Office for National Statistics

Statistical bulletin

Public service productivity, quarterly, UK: January to March 2025

UK total public service productivity, inputs and output, to provide a short-term, timely indicator of annual productivity estimates. These are official statistics in development.

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Next release:
To be announced

Table of contents

1 . Main points

- This is our second quarterly release since introducing large-scale improvements to our accredited annual release following the National Statistician's Independent Review of the Measurement of Public Services Productivity.
- Total public service productivity in the UK was estimated to have grown 1.0% in Quarter 1 (Jan to Mar) 2025 compared with Quarter 1 2024.
- Healthcare productivity grew 2.7% in Quarter 1 2025 compared with Quarter 1 2024.
- Annualised productivity growth in 2024 has been revised up to 0.1% from negative 0.3%. This is caused by updated source data and adjustments made to healthcare output.
- Healthcare output and productivity have been revised upwards because of the incorporation of the latest NHS activity data and the introduction of an adjustment to account for changes in the way NHS providers report non-elective care activities.
- Annualised quarterly estimates imply total public service productivity has yet to return to its pre-pandemic peak. In 2024, total public service productivity was 4.2% lower than the 2019 level.

These are official statistics in development and are subject to revision. Use caution when comparing quarterly estimates in 2023 and 2024 (which are official statistics in development) with earlier annual estimates (which are accredited Official Statistics), as some sources, methods and the structure of inputs and outputs changed in response to the pandemic. Read more in Section 8: Data sources and quality.

2 . About these estimates

Our quarterly estimates are official statistics in development and provide a short-term, timely indicator of total public service productivity and healthcare productivity. These statistics take no further account of changes to the quality of public services in periods beyond the latest statistics published for 2022 in our annual total public service productivity, which are accredited official statistics. Methodological differences between the annual and quarterly estimates, and a description of the quarterly data, can be found in our recently updated Sources and methods for public service productivity estimates methodology.

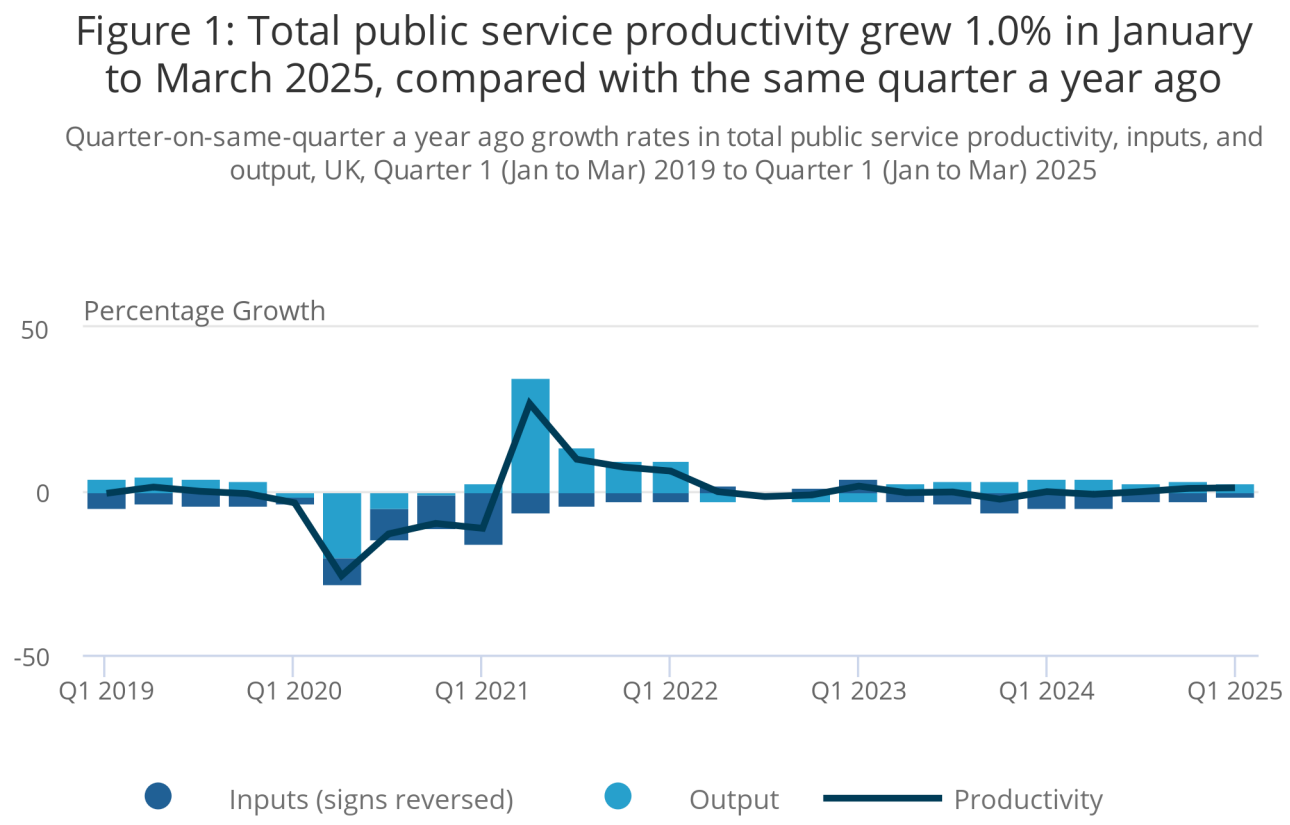
We have incorporated the latest NHS activity data and introduced an adjustment to account for changes in the way NHS providers report non-elective care activities (See Section 8: Data sources and quality). This has resulted in an upwards revision of our healthcare output estimates across 2024 (See Section 5: Revisions to public service productivity estimates).

