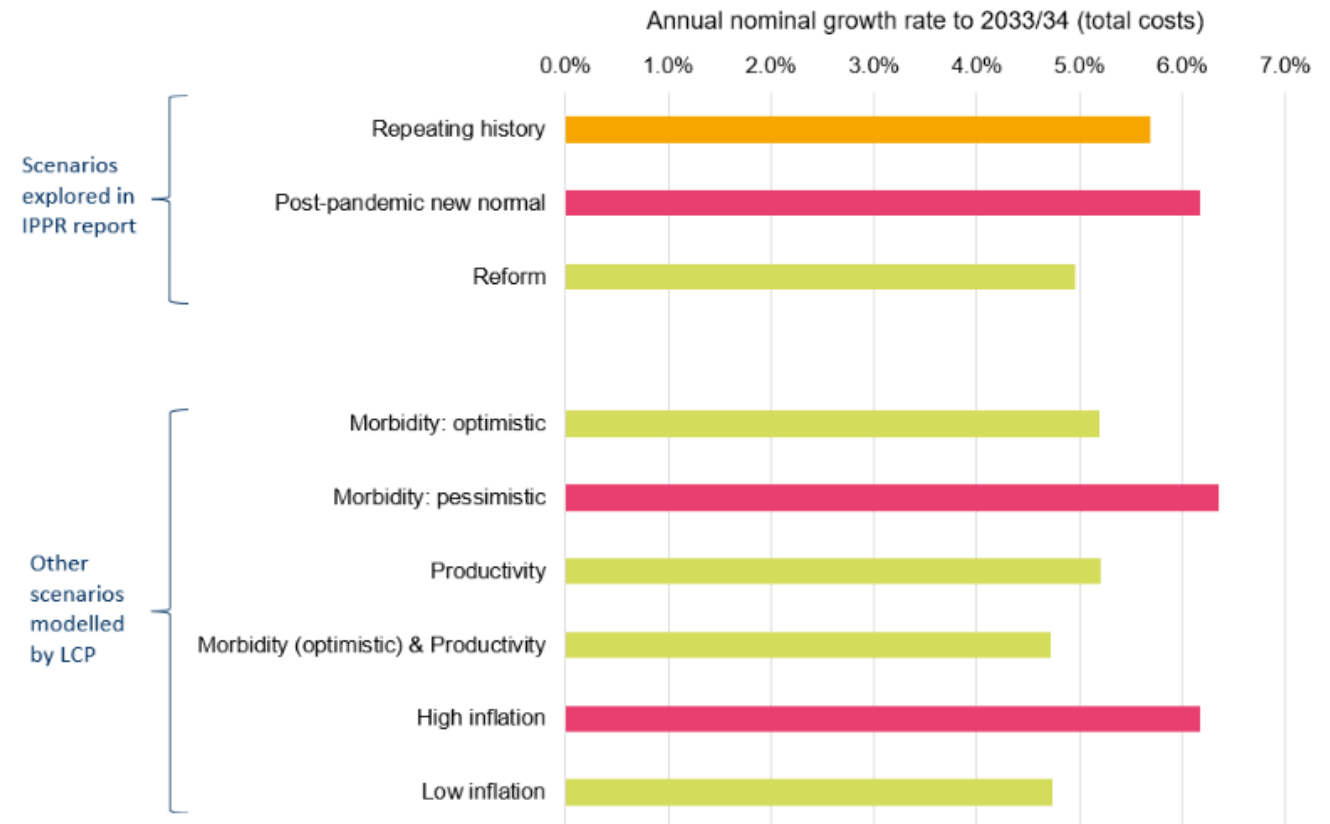
## Inflation

- In the optimistic scenario, we assume that market-implied CPI inflation up to September 2023 is fixed, but assume a flat rate of CPI of inflation of 3.8% pa thereafter (in line with the highest point of the core CPI curve).
- In the low inflation scenario, we assume flat inflation of 2.0% pa from September 2023 in line with the Bank of England's target.
- Under the core scenario and the high and low inflation scenarios, healthcare unit costs are assumed to grow in line with assumed CPI less a 0.5% pa allowance for productivity improvements.

