Public service productivity: adult social care QMI

Quality and Methodology Information for Public service productivity: adult social care, detailing the strengths and limitations of the data, methods used and data uses and users.

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1 . Output information

Output name	Public service productivity: adult social care, England
Data collection	Administrative data
Frequency	Annual, financial year
How compiled	Primarily NHS Digital, with multiple other data sources including: ONS national accounts and prices, Department of Health and Social Care, LaingBuisson, UK Home Care Association and the Ministry of Housing, Communities and Local Government
Geographic coverage	England
Related publications	Public service productivity: adult social care, England Also: Public service productivity: total, UK

2 . About this Quality and Methodology Information report

This quality and methodology report contains information on the quality characteristics of the data (including the European Statistical System five dimensions of quality) as well as the methods used to create it. The information in this report will help you to:

- understand the strengths and limitations of the data

- learn about existing uses and users of the data

- understand the methods used to create the data

- help you to decide suitable uses for the data

- reduce the risk of misusing data

3 . Important points

- The estimate for public service productivity is displayed as an index, showing the change over time of the amount of output provided for each unit of input.

- Public service output and inputs are measured in quantity terms (also referred to as volume terms), as opposed to expenditure terms, to remove the effect of price changes over time.

- Public service adult social care output is also adjusted for changes in the quality of adult social care services, as recommended by the Atkinson Review (PDF, 1.08MB).

- Productivity estimates included in this article are multi-factor productivity estimates, that is, they include goods and services and capital inputs as well as labour input, as opposed to labour productivity estimates; they are not comparable with our measures of whole-economy labour productivity.

- The article Public service productivity: adult social care, England, financial year ending 2019 provides analysis of adult social care productivity in England, but a UK version of this measure, produced using more national accounts data is available as part of Public service productivity: total, UK, 2017.

- These estimates are produced to measure the productivity of public service adult social care, but do not measure value for money or the wider performance of public adult social care services.

4 . Quality summary of the public service adult social care productivity estimates

Overview

Public service adult social care (ASC) productivity is estimated by comparing growth in the total quantity of adult social care output provided (adjusted for quality) with growth in the total quantity of inputs used. If the growth rate of output exceeds the growth rate of inputs, productivity increases, meaning that more output is being produced for each unit of input. Conversely, if the growth rate of inputs exceeds the growth rate of output, then productivity will fall, indicating that less output is being produced for each unit of input.

Productivity estimates included in this article are multi-factor productivity estimates as opposed to labour productivity estimates, and so are not comparable with our measures of whole-economy labour productivity. This is because the inputs for public service productivity include goods and services and capital inputs in addition to labour input. The public service productivity measures included in this article are also not directly comparable with our market sector multi-factor productivity estimates because of differences in the methodology used.

These estimates are produced to measure the productivity of ASC services. They do not measure value for money or the wider performance of ASC services. They do not indicate, for example, whether the inputs have been purchased at the lowest possible cost, or whether funding is allocated to the most efficient or appropriate forms of care provision.

The methodology for calculating these statistics is based on the recommendations of the Atkinson Review (PDF, 1.07MB) on the measurement of government output and productivity for the national accounts.

The methodology for ASC productivity is common between Public service productivity: adult social care, England and Public service productivity: total, UK, 2017, which is produced for the UK and on a calendar-year basis.

The separate release, Public service productivity: adult social care, England, financial year ending 2019, with the measures produced for England only and on a financial-year basis, has been developed to better meet user needs. The England-only, financial-year estimates are on a similar geographical basis and periodicity to other adult social care sector statistics analysed by our main users, enabling them to better understand the trends. A further benefit of analysing data for England only is that it enables the production of additional productivity estimates by service type and client group.

Extensive improvements have been made to the measurement of input and output, and a quality adjustment introduced for the 2019 publication. More detail of these changes is included in the article Measuring adult social care productivity in the UK and England: 2016, while detail of the current methodological approach is described in Public service productivity, adult social care: sources and methods, 2019 update. An overview of the data sources and methods used to produce the public service ASC productivity statistics is presented in the Methods section of this report.

Users and uses

Public service productivity: adult social care was released for the first time in February 2019.

We expect the users of this bulletin to include:

- the Department of Health and Social Care (DHSC)

- HM Treasury

- Local Government Association

- Association of Directors of Adult Social Services

- other public bodies, such as the Office for Budget Responsibility

- think tanks, such as the Institute for Government and the Health Foundation

- academics and researchers working on adult social care

The new ASC productivity estimates for England were initially produced to inform ASC policymaking in DHSC, and were published as Experimental Statistics in June 2018 in the article Measuring adult social care productivity in the UK and England: 2016.