3 . Quarter-on-previous-year productivity estimates

We focus here on movements between the quarter and the same quarter a year ago, rather than comparing with the previous quarter, because these better reflect underlying productivity trends and minimise effects of short-term volatility. Total public service productivity in the UK was estimated to have grown 1.0% in Quarter 1 (Jan to Mar) 2025 compared with the same quarter in 2024. Over this period, inputs and output grew 1.4% and 2.4% respectively.

Figure 1: Total public service productivity grew 1.0% in January to March 2025, compared with the same quarter a year ago

Quarter-on-same-quarter a year ago growth rates in total public service productivity, inputs, and output, UK, Quarter 1 (Jan to Mar) 2019 to Quarter 1 (Jan to Mar) 2025



Source: Public service productivity from the Office for National Statistics

Notes:

1. Quarterly estimates of productivity are calculated using seasonally adjusted inputs and output.
2. This chart inverts the growth rates of inputs as positive inputs growth contributes negatively to productivity.
3. Q1 refers to Quarter 1 (Jan to Mar), Q2 refers to Quarter 2 (Apr to June), Q3 refers to Quarter 3 (July to Sept), Q4 refers to Quarter 4 (Oct to Dec).

Quarter-on-previous-year healthcare productivity estimates

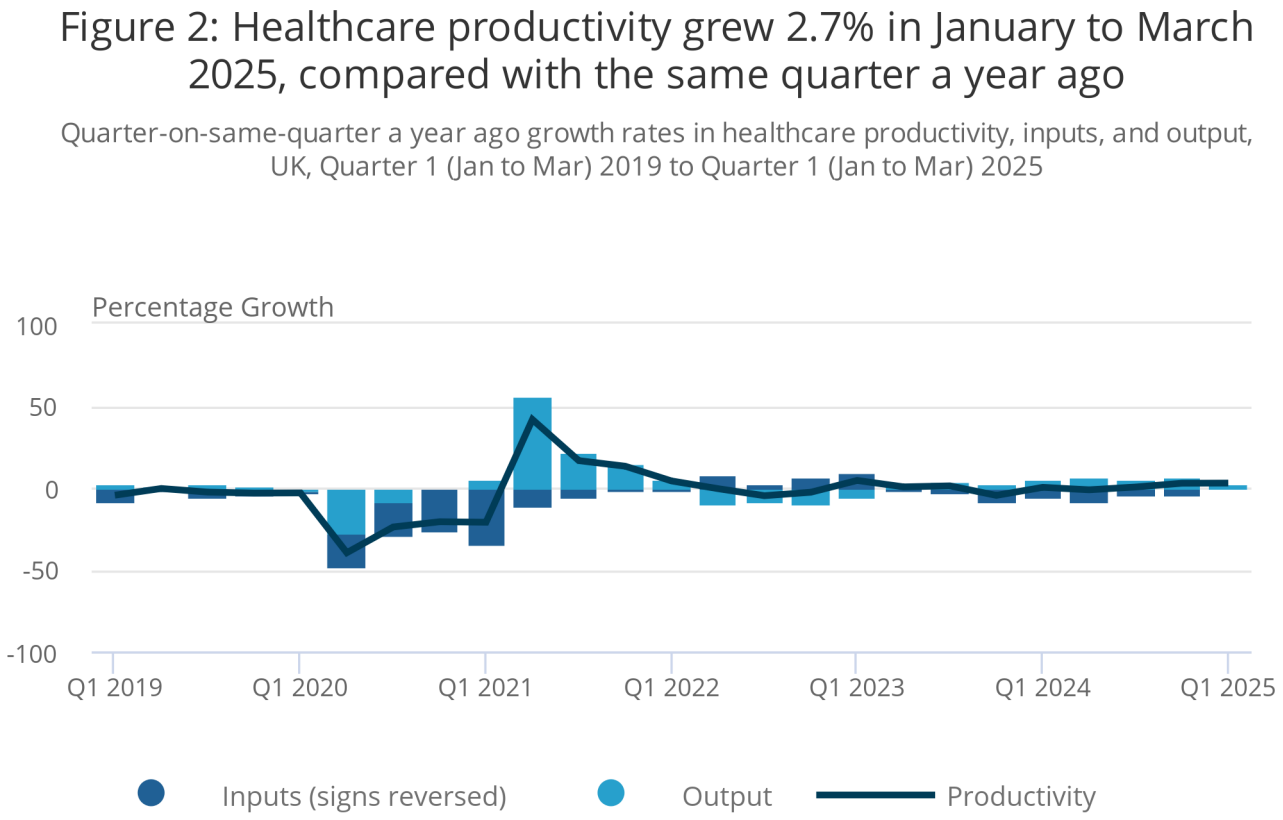
Healthcare accounted for approximately 39% of total UK public expenditure in Quarter 1 2025. It includes activities like elective and non-elective services, general practitioners (GPs), prescription drugs, outpatient, mental health, community health, and accident and emergency care.