## Productivity

- We assume that unit costs decrease by a further 0.5% pa across all years in hospital and GP settings (giving an overall productivity improvements assumption of 1.0% pa).
- These deductions below CPI in the unit cost rate reflect a reduction in the resources required to produce a given value of output.
- We do not vary the cost of medical goods under this scenario.

## Comparison of nominal growth rates





# Optimistic morbidity scenario results

This table sets out our projections under the optimistic morbidity scenario. On average, healthcare spending is expected to increase about 3.1% pa in real terms and 1.1% pa faster than GDP growth.

Financial year	Hospital care	GP surgeries	Medical goods	Other healthcare costs	Total healthcare costs	Annual % increase (nominal)	GDP deflator	Annual % increase (real)	Gross Domestic Product (GDP)	Annual % increase (over GDP)	% of total GDP
2019/20	£68.9bn	£12.8bn	£12.6bn	£39.9bn	£134.2bn				£1,896bn		7.1%
2020/21	£91.2bn	£16.6bn	£15.8bn	£55.5bn	£179.1bn	33.5%	6.3%	25.5%	£1,762bn	43.7%	10.2%
2021/22	£96.2bn	£20.1bn	£16.9bn	£55.6bn	£188.8bn	5.4%	-0.7%	6.1%	£1,973bn	-5.9%	9.6%
2022/23	£98.3bn	£18.2bn	£18.0bn	£56.9bn	£191.4bn	1.4%	6.5%	-4.8%	£2,136bn	-6.3%	9.0%
2023/24	£105.6bn	£19.7bn	£18.3bn	£61.2bn	£204.7bn	6.9%	2.5%	4.3%	£2,229bn	2.5%	9.2%
2024/25	£110.9bn	£20.8bn	£18.7bn	£64.5bn	£214.9bn	5.0%	1.6%	3.3%	£2,317bn	1.0%	9.3%
2025/26	£116.1bn	£21.8bn	£19.1bn	£67.9bn	£224.9bn	4.6%	1.0%	3.6%	£2,402bn	0.9%	9.4%
2026/27	£121.9bn	£23.0bn	£19.4bn	£71.6bn	£236.0bn	4.9%	1.2%	3.7%	£2,492bn	1.2%	9.5%
2027/28	£128.0bn	£24.3bn	£19.8bn	£75.5bn	£247.6bn	4.9%	1.7%	3.2%	£2,595bn	0.8%	9.5%
2028/29	£134.2bn	£25.6bn	£20.2bn	£79.6bn	£259.6bn	4.8%	2.3%	2.5%	£2,703bn	0.6%	9.6%
2029/30	£140.7bn	£26.9bn	£20.6bn	£83.8bn	£271.9bn	4.8%	2.3%	2.4%	£2,815bn	0.6%	9.7%
2030/31	£147.9bn	£28.4bn	£21.0bn	£88.5bn	£285.8bn	5.1%	2.3%	2.7%	£2,929bn	1.0%	9.8%
2031/32	£155.9bn	£30.0bn	£21.4bn	£93.7bn	£301.1bn	5.4%	2.3%	3.0%	£3,046bn	1.3%	9.9%
2032/33	£164.4bn	£31.7bn	£21.9bn	£99.3bn	£317.3bn	5.4%	2.3%	3.0%	£3,166bn	1.4%	10.0%
2033/34	£173.2bn	£33.5bn	£22.3bn	£105.1bn	£334.0bn	5.3%	2.3%	2.9%	£3,291bn	1.3%	10.2%
<i>Average growth (2022/23 – 2033/34)</i>	<i>5.3% pa</i>	<i>5.7% pa</i>	<i>2.0% pa</i>	<i>5.7% pa</i>		<b>5.2% pa</b>	<i>2.0% pa</i>	<b>3.1% pa</b>	<i>4.0% pa</i>	<b>1.1% pa</b>	

# Productivity scenario results

This table sets out our projections under the productivity scenario. On average, healthcare spending is expected to increase about 3.2% pa in real terms and 1.2% pa faster than GDP growth.