In addition to informing work on the productivity of ASC services in DHSC, the experimental measures have been used to inform HM Treasury in their engagement with other government departments, and have been included in the Institute for Government's annual Performance Tracker, a high-profile analysis of the performance of government services.

The new article has been created to continue to provide updated analysis of ASC productivity to DHSC for policymaking, and for other expected users. Some further revisions to the methodology have been made since the release of the Experimental Statistics publication, but these have been minor.

The purpose of these statistics is to help:

- develop an understanding of how the productivity of adult social care services has changed over time, including for separate sub-service types and client groups

- develop an understanding of how the quantity of adult social care inputs used and service output provided have changed over time in real terms

- understand how likely changes in productivity may affect the funding requirements of adult social care services

- improve the methodology used for estimating total productivity and the measure of public service output within gross domestic product (GDP)

Strengths and limitations

Strengths

- Estimates are produced according to the methodology established by the Atkinson Review, and adopted for other service sectors for other publications in the public service productivity estimates series.

- Quantity input and output data are derived from the same data collection, ensuring the productivity estimates are not distorted by the coverage of inputs and output being misaligned.

- The data source enables separate productivity measures to be produced by service type and client group.

- More timely source data enable these estimates to be published within one year of the end of the reference period, which is considerably more timely than other annual public service productivity estimates.

Limitations

- Since financial year ending (FYE) 2015, NHS Digital no longer collects data on community care activity, such as hours of home care provided; this means the productivity measure covers only a minority of ASC service activity for the years FYE 2015 onwards.

- The quality adjustment is produced using data from NHS Digital's Adult Social Care Survey, which is subject to some quality concerns that may affect its accuracy (including the ability of clients to receive help from carers in completing the survey).

- A break in series between FYE 2014 and FYE 2015 resulting from a change in the data collection means that productivity cannot be measured between these two years.

- Productivity is just one aspect of efficiency and cannot inform our understanding of all aspects of the performance of ASC services, for example, whether the inputs have been purchased at the lowest possible cost, or whether funding is allocated to the most efficient or appropriate forms of care provision.

Recent improvements

The current methodology for measuring ASC productivity was introduced in June 2018.

Prior to this date, public service ASC productivity estimates were only available as part of Public service productivity: total, UK, 2017. The ASC productivity statistics in this publication were reported on a UK, calendar-year basis, which was less useful for potential users of the statistics, and the data and format prevented detailed analysis.

Changes to the methodology introduced in June 2018 enabled the production of estimates for ASC productivity on an England financial-year basis. The new estimates include:

- improvements to inputs, including use of NHS Digital data for input expenditure, which enables analysis by service subsector, improvements to the measure of NHS funding, and improvements to the deflators

- improvements to outputs, including a new output index for FYE 2015 onwards and the incorporation of output coverage for services where activity data are not available, such as direct payments

- a new quality adjustment, applying the concept of adjusted social care-related quality of life and data from the Adult Social Care Survey

Nearly all these improvements were also incorporated in the UK calendar-year estimates published in Public service productivity: total, UK, 2017. However, the UK figures continue to use national accounts data, with improvements incorporated, for local authority input expenditure, as well as incorporating data from the devolved administrations.

More information on these changes is provided in Measuring adult social care productivity in the UK and England: 2016.

Further minor methodological improvements were included in the updated estimates published in 2019, including:

- the incorporation of a new labour deflator produced by DHSC

- a change to the output index for the years after FYE 2015 to differentiate activity for clients aged over 65 years by their primary need for care, as is already done for working-age clients

5 . Quality characteristics of public service adult social care productivity estimates

This document provides a range of information that describes the quality of the data, and details any points that should be noted when using the data.

We have developed guidelines for measuring statistical quality; these are based upon the five European Statistical System (ESS) dimensions of quality. This document addresses the dimensions of quality and important quality characteristics, which are:

- relevance

- timeliness and punctuality

- accuracy

- coherence and comparability

- output quality trade-offs

- assessment of user needs and perceptions

- accessibility and clarity

More information is provided about these quality dimensions in the following sections.

Relevance

(The degree to which the statistical product meets user needs for both coverage and content.)

The UK Centre for the Measurement of Government Activity (UKCeMGA) was launched in 2005 to take forward the recommendations from the Atkinson Review (PDF, 1.08MB) to improve the measurement of government output and productivity, and to report on it.