Estimates are predominantly based on National Accounts data and align to the GDP quarterly national accounts, UK: January to March 2025. However, in this release our measures of healthcare output will differ from the measures produced for the national accounts for the reasons explained in the Section 8: Data sources and quality.

Healthcare productivity was estimated to have grown 2.7% in Quarter 1 2025 compared with the same quarter in 2024, as output growth (2.9%) outpaced inputs growth (0.2%). This is the first time since early 2023 that there have been three consecutive periods of quarter on same quarter a year ago productivity growth.

Figure 2: Healthcare productivity grew 2.7% in January to March 2025, compared with the same quarter a year ago

Quarter-on-same-quarter a year ago growth rates in healthcare productivity, inputs, and output, UK, Quarter 1 (Jan to Mar) 2019 to Quarter 1 (Jan to Mar) 2025



Source: Public service productivity from the Office for National Statistics

Notes:

1. Quarterly estimates of productivity are calculated using seasonally adjusted inputs and output.
2. This chart inverts the growth rates of inputs, as positive inputs growth contributes negatively to productivity.
3. Q1 refers to Quarter 1 (Jan to Mar), Q2 refers to Quarter 2 (Apr to June), Q3 refers to Quarter 3 (July to Sept), Q4 refers to Quarter 4 (Oct to Dec)

4 . Annualised estimates

This section focuses on the annualised estimates of our quarterly total and healthcare public service productivity, inputs, and output, which are official statistics in development. The annualised official statistics in development are based on a quarterly annualised growth rate (QAGR) approach, which produces "nowcasted" estimates for 2023 and 2024.

Annualised inputs and output estimates are derived by averaging non-seasonally adjusted index values across four quarters of a year. These are used to calculate productivity growth rates, which are applied to 2022 accredited official statistics to estimate 2023 and 2024 figures. This method is also used in our Developing nowcast methodologies for public service productivity, UK article.

We also make pre-pandemic annual comparisons, recognising the impact the coronavirus (COVID-19) pandemic had on public services. Inputs rose in 2020, reflecting the extra resources provided to public services to deal with the pandemic. Conversely, output fell in 2020 as many services were delivered in a different way than in 2019, with additional costs and mandatory restrictions present for certain services.

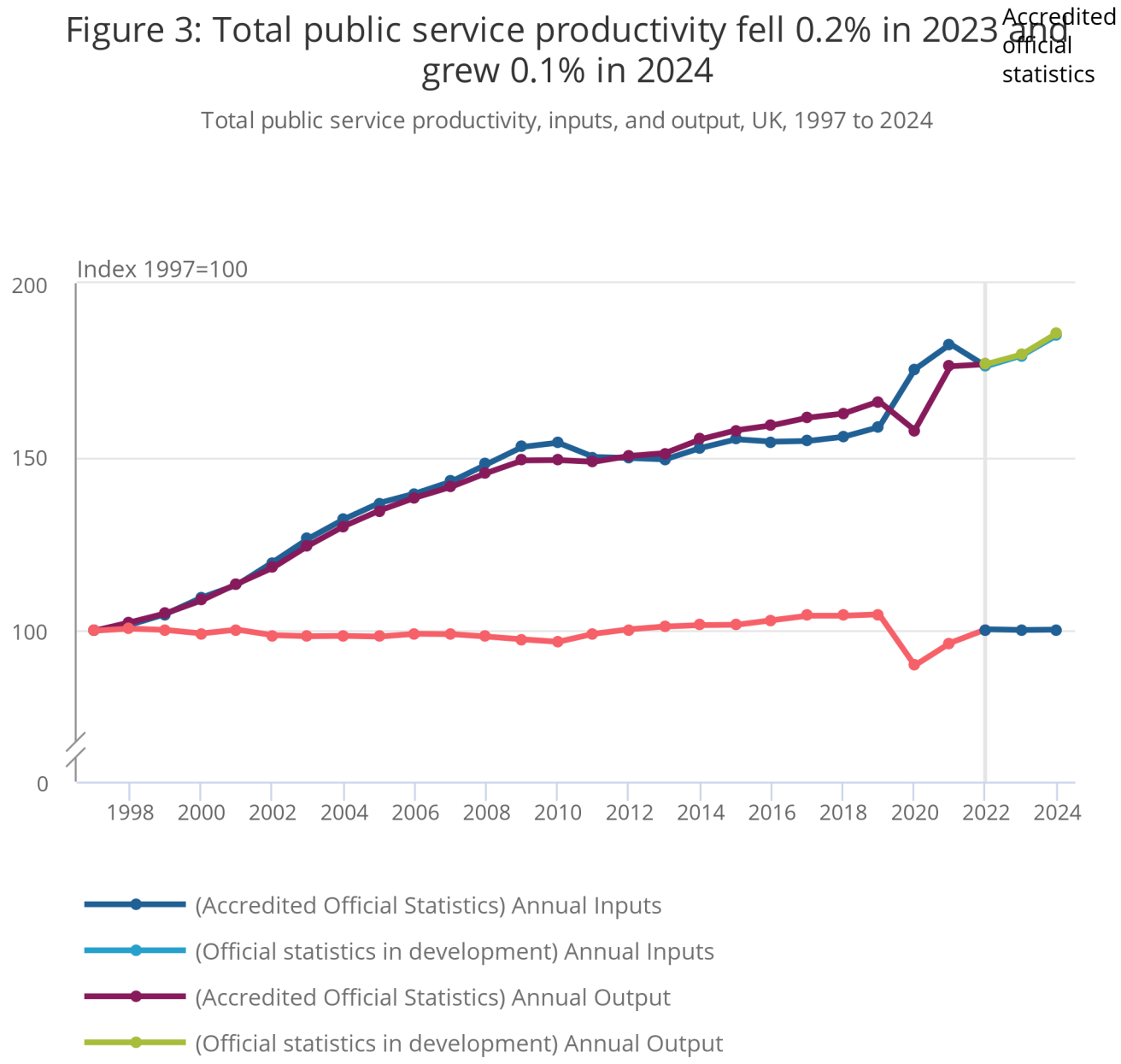
Analysis prior to the National Statistician's Independent Review of the Measurement of Public Services Productivity compared the latest available quarter with the last full quarter before the pandemic, Quarter 4 (Oct to Dec) 2019. However, that approach amplifies known methodological differences between the quarterly and annual estimates (See Section 8: Data sources and quality). Therefore, to avoid confusion and align our analysis to our annual accredited official statistics of total public service productivity, we now present our pre-pandemic comparisons in Table 1 using our latest annualised quarterly estimates (which remain experimental) with our accredited annual estimate for 2019.