Financial year	Hospital care	GP surgeries	Medical goods	Other healthcare costs	Total healthcare costs	Annual % increase (nominal)	GDP deflator	Annual % increase (real)	Gross Domestic Product (GDP)	Annual % increase (over GDP)	% of total GDP
2019/20	£68.9bn	£12.8bn	£12.6bn	£39.9bn	£134.2bn				£1,896bn		7.1%
2020/21	£91.2bn	£16.6bn	£15.8bn	£55.5bn	£179.1bn	33.5%	6.3%	25.5%	£1,762bn	43.7%	10.2%
2021/22	£96.2bn	£20.1bn	£16.9bn	£55.6bn	£188.8bn	5.4%	-0.7%	6.1%	£1,973bn	-5.9%	9.6%
2022/23	£98.3bn	£18.2bn	£18.0bn	£56.9bn	£191.4bn	1.4%	6.5%	-4.8%	£2,136bn	-6.3%	9.0%
2023/24	£106.0bn	£19.6bn	£18.3bn	£60.9bn	£204.7bn	7.0%	2.5%	4.3%	£2,229bn	2.5%	9.2%
2024/25	£111.8bn	£20.6bn	£18.7bn	£64.0bn	£215.0bn	5.0%	1.6%	3.4%	£2,317bn	1.0%	9.3%
2025/26	£117.5bn	£21.5bn	£19.1bn	£67.0bn	£225.0bn	4.7%	1.0%	3.6%	£2,402bn	0.9%	9.4%
2026/27	£123.8bn	£22.6bn	£19.4bn	£70.3bn	£236.1bn	4.9%	1.2%	3.7%	£2,492bn	1.2%	9.5%
2027/28	£130.5bn	£23.7bn	£19.8bn	£73.8bn	£247.9bn	5.0%	1.7%	3.2%	£2,595bn	0.8%	9.6%
2028/29	£137.4bn	£24.8bn	£20.2bn	£77.4bn	£259.9bn	4.8%	2.3%	2.5%	£2,703bn	0.6%	9.6%
2029/30	£144.6bn	£26.0bn	£20.6bn	£81.1bn	£272.3bn	4.8%	2.3%	2.4%	£2,815bn	0.6%	9.7%
2030/31	£152.6bn	£27.3bn	£21.0bn	£85.3bn	£286.2bn	5.1%	2.3%	2.7%	£2,929bn	1.0%	9.8%
2031/32	£161.5bn	£28.7bn	£21.4bn	£89.9bn	£301.6bn	5.4%	2.3%	3.0%	£3,046bn	1.3%	9.9%
2032/33	£171.0bn	£30.2bn	£21.9bn	£94.8bn	£317.8bn	5.4%	2.3%	3.0%	£3,166bn	1.4%	10.0%
2033/34	£180.8bn	£31.7bn	£22.3bn	£99.9bn	£334.7bn	5.3%	2.3%	2.9%	£3,291bn	1.3%	10.2%
<i>Average growth (2022/23 – 2033/34)</i>	<i>5.7% pa</i>	<i>5.2% pa</i>	<i>2.0% pa</i>	<i>5.2% pa</i>		<b>5.2% pa</b>	<i>2.0% pa</i>	<b>3.2% pa</b>	<i>4.0% pa</i>	<b>1.2% pa</b>	

# Combined scenario results

This table sets out our projections under the combined optimistic morbidity-productivity scenario. On average, healthcare spending is expected to increase about 2.7% pa in real terms and 0.7% pa faster than GDP growth.