In the years since the publication of the Atkinson Review, we have developed the annual publication Public service productivity: total, UK, 2017, which includes input, output and productivity estimates by public service sectors, including adult social care (ASC). However, the limited analysis of ASC productivity, with data available only on an aggregate UK basis, and concerns about the completeness of the measures (most notably the lack of quality adjustment) meant the ASC productivity measure previously had limited use.

The impetus for the development of an improved set of ASC productivity statistics came from the 2016 Bean Review of UK Economic Statistics (PDF, 5.13MB).This emphasised the need to further develop measures of service sector output, including quality adjustments for the public sector, and from users in the Department of Health and Social Care (DHSC), who required more specific analysis of ASC productivity to support policymaking.

Improvements to the methodological quality and completeness of the measure, including a new quality adjustment, have been incorporated in Public service productivity: total, UK, 2017.

However, a separate publication specific to ASC productivity in England has been introduced to further improve the usefulness of the measures to policy users such as DHSC. The benefits of this publication are:

- as ASC is a devolved policy issue, analysis of ASC services is typically taken at the England-only level, and so these measures integrate better with other indicators of ASC system performance

- most other data sources used for analysis of ASC services are produced on a financial-year basis, and the change in periodicity to financial year also helps these measures integrate better with other indicators of ASC system performance

- the use of England-only data sources enables more in-depth analysis of productivity, such as analysis by client group or service type

- the use of England-only data results in a substantial improvement to the timeliness of this measure

Currently there are insufficient data available to produce equivalent analysis for the devolved administrations. It should be noted that the absence of activity data for Wales and Northern Ireland, input data for Northern Ireland, and an equivalent survey source for quality adjustment for all three devolved administrations, limits our ability to produce a fully comprehensive measure of ASC productivity for the UK.

These statistics are produced within the Efficiency Measurement Unit at the Office for National Statistics (ONS). This unit has been created to further develop the existing public service productivity series and produce new metrics for measuring public service efficiency and productivity.

The Efficiency Measurement Unit works with stakeholders, including those involved in health and social care analysis and policymaking, to target development work to fit user needs. We very much welcome feedback from all interested parties, and if you would like to get in contact regarding the measurement of adult social care productivity, or other areas of public service productivity and efficiency, please contact James.Lewis@ons.gov.uk.

Accuracy and reliability

(The accuracy of statistical outputs in the general statistical sense is the degree of closeness of computations or estimates to the exact or true values that the statistics were intended to measure. Reliability refers to the closeness of the initial estimated value to the subsequent estimated value.)

Both output and inputs series are constructed using a variety of administrative and national accounts data. The accuracy of the derived series therefore depends on the accuracy of the source data. It is difficult for us to provide a confidence interval around our estimates, given the multiple sources of data on which the estimates are based. We include additional evidence from independent sources – such as population statistics – which provides additional context to inform the interpretation of the ASC productivity statistics.

The primary source of input and output data is NHS Digital's Adult Social Care Activity and Finance Report. This data source collects detailed expenditure, income and activity data for all councils with adult social services responsibilities in England. NHS Digital relies on local authorities to provide accurate data in this return, although they perform validation checks, including direct communication with local authorities, to maximise the quality of the returns. Where discrepancies in the returns provided cannot be resolved, NHS Digital publishes this information.

Activity data covering the number of services provided does not cover all ASC services, and this coverage has been lower since financial year ending (FYE) 2015 because of changes to the source data. To ensure that differences in the coverage of inputs and outputs do not drive changes in productivity, the measure uses the "output-equals-input" approach for services where no activity data are available. However, this does not enable the measure to capture changes in the productivity of services where no activity data are available. More information on this issue can be found in Measuring adult social care productivity in the UK and England: 2016.

The quality adjustment makes use of data from the NHS Digital Adult Social Care Survey. As documented by The Office for Statistics Regulation (PDF, 347.9KB), there are some accuracy concerns with this survey, particularly around the ability of respondents to receive help in completing the survey, including help from carers. More information on these issues can be found in the Things you need to know about this release section of Public service productivity: adult social care, England, financial year ending 2019, and in NHS Digital's Data Quality Statement (PDF, 676KB).

Coherence and comparability

(Coherence is the degree to which data that are derived from different sources or methods, but refer to the same topic, are similar. Comparability is the degree to which data can be compared over time and domain, for example, geographical level.)