Annualised total public service and healthcare productivity comparisons with pre-pandemic levels

Figures 3 and 4 combine our accredited annual estimates from 1997 to 2022 with official statistics in development for 2023 and 2024, derived using the QAGR approach. Figure 3 presents total public services productivity, inputs and output annual estimates, whilst Figure 4 presents the same for healthcare only. Table 1 compares our latest annual productivity estimates against 2019 levels.

Figure 3: Total public service productivity fell 0.2% in 2023 and grew 0.1% in 2024

Total public service productivity, inputs, and output, UK, 1997 to 2024



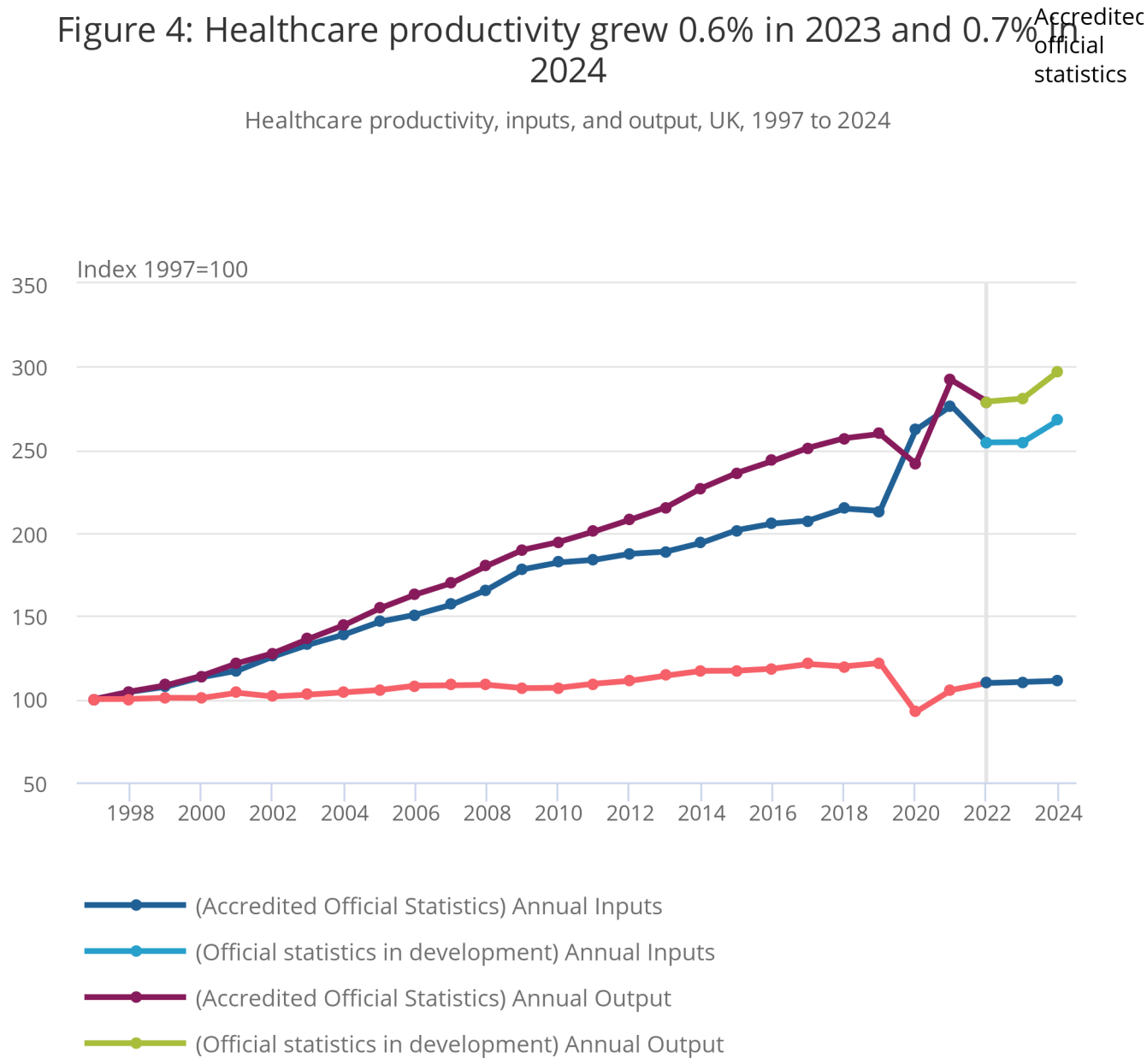
Source: Public service productivity from the Office for National Statistics

Notes:

1. Estimates from 1997 to 2022 are annual accredited official statistics
2. Estimates for 2023 and 2024 are official statistics in development and are annualised quarterly estimates.