Financial year	Hospital care	GP surgeries	Medical goods	Other healthcare costs	Total healthcare costs	Annual % increase (nominal)	GDP deflator	Annual % increase (real)	Gross Domestic Product (GDP)	Annual % increase (over GDP)	% of total GDP
2019/20	£68.9bn	£12.8bn	£12.6bn	£39.9bn	£134.2bn				£1,896bn		7.1%
2020/21	£91.2bn	£16.6bn	£15.8bn	£55.5bn	£179.1bn	33.5%	6.3%	25.5%	£1,762bn	43.7%	10.2%
2021/22	£96.2bn	£20.1bn	£16.9bn	£55.6bn	£188.8bn	5.4%	-0.7%	6.1%	£1,973bn	-5.9%	9.6%
2022/23	£98.3bn	£18.2bn	£18.0bn	£56.9bn	£191.4bn	1.4%	6.5%	-4.8%	£2,136bn	-6.3%	9.0%
2023/24	£105.0bn	£19.6bn	£18.3bn	£60.9bn	£203.8bn	6.5%	2.5%	3.9%	£2,229bn	2.0%	9.1%
2024/25	£109.8bn	£20.6bn	£18.7bn	£64.0bn	£213.0bn	4.5%	1.6%	2.9%	£2,317bn	0.6%	9.2%
2025/26	£114.4bn	£21.5bn	£19.1bn	£67.0bn	£221.9bn	4.2%	1.0%	3.1%	£2,402bn	0.5%	9.2%
2026/27	£119.5bn	£22.6bn	£19.4bn	£70.3bn	£231.8bn	4.5%	1.2%	3.2%	£2,492bn	0.7%	9.3%
2027/28	£124.9bn	£23.7bn	£19.8bn	£73.8bn	£242.2bn	4.5%	1.7%	2.7%	£2,595bn	0.3%	9.3%
2028/29	£130.3bn	£24.8bn	£20.2bn	£77.4bn	£252.7bn	4.4%	2.3%	2.0%	£2,703bn	0.2%	9.3%
2029/30	£135.9bn	£26.0bn	£20.6bn	£81.1bn	£263.6bn	4.3%	2.3%	1.9%	£2,815bn	0.2%	9.4%
2030/31	£142.2bn	£27.3bn	£21.0bn	£85.3bn	£275.8bn	4.6%	2.3%	2.3%	£2,929bn	0.5%	9.4%
2031/32	£149.1bn	£28.7bn	£21.4bn	£89.9bn	£289.2bn	4.9%	2.3%	2.5%	£3,046bn	0.8%	9.5%
2032/33	£156.5bn	£30.2bn	£21.9bn	£94.8bn	£303.3bn	4.9%	2.3%	2.5%	£3,166bn	0.9%	9.6%
2033/34	£164.0bn	£31.7bn	£22.3bn	£99.9bn	£317.8bn	4.8%	2.3%	2.4%	£3,291bn	0.8%	9.7%
<i>Average growth (2022/23 – 2033/34)</i>	<i>4.8% pa</i>	<i>5.2% pa</i>	<i>2.0% pa</i>	<i>5.2% pa</i>		<b>4.7% pa</b>	<i>2.0% pa</i>	<b>2.7% pa</b>	<i>4.0% pa</i>	<b>0.7% pa</b>	

# Deferred combined scenario results (“reform”)

This table sets out our projections under an alternative combined optimistic morbidity-productivity scenario, where the morbidity improvements only take effect from 2027, i.e. after a 5-year delay. On average, healthcare spending is expected to increase about 2.9% pa in real terms and 0.9% pa faster than GDP growth.