The use of NHS Digital data for England only, and on a financial-year basis enables direct comparison of the productivity measure with other analysis for the sector. The activity and expenditure data are consistent with that used in NHS Digital's unit cost analysis, an important alternative efficiency indicator. The quality adjustment data are taken from the Adult Social Care Survey, the source for the Adult Social Care Outcomes Framework, the main source for statistical analysis of ASC service quality and client outcomes.

There is a break in the series between FYE 2014 and FYE 2015 resulting from a change in the data collection for expenditure and activity data carried out by NHS Digital, and this prevents the measurement of productivity between these two years. In addition, as the Adult Social Care Survey, which is used to produce the quality adjustment, only began in FYE 2010, there is no quality adjustment for years before this date.

The measures in Public service productivity: adult social care, England, financial year ending 2019 and those for the UK published in Public service productivity: total public service, UK, 2017, differ in geographical coverage and periodicity, with the England measure published on a financial-year basis and the UK measure published on a calendar year basis. There is also a further difference in the expenditure data used for inputs in England.

While the England-only measure uses expenditure data from NHS Digital's Adult Social Care Activity and Finance Report, expenditure for the UK measure is taken from the UK National Accounts, which in turn use the Ministry of Housing, Communities and Local Government's (MHCLG) Local Authority Revenue Expenditure and Financing outturns. As reported by The Office for Statistics Regulation (PDF, 347.9KB), there are differences in the statistics produced by these two sources and a cross-government working group has been formed to improve coherence.

Public service healthcare productivity estimates are also available on an England financial-year basis and are also produced using the Atkinson Review methodology.

However, it is not possible to directly compare these public service productivity estimates with other ONS productivity estimates. Public service productivity estimates use an expenditure framework, that is, the government as a purchaser of services on behalf of citizens, rather than as a producer. The figures therefore give a measure of the productivity of the government's provision of services, whether produced by state-controlled organisations, or purchased from the private sector. Traditional methods of productivity estimation use a production or supply framework, and so are not directly comparable to these statistics for reasons of:

- coverage

- measurement of output differences

- quality adjustment

Accessibility and clarity

(Accessibility is the ease with which users are able to access the data, also reflecting the format in which the data are available and the availability of supporting information. Clarity refers to the quality and sufficiency of the release details, illustrations and accompanying advice.)

Our recommended format for accessible content is a combination of HTML webpages for narrative, charts and graphs, with data being provided in usable formats such as CSV and Excel. We also offer users the option to download the narrative in PDF format. In some instances, other software may be used, or may be available on request. For further information, please refer to the contact details at the beginning of this report.

For information regarding conditions of access to data, please refer to the following:

- [Terms and conditions (for data on the website)](#)

- [Freedom of information](#)

- [Accessibility](#)

More details on related releases can be found on the [GOV.UK release calendar](#). If there are any changes to the pre-announced release schedule, public attention will be drawn to the change and the reasons for the change will be explained fully.

In addition to this report, more information on methodology can be found in [Public service productivity: adult social care: sources and methods, 2019 update](#) and information on the effect of recent methods changes can be found in [Measuring adult social care productivity in the UK and England: 2016](#).

Timeliness and punctuality

(Timeliness refers to the lapse of time between publication and the period to which the data refer. Punctuality refers to the gap between planned and actual publication dates.)

The regular release Public service productivity: total, UK is published around two years after the end of the data reference period to which it pertains.

This time delay is to the result of the need to incorporate all required data for all service sectors. Most data for Public service productivity: total, UK, 2017 must first be processed for the national accounts, for incorporation in the annual Blue Book and other data sources. Data required for the healthcare quality adjustment are available only after a considerable time lag.

Public service productivity: adult social care, England uses only some national accounts data. Most expenditure, activity and quality data are drawn directly from NHS Digital. The NHS Digital data are available about seven months after the end of the period they cover. As a result, the ASC productivity estimates can be published around 10 months after the end of the reference period. This improvement in timeliness increases the usefulness of the measures to users, and responds to the need to improve the timeliness of public service productivity statistics in the Bean Review.

The publication will usually be published as part of the UK productivity theme day.

Concepts and definitions

(Concepts and definitions describe the legislation governing the output and a description of the classifications used in the output.)

The measurement of inputs, quantity output and quality follow the principles set out in the Atkinson Review, and are consistent with the approaches used throughout our public service productivity estimates.

Output measures build on the existing ASC output measures used in the national accounts, which follow guidance in the System of National Accounts (SNA) 1993 and 2008, and the European System of Accounts 1995 and subsequently the European System of Accounts 2010. While the developments to output included in the ASC productivity measures are not currently included in the national accounts, we intend to incorporate the new activity data source and relevant methods changes in the national accounts in future.