Figure 4: Healthcare productivity grew 0.6% in 2023 and 0.7% in 2024

Healthcare productivity, inputs, and output, UK, 1997 to 2024



Source: Public service productivity from the Office for National Statistics

Notes:

1. Estimates from 1997 to 2022 are annual accredited official statistics

2. Estimates for 2023 and 2024 are official statistics in development and are annualised quarterly estimates.

The annualised quarterly estimates in Table 1 show that total public service productivity in 2024 remained below pre-pandemic levels (4.2% lower than in 2019). Our latest estimates indicate that productivity in 2023 was 4.3% lower than in 2019. Table 1 also shows that healthcare productivity in 2024 remained below pre-pandemic levels (8.8% lower than in 2019), with productivity 9.4% below pre-pandemic levels in 2023. Previously published data estimated a slower post-pandemic rate of a recovery compared to those shown in this release. See Section 5: Revisions to public service productivity estimates for explanation of these revisions.

Table 1: Comparing recent public service productivity levels with 2019

Year	Total PSP	Healthcare	Note
2022	4.1% lower	9.9% lower	Comparing Annual 2022 with Annual 2019
2023	4.3% lower	9.4% lower	Comparing Annualised quarterly estimates with Annual 2019
2024	4.2% lower	8.8% lower	Comparing Annualised quarterly estimates with Annual 2019

Source: Office for National Statistics

Notes

1. Estimates for 2022 are based on annual accredited official statistics.
2. Estimates for 2023 and 2024 compare official statistics in development (that is, quarterly annualised estimates) and annual accredited official statistics.

Confidence intervals (CIs) surrounding our nowcasted total public service and healthcare productivity estimates for 2023 and 2024 are included in Tables 2 and 3. These help to indicate the uncertainty attached to these growth estimates, with the interval width determined by historical differences between the growth rates of quarterly and annual accredited estimates.

As stated, nowcasted estimates are official statistics in development and should be treated with caution until our 2023 and 2024 annual accredited estimates become available. Central estimates suggest that annual total public service productivity fell 0.2% in 2023 (95% CI, negative 2.1%, positive 1.8%), before growing 0.1% in 2024 (95% CI, negative 2.4%, positive 2.6%). We are, therefore, unable to say with confidence whether there was growth or contraction in 2023 and 2024.

Table 2: Nowcast estimates for 2023 and 2024 total public service productivity, inputs and output growth rates, UK

			95% Confidence Interval	
	Nowcast estimate for	**Central estimate**	**Lower**	**Upper**
Productivity	2023	-0.2%	-2.1%	1.8%
	2024	0.1%	-2.4%	2.6%
Inputs	2023	1.8%	-0.8%	4.3%
	2024	3.3%	0.2%	6.4%
Output	2023	1.6%	0.0%	3.1%
	2024	3.4%	1.5%	5.3%

Source: Office for National Statistics

Notes

1. We use a quarterly annualised growth rate nowcast. For more details please see Developing nowcast methodologies for public service productivity, UK.

Central estimates suggest that healthcare productivity grew 0.6% in 2023 (95% CI, negative 3.6%, positive 4.7%) and 0.7% in 2024 (95% CI, negative 4.3%, positive 5.6%). Both inputs and output grew in 2023 and 2024, with output estimated to have risen at a faster rate than inputs. Whilst some elements of our estimates come with greater certainty (such as current price expenditure from government accounts on healthcare inputs), there are other elements that affect large confidence intervals (including different deflators, time lag in certain sources, and methodology between our annual and quarterly dataset).

Table 3: Nowcast estimates for 2023 and 2024 healthcare productivity, inputs and output growth rates, UK

			95% Confidence Interval	
	Nowcast estimate for	**Central estimate**	**Lower**	**Upper**
Productivity	2023	0.6%	-3.6%	4.7%
	2024	0.7%	-4.3%	5.6%
Inputs	2023	0.1%	-4.2%	4.4%
	2024	5.2%	0.5%	9.9%
Output	2023	0.7%	-1.0%	2.3%
	2024	5.9%	3.8%	8.0%

Source: Office for National Statistics

Notes

1. We use a quarterly annualised growth rate nowcast. For more details please see Developing nowcast methodologies for public service productivity, UK.