Financial year	Hospital care	GP surgeries	Medical goods	Other healthcare costs	Total healthcare costs	Annual % increase (nominal)	GDP deflator	Annual % increase (real)	Gross Domestic Product (GDP)	Annual % increase (over GDP)	% of total GDP
2019/20	£68.9bn	£12.8bn	£12.6bn	£39.9bn	£134.2bn				£1,896bn		7.1%
2020/21	£91.2bn	£16.6bn	£15.8bn	£55.5bn	£179.1bn	33.5%	6.3%	25.5%	£1,762bn	43.7%	10.2%
2021/22	£96.2bn	£20.1bn	£16.9bn	£55.6bn	£188.8bn	5.4%	-0.7%	6.1%	£1,973bn	-5.9%	9.6%
2022/23	£98.3bn	£18.2bn	£18.0bn	£56.9bn	£191.4bn	1.4%	6.5%	-4.8%	£2,136bn	-6.3%	9.0%
2023/24	£106.0bn	£19.6bn	£18.3bn	£60.9bn	£204.7bn	7.0%	2.5%	4.3%	£2,229bn	2.5%	9.2%
2024/25	£111.8bn	£20.6bn	£18.7bn	£64.0bn	£215.0bn	5.0%	1.6%	3.4%	£2,317bn	1.0%	9.3%
2025/26	£117.5bn	£21.5bn	£19.1bn	£67.0bn	£225.0bn	4.7%	1.0%	3.6%	£2,402bn	0.9%	9.4%
2026/27	£123.8bn	£22.6bn	£19.4bn	£70.3bn	£236.1bn	4.9%	1.2%	3.7%	£2,492bn	1.2%	9.5%
2027/28	£130.2bn	£23.7bn	£19.8bn	£73.8bn	£247.6bn	4.8%	1.7%	3.1%	£2,595bn	0.7%	9.5%
2028/29	£136.1bn	£24.8bn	£20.2bn	£77.4bn	£258.5bn	4.4%	2.3%	2.1%	£2,703bn	0.2%	9.6%
2029/30	£142.0bn	£26.0bn	£20.6bn	£81.1bn	£269.7bn	4.3%	2.3%	2.0%	£2,815bn	0.2%	9.6%
2030/31	£148.7bn	£27.3bn	£21.0bn	£85.3bn	£282.3bn	4.7%	2.3%	2.3%	£2,929bn	0.6%	9.6%
2031/32	£156.2bn	£28.7bn	£21.4bn	£89.9bn	£296.3bn	4.9%	2.3%	2.6%	£3,046bn	0.9%	9.7%
2032/33	£164.1bn	£30.2bn	£21.9bn	£94.8bn	£311.0bn	5.0%	2.3%	2.6%	£3,166bn	1.0%	9.8%
2033/34	£172.3bn	£31.7bn	£22.3bn	£99.9bn	£326.1bn	4.9%	2.3%	2.5%	£3,291bn	0.9%	9.9%
<i>Average growth (2022/23 – 2033/34)</i>	<i>5.2% pa</i>	<i>5.2% pa</i>	<i>2.0% pa</i>	<i>5.2% pa</i>		<i>5.0% pa</i>	<i>2.0% pa</i>	<i>2.9% pa</i>	<i>4.0% pa</i>	<i>0.9% pa</i>	

## Zero productivity scenario results (“post-pandemic new normal”)

This table sets out our projections under a scenario which assumes no productivity growth (cf 0.5% pa productivity growth in the core scenario). On average, healthcare spending is expected to increase about 4.1% pa in real terms and 2.1% pa faster than GDP growth.