The service type and client group analysis uses the same definitions used by NHS Digital. These definitions changed in FYE 2015 as a result of NHS Digital's Zero-Based Review of ASC statistics. Information on these changes can be found in Measuring adult social care productivity in the UK and England: 2016.

Geography

The public service ASC productivity estimates are available for England in Public service productivity: adult social care; and are available for the UK in Public service productivity: total, UK, 2017. Because of data limitations, the inputs in the UK measure are estimated for Northern Ireland based on inputs growth in the rest of the UK, the output is estimated for Wales and Northern Ireland based on output growth in the rest of the UK, and the quality adjustment is estimated for all three devolved administrations based on the quality adjustment for England.

Output quality

The quality of these estimates is dependent on the quality of the data sources and methodology used to produce the estimates.

NHS Digital's Adult Social Care Finance Return (ASC-FR) is the primary data source for the public service ASC productivity statistics, providing both the expenditure and activity data used in the estimates. These data are collected from local authorities via standardised collection forms and are validated by NHS Digital. NHS Digital publishes a data quality statement on the ASC-FR (PDF, 230KB), which details the steps they take to maximise data quality and potential quality issues.

The quality adjustment is produced from NHS Digital's Adult Social Care Survey (ASCS). NHS Digital publish extensive commentary on the accuracy of the survey results in a data quality statement on the ASCS (PDF, 584KB) and information on quality concerns regarding this data which are most relevant to the productivity measure are included in the Things you need to know about this release section of Public service productivity: adult social care, England, financial year ending 2019.

The expenditure weights used to calculate the deflators come from a number of data collections and should be regarded as estimates of how much local authorities and other social care providers spend on various goods and services input components. The expenditure weights are combined with prices data taken from our National Statistics releases such as the Consumer Prices Index and producer price indices.

The methodology is consistent with the Atkinson Review and has been quality assured by internal and external experts, including from the Department of Health and Social Care and external research organisations.

More information on the data sources, including links to data quality reports, and the methodology used can be found in the Methods used to produce the public service adult social care productivity estimates section.

Why you can trust our data

We are the UK's national statistics institute, and largest independent producer of statistics. Our data and security policies detail how data are collected, secured and used in the publication of statistics. We treat the data that we hold with respect, keeping it secure and confidential, and we use statistical methods that are professional, ethical and transparent.

The public service productivity estimates have National Statistics status, designated by the UK Statistics Authority in accordance with the Statistics and Registration Service Act 2007. This designation signifies compliance with the Code of Practice for Statistics, which has recently been updated, and focuses on trustworthiness of data in greater depth.

6 . Methods used to produce the public service adult social care productivity estimates

A summary of sources of data and statistical methods used to compile the output are documented in Public service productivity, adult social care: sources and methods, 2019 update.

This section provides an overview of the data sources and methods used to produce the three elements of the public service adult social care (ASC) productivity statistics – inputs, quantity output and the output quality adjustment.

Main data sources

These estimates are produced primarily from published data sources. Links to the data quality reports for the primary sources for quantity productivity and the quality adjustment can be found in the Output quality section of this report.

The volume of ASC input is produced using ASC expenditure deflated by sector-specific deflators.

ASC expenditure is derived from [NHS Digital's Activity and Finance Report](#) and covers all public funding, including income local authorities receive from the NHS to fund ASC services. National accounts data is used to estimate the proportion of expenditure that is on local authority labour, goods and services inputs, and local authority capital consumption.

The expenditure data are deflated by the following range of appropriate deflators:

- Labour deflators are taken from the Department of Health and Social Care's Personal Social Services Pay Indices.

- Independent sector intermediate consumption spending is deflated by a compound deflator produced using Office for National Statistics (ONS) price data and input expenditure data from LaingBuisson and the UK Home Care Association.

- Local authority intermediate consumption spending is deflated by a compound deflator produced using ONS price data and input expenditure data from the Ministry of Housing, Communities and Local Government's Subjective Analysis Return.

- Direct payments expenditure is deflated by a compound deflator produced using ONS price data and input expenditure data collected from local authorities in co-operation with the London Association of Directors of Adult Social Services Improvement Programme.

- As part of the direct calculation of capital consumption in volume terms in the national accounts, the same deflators used for gross fixed capital formation are used.