5 . Revisions to public service productivity estimates

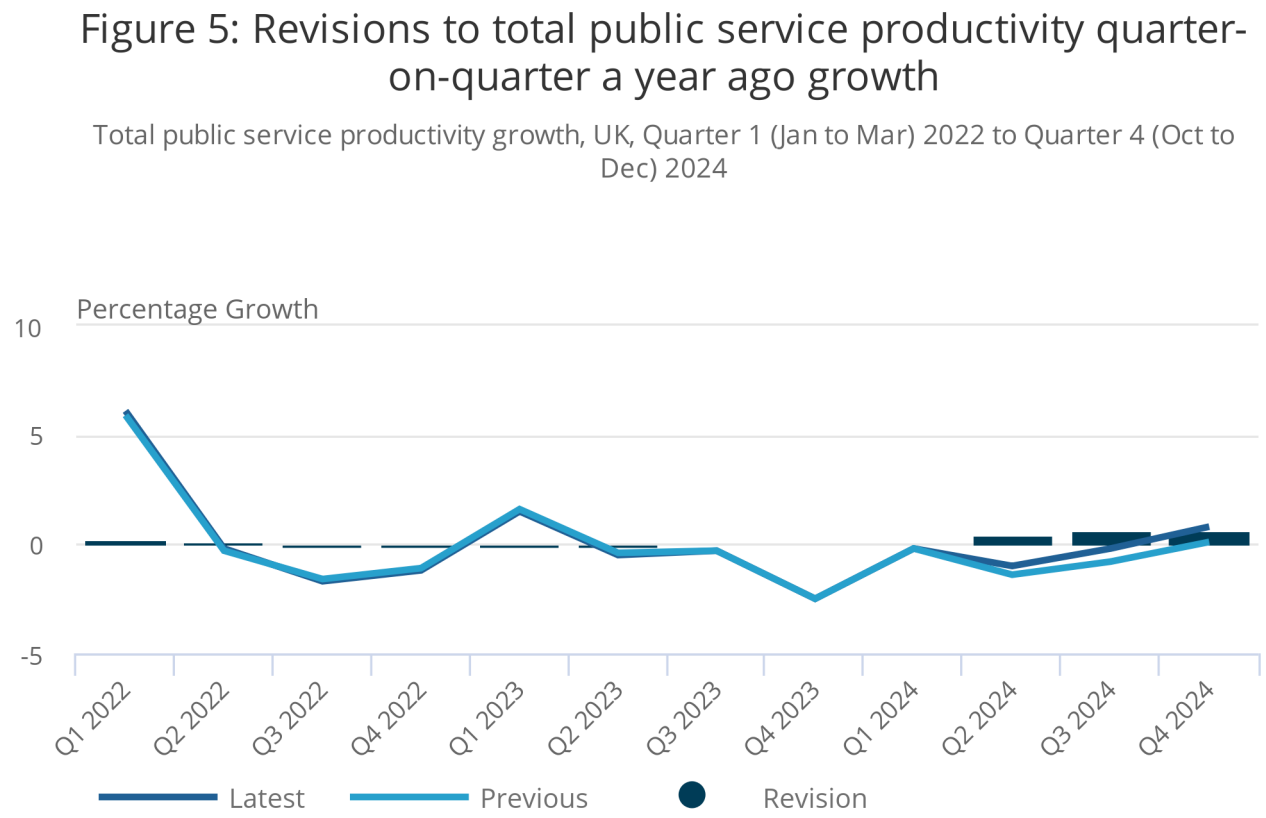
Our quarterly public service productivity estimates typically follow our national accounts revisions policy. However, in this release, we have made two adjustments based on newly available information that differentiate our healthcare volume output estimates from those in the national accounts.

Firstly, we have incorporated the latest hospital activity data published in the final NHS England Hospital Episodes Statistics report for financial ending March 2025, which was not available at the time of producing the latest quarterly national accounts. Secondly, we have applied an adjustment to estimates of non-elective healthcare output to account for changes in the way some NHS providers report same-day emergency care (SDEC) episodes by removing affected NHS providers. This mitigates the impact of reporting differences on estimates of output growth and results in upward revisions to estimates of healthcare output from 2024 Quarter 1 onwards. In line with the National Accounts revisions policy, these data will be introduced to GDP Quarterly National Accounts at the next available opportunity, which will be on 30 September 2025.

Figure 5 compares our latest estimates of quarter-on-same-quarter a year ago productivity movements with those previously published in our Public service productivity, quarterly, UK: October to December 2024 bulletin. The combined impact of these revisions is to increase our estimate of total public service productivity growth over 2024, revised up to 0.1% growth from negative 0.3%. Smaller revisions in the period 2019 to 2023 are caused by our seasonal adjustment method accounting for differences in the latest quarter to the historic seasonal effects. See Section 8: Data sources and quality for more details on our seasonal adjustment.

Figure 5: Revisions to total public service productivity quarter-on-quarter a year ago growth

Total public service productivity growth, UK, Quarter 1 (Jan to Mar) 2022 to Quarter 4 (Oct to Dec) 2024



Source: Public service productivity from the Office for National Statistics

Notes:

1. Q1 refers to Quarter 1 (Jan to Mar), Q2 refers to Quarter 2 (Apr to June), Q3 refers to Quarter 3 (July to Sept), Q4 refers to Quarter 4 (Oct to Dec).

For more detailed information on revisions to productivity, inputs, and output, please see Table 5 in our accompanying dataset.

6 . Data on public service productivity

Public service productivity, quarterly, UK: January to March 2025
Dataset | Released 28 July 2025
UK total public service productivity and healthcare productivity. Includes estimates of inputs, output, productivity, and revisions. These are official statistics in development.

7 . Glossary

Deflator

A price index used to remove inflation effects from current price estimates of expenditure to provide a volume estimate.

Direct output measurement

Using a cost-weighted activity index to estimate the non-quality adjusted output of a service provided, such as the number of students in state schools, adjusted for attendance to produce an estimate of total hours of schooling delivered each year. Differs from indirect output measurement, where output is assumed equal to inputs.