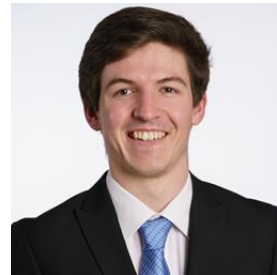
Financial year	Hospital care	GP surgeries	Medical goods	Other healthcare costs	Total healthcare costs	Annual % increase (nominal)	GDP deflator	Annual % increase (real)	Gross Domestic Product (GDP)	Annual % increase (over GDP)	% of total GDP
2019/20	£68.9bn	£12.8bn	£12.6bn	£39.9bn	£134.2bn				£1,896bn		7.1%
2020/21	£91.2bn	£16.6bn	£15.8bn	£55.5bn	£179.1bn	33.5%	6.3%	25.5%	£1,762bn	43.7%	10.2%
2021/22	£96.2bn	£20.1bn	£16.9bn	£55.6bn	£188.8bn	5.4%	-0.7%	6.1%	£1,973bn	-5.9%	9.6%
2022/23	£98.3bn	£18.2bn	£18.0bn	£56.9bn	£191.4bn	1.4%	6.5%	-4.8%	£2,136bn	-6.3%	9.0%
2023/24	£107.0bn	£19.7bn	£18.3bn	£61.4bn	<b>£206.5bn</b>	7.9%	2.5%	5.3%	<b>£2,229bn</b>	3.4%	9.3%
2024/25	£114.0bn	£21.0bn	£18.7bn	£65.1bn	<b>£218.8bn</b>	5.9%	1.6%	4.3%	<b>£2,317bn</b>	1.9%	9.4%
2025/26	£121.0bn	£22.2bn	£19.1bn	£68.8bn	<b>£231.1bn</b>	5.6%	1.0%	4.6%	<b>£2,402bn</b>	1.9%	9.6%
2026/27	£128.8bn	£23.5bn	£19.4bn	£72.9bn	<b>£244.7bn</b>	5.9%	1.2%	4.6%	<b>£2,492bn</b>	2.1%	9.8%
2027/28	£137.2bn	£24.9bn	£19.8bn	£77.3bn	<b>£259.2bn</b>	5.9%	1.7%	4.1%	<b>£2,595bn</b>	1.7%	10.0%
2028/29	£145.9bn	£26.3bn	£20.2bn	£81.8bn	<b>£274.2bn</b>	5.8%	2.3%	3.4%	<b>£2,703bn</b>	1.6%	10.1%
2029/30	£155.0bn	£27.8bn	£20.6bn	£86.5bn	<b>£290.0bn</b>	5.7%	2.3%	3.4%	<b>£2,815bn</b>	1.6%	10.3%
2030/31	£165.3bn	£29.5bn	£21.0bn	£91.8bn	<b>£307.6bn</b>	6.1%	2.3%	3.7%	<b>£2,929bn</b>	1.9%	10.5%
2031/32	£176.7bn	£31.4bn	£21.4bn	£97.7bn	<b>£327.2bn</b>	6.4%	2.3%	4.0%	<b>£3,046bn</b>	2.3%	10.7%
2032/33	£188.9bn	£33.3bn	£21.9bn	£104.0bn	<b>£348.1bn</b>	6.4%	2.3%	4.0%	<b>£3,166bn</b>	2.3%	11.0%
2033/34	£201.7bn	£35.4bn	£22.3bn	£110.6bn	<b>£370.0bn</b>	6.3%	2.3%	3.9%	<b>£3,291bn</b>	2.3%	11.2%
<i>Average growth (2022/23 – 2033/34)</i>	<i>6.7% pa</i>	<i>6.2% pa</i>	<i>2.0% pa</i>	<i>6.2% pa</i>		<b>6.2% pa</b>	<i>2.0% pa</i>	<b>4.1% pa</b>	<i>4.0% pa</i>	<b>2.1% pa</b>	

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*Appendix: historic  
healthcare spending in  
various nations*





# Cross-country comparison

*OECD data on healthcare spending and GDP growth in the period from 2014-2019*

Country	Nominal increase in health spend	Inflation	Real increase in health spend (-inflation)	GDP change (nominal)	Real increase in health spend (-GDP)	Health as % of GDP
France	2.1%	1.0%	1.1%	2.5%	-0.4%	8.5%
Germany	4.6%	1.2%	3.3%	3.5%	1.0%	8.9%
Canada	4.0%	1.7%	2.3%	3.0%	1.0%	6.7%
Italy	1.1%	0.6%	0.5%	2.0%	-0.9%	6.2%
UK (OECD data)	3.8%	1.5%	2.3%	3.7%	0.1%	7.1%
UK (ONS data)	4.6%	1.5%	3.1%	3.7%	0.8%	7.1%

- Based on data published by OECD, we observe large differences in healthcare spend across different countries.
- We only include government/compulsory spending, excluding private healthcare expenditure; however, this covers most of the healthcare expenditure in the selected countries.
  - Canada and Italy have an NHS-style healthcare system.
  - Germany and France have social insurance contributions (usually through employers).
- We exclude expenditure for long term residential care.
- Health spend for UK is measured using two data sources: ONS and OECD; due to differences in methodology, the latter is more comparable across countries.