ASC quantity output is also produced using data from NHS Digital's Activity and Finance Report and its predecessors. The output measure combines the expenditure data with activity data from this report, using the methodology described in the How we process and analyse the data section.

Consistent with the guidelines of the Atkinson Review, the quantity of ASC output is adjusted for changes in the quality of outcomes. The quality adjustment for ASC output is based on the concept of adjusted social care-related quality of life from the Adult Social Care Outcomes Framework, the main source of outcomes data for ASC services in England.

Separate quality adjustments were developed for community care and residential and nursing care, both using data from NHS Digital's Adult Social Care Survey, a sample survey of approximately 65,000 ASC clients across England, covering approximately 10% of the population using ASC services.

How we process and analyse the data

Data from the Activity and Finance Report and Adult Social Care Survey datasets obtained from NHS Digital are extracted using the statistical processing software, Python. Python is also used to produce the quality adjustment, while the final stages of input and output processing and the application of the quality adjustment are conducted in a pre-prepared Excel spreadsheet system.

ASC inputs are produced by deflating components of public expenditure on ASC services by appropriate deflators as described in the Main data sources section.

ASC quantity output is produced via a cost-weighted activity index, where activity data are available, and on an "output-equals-inputs" basis where they are not available.

The cost-weighted activity index is produced by calculating the growth rates of different ASC activities and weighting these by their unit costs. As a result, growth in activities that are high-volume and expensive has a greater effect on the output index than a similar rate of growth in activities that are uncommon and low cost. Growth between two years in the index is calculated using the Laspeyres method, which uses cost weights derived from the first year of each pair of years to calculate growth in the overall index between each pair of years in the series.

For types of care where activity data are not available, quantity output is calculated on an "output-equals-inputs" basis, where the volume of output is set to be equal to the volume of input. This prevents the productivity measure being driven by differences in input and output coverage, but does not enable productivity to be measured for these types of care.

The expenditure data used in the inputs and output measures are calculated using the same definitions as for inputs and activity data. These are netted down to remove activity funded by client contributions, which is outside the scope of the public service productivity analysis.

The quality adjustment is based on the concept of adjusted social care-related quality of life from the Adult Social Care Outcomes Framework (ASCOF), the main source of outcomes data for ASC services in England.

Separate methods for producing the quality adjustment are applied to community care, and residential and nursing care. Both use Adult Social Care Survey (ASCS) data on clients' responses to how well their needs are met across eight domains of care-related quality of life. Each level of response on care needs across each of the eight domains is then weighted to account for its importance in affecting quality of life, using weights developed from a separate survey of community care users. Factors predominantly outside the influence of ASC services, but which affect the likelihood of needs being met, are then controlled for to derive the change in social care-related quality of life resulting from changes in ASC service quality.

For community care, factors from the calculations used in the ASCOF are applied to the person-level data in the ASCS to remove the influence on care-related quality of life of clients' age, health status, suitability of clients' home for meeting their needs and clients' ease of travelling around outside in their local environment. As the factors used in ASCOF only relate to community care users, for residential and nursing care, a regression model is used to calculate the impact of ASC services on care-related quality of life, controlling for these external factors.

Further information on the methods used to produce the quality adjustment for ASC output can be found in Public service productivity: adult social care: sources and methods, 2019 update.

Chain-linking is used to produce input and output indices. As a result, input and output do not experience step changes in index levels when a data source changes, which would distort the productivity measure.

The analysis is conducted using the same service type and client group definitions as NHS Digital, and the analysis and definition of net expenditure is consistent with NHS Digital's unit costs analysis.

How we quality assure and review the data

Data are quality assured at a detailed level to ensure there are no changes in how expenditure, income or activity data have been collected for each service type for each client group. NHS Digital publishes information on changes to the data collection, which enables us to understand changes we observe in the data. We also triangulate the results of the ASC productivity estimates against other relevant sources, such as measures from the NHS Digital publications, the Adult Social Care Activity and Finance Report and the Adult Social Care Outcomes Framework.

The statistics are quality assured internally and by experts in the Department of Health and Social Care. In addition, the methods used were quality assured by other experts, including from the Health Foundation and the National Institute of Economic and Social Research. The development of the quality adjustment was assisted and quality assured by Julian Forder and Olena Nizalova of the Personal Social Services Research Unit at the University of Kent, on whose work the quality adjustment approach was based.

How we disseminate the data

Public service ASC productivity estimates and analysis for England is published annually in Public service productivity: adult social care, England, financial year ending 2019. Estimates for the UK are published as part of Public service productivity: total, UK, 2017.