Intermediate inputs

Also referred to as "goods and services", or "intermediate consumption" (the National Accounts term). Intermediate inputs include goods and services used up in the provision of a public service, such as utilities, energy, professional services, and medical supplies, among others.

Public services

These are services delivered by or paid for by government (central or local). If paid for by the government, they may be delivered by a private body - for example, the provision of nursery places by the private sector, where these places were funded by the government.

Quality adjustment

A statistical estimate of the change in the quality of a public service, using an appropriate metric, such as safety in prisons as part of the public order and safety adjustment.

Service area

The way we refer to the breakdown of public services into seven areas, closely following standard industrial classification (SIC) codes.

Standard industrial classification

The industrial classification applied to the collection and publication of a wide range of economic statistics.

8 . Data sources and quality

Data sources

We use different sources and methods to produce our official statistics in development quarterly statistics and our annual accredited official statistics.

This bulletin uses expenditure data from quarterly UK National Accounts, split into seven categories:

- healthcare
- education
- social protection
- justice and fire
- military defence
- central government services
- local government services

Data sources and methods differ from the annual publication, depending on data availability and appropriateness on a quarterly or annual basis. For example, some inputs measures that are available on an annual basis as direct measures are not available on a quarterly basis. These missing quarterly direct input measures may only be obtainable using indirect measures (deflated expenditure).

Our annual total public service productivity (accredited official statistics) also use different deflators to estimate volumes of inputs other than those used in this release. As such, estimates are not directly comparable between the quarterly and annual publications.

Estimates of productivity, inputs and output up to 2022 are reported on an annual basis and use data from our Public service productivity, total, UK, 2022 article. Further information about our annual accredited official statistics can be found in our Public service productivity: total, UK, quality and methodology information (QMI).

Revisions

While our measurement of inputs and output typically align to the measures produced for the latest national accounts as released in the GDP quarterly national accounts, UK - Office for National Statistics bulletin, in this release our measure of output will differ to account for:

- revisions in recently published NHS activity data
- changes in the way NHS providers report non-elective care activity

We have used the recently published month 13 edition of the NHS England Hospital Episodes Statistics (HES) which revises estimates of activity for elective care, non-elective care, and outpatient activity between April 2024 and March 2025. While these data were not available for the latest national accounts, we are able to use this vintage of data to calculate output estimates for our productivity estimates. The month 13 vintage of data represents the final published version of HES data for the financial year ending 2025 and will be introduced to GDP Quarterly National Accounts at the next available opportunity on 30 September 2025, in line with the national accounts revisions policy. This represents an upward revision to estimates of healthcare output between Quarter 2 (Apr to June) 2024 and Quarter 1 (Jan to Mar) 2025.

For this edition of our productivity statistics we have also applied an adjustment to estimates of non-elective care output to account for changes in the way some NHS providers report same-day emergency care (SDEC). While SDEC was commonly reported as non-elective care up to 2024, an increasing number of NHS trusts now report activity as emergency care. We have worked closely with the Department of Health and Social Care and NHS England to identify and remove the affected NHS providers when calculating an aggregate growth in quarter-on-quarter activity. This helps to mitigate the impact of reporting differences on estimates of output growth. This also results in an upward revision to estimates of output from Quarter 1 2024 onwards. We will continue to work closely with data experts to monitor and compensate for this trend.

The estimates published in this bulletin are also affected by the quarterly revisions of our seasonal adjustment methods. Within our accredited annual total public service productivity statistics, the seasonal adjustment methods will continue to be reviewed when new quarters are added to our estimates. Future quarters may deliver data that could affect our view of the seasonal adjustment time path, if we discover this is a turning point in seasonal behaviour.

Seasonal adjustment

Our quarterly estimates of public service productivity contain systematic calendar related variation therefore for comparability we apply seasonally adjustment. Please see Office for National Statistics seasonal adjustment publication for more information. For our quarterly estimates we use the X11 algorithm in the X-13 ARIMA-SEATS software to perform seasonal adjustment.

Since 2023, the non-seasonally adjusted data on public service productivity, particularly inputs, show a different seasonal pattern than earlier data. This is because of policies and measures adopted by government departments following the coronavirus (COVID-19) pandemic. This new seasonality was not properly captured by the seasonal adjustment model for inputs, which produced estimates that do not appear fully to reflect the current economic scenario. To revise the seasonal adjustment fully requires more quarters of data post-COVID-19 to enable re-estimation of the trend of the new seasonality. For this reason, supported by experts on seasonal adjustment, we have treated data on healthcare inputs from Quarter 2 (Apr to June) 2020 until the latest quarter as outliers, reflecting the impact of COVID-19 and subsequent effects.

From Quarter 1 (Jan to Mar) 2022 until the latest, our new seasonally adjusted method follows three steps.

1. Create new healthcare inputs seasonally adjusted estimates, which include outliers from Quarter 2 2020 until Quarter 1 (Jan to Mar) 2025.
2. Calculate the difference between the healthcare outlier model and the healthcare inputs standard seasonally adjusted model.
3. Apply the difference between these models to the seasonally adjusted total inputs, adjusted by the expenditure share of healthcare, from Quarter 1 2022 until the latest quarter.

This adjustment reflects better the trend in non-seasonally adjusted inputs data, compared with the previous seasonally adjusted model. The seasonal adjustment models applied to healthcare and total output have remained unchanged. These estimates will be subject to revision as new data become available.

Measuring public service productivity

These estimates are not a measure of the productivity of an individual worker within the public sector. Instead, they reflect the volume of services delivered to end users, relative to the volume of total inputs required to deliver these services.

Productivity will increase when more output is being produced for each unit of inputs used. Estimates of inputs, output, and productivity are given both as growth rates between consecutive periods and as indices, showing the cumulative trend over time.

For total UK public services, estimates of inputs are made up of aggregated series for individual public services, weighted together by their relative share of total expenditure on public services in current price (expenditure weight).

Inputs include labour, goods and services, social transfers in kind, and consumption of fixed capital. Expenditure data, used to estimate most inputs growth, are taken from our GDP quarterly national accounts, UK - Office for National Statistics

Output in our productivity estimates reflects total general government final consumption expenditure (GGFCE). The quarterly national accounts produce estimates of government output, based on direct measures where they are available, and indirect measures where they are not.

Inputs for healthcare are calculated from the volume growth of healthcare labour inputs multiplied by the current price expenditure share of healthcare labour, relative to other health inputs components. We adopted the same approach to calculate the intermediate consumption, capital, and social transfer in kind (STIK). The sum of these components leads to the healthcare inputs volume growth in each period.

Our estimates of intermediate consumption, capital, and STIK are based on national accounts sources. Labour growth is based on our public sector employment data (direct implied expenditure), and deflated bank staff implied expenditure.

Our quarterly data do not currently account for staff absenteeism in our labour estimates. However, our annual accredited official statistics estimates do account for this. More information on the differences in method and sources used in our quarterly and annual estimates of public service productivity can be found in our Public service productivity QMI.

Our public service quarterly output volume measure for healthcare is estimated based on the growth in the following types of activities in England, which have timely data collections:

- elective and non-elective treatments
- hospital outpatient first and follow-up appointments
- emergency care
- critical care services
- ambulance attendances
- community health services
- mental health treatments
- community prescribed drugs
- general practitioner (GP) consultations
- dental services
- ophthalmic services
- NHS phone and website services

More information can be found in our Improvements to healthcare volume output in the quarterly national accounts methodology.

Quarterly healthcare output growth is based on available data for a subset of services in England. Because of limited data, these indicators are assumed to reflect overall healthcare trends. Longer-term estimates are adjusted when more complete annual data become available.

Public service productivity uses the expenditure of public services, which defines GGFCE. It includes services where employees are central or local government, as well as publicly funded independent sector providers. This differs from the public sector, which includes public corporations but excludes publicly funded independent sector providers, to avoid double-counting.

Public service productivity is measured differently to labour productivity and multi-factor productivity and is not directly comparable. It reflects the volume of services delivered to end users, relative to the volume of total inputs (which include labour, intermediate consumption, and capital). The measure is dominated by healthcare and education services because of their relative size.

These estimates should be considered a first estimate of public service productivity. The Office for National Statistics, together with HM Treasury and other government departments, will continue to develop and improve its methods, which may lead to revisions of these preliminary estimates.

Recommendations from National Statistician's Independent Review of the Measurement of Public Services Productivity

We will continue to make incremental improvements to this release and accompanying datasets, in line with recommendations set out in the National Statistician's Independent Review of the Measurement of Public Services Productivity, including:

- account for available quality adjustment data and, where this is not possible, keep nowcasting models under annual review to provide the most accurate and timely data possible (see Recommendation 16)
- replace the current 'contribution to growth' compilation method with 'chain volume measures' and then implement reconciliation of the quarterly estimates with the annual estimates each year, to align with the UK National Accounts protocols and improve coherence and understanding for users (see Recommendation 18)
- apply the Quarterly cumulative Average Growth Rates (QAGR) method to provide timelier nowcast estimates for annual estimates as further research is undertaken to evaluate the efficacy of alternative methods in the light of the coronavirus pandemic (see Recommendation 19)
- proceed with best practice improvements to align quarterly and annual production statistics (see Recommendation 20)

9 . Related links

Public service productivity: total, UK, 2022
Article | Released 27 March 2025
Updated measures of output, inputs and productivity for UK public services between 1997 and 2022, including service area breakdown, quality adjustment, and latest revisions.

Public Services Productivity Review: Impact of improved methods on total public service productivity, 1997 to 2021
Article | Last revised 27 March 2025
This article presents the improvements to public service productivity measures introduced in the Public Services Productivity Review implemented in March 2025

National Statistician's Independent Review of the Measurement of Public Services Productivity
Report | 13 March 2025

GDP quarterly national accounts, UK - Office for National Statistics
Statistical bulletin | Released 30 June 2025
Revised quarterly estimate of gross domestic product (GDP) for the UK. Uses additional data to provide a more precise indication of economic growth than the first estimate.

Productivity flash estimate and overview, UK - Office for National Statistics
Article | Released 15 May 2025
Productivity flash estimates for Quarter 4 (Oct to Dec) 2024, based on the GDP first quarterly estimate and labour market statistics, and productivity overview for Quarter 3 (Jul to Sep) 2024.

Developing nowcast methodologies for public service productivity, UK
Article | Released 11 December 2024
An overview of the latest experimental methods to produce timelier estimates of annual UK public service productivity. These are official statistics in development.

10 . Cite this statistical bulletin

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