

Improvements to non-market adult social care output in the National Accounts

Information on the updated methodology for measuring the output of non-market adult social care services.

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1 . Main points

- Blue Book 2023 will include improvements to the measurement of the volume output of adult social care services across the four UK nations.
- Changes include a new cost-weighted activity measure for England for 2014 onwards and improvements to the existing cost-weighted activity measure for earlier years.
- Services for which no activity data are available will be measured indirectly based on spending adjusted to remove the effects of input-cost inflation.
- Improvements have also been made to the measurement of adult social care output in Scotland, and volume output measures have been included for Wales and Northern Ireland for the first time.
- These changes will result in faster growth in the volume output of industries 87 (residential care activities) and 88 (social work activities without accommodation).
- These changes will also result in faster growth in the volume of general government final consumption expenditure and reduce the growth in the implied deflator for this component.
- As volume output measures for public services are produced independently of current price estimates, these changes do not result in a change to contribution of adult social care services to nominal GDP.

2 . Introduction

Adult social care (ASC) services provide care and support to older people, adults with learning or physical disabilities, adults with mental health problems, drug and alcohol misusers, and carers. Publicly funded ASC services are organised by local authorities in Great Britain and health and social care trusts in Northern Ireland.

ASC services include:

- residential and nursing care
- home care services
- day care services
- supported living and accommodation
- "meals on wheels"
- equipment and home adaptations
- care assessments and support services

The volume output measure for ASC to be introduced in Blue Book 2023 is also used to measure the quantity output of ASC in our [Public Service Productivity estimates](#). Total public service productivity has incorporated the new output measure for England since our [2020 release](#) and the new output measures for the devolved administrations since April 2023, as shown in our [Public service productivity: total, UK, 2020 article](#).

In the National Accounts, ASC forms part of two industry divisions under the Standard Industrial Classification system, 87 (residential care activities) and 88 (social work activities without accommodation).

3 . Measuring the volume output of public services

The new methods form the ASC component of general government final consumption expenditure (GGFCE) within GDP. GGFCE refers to public services, that is services that are publicly funded. GGFCE includes publicly funded services that are provided by both the public sector and private or third sector providers.

As public services lack a market price for valuing their output, an alternative methodology must be used to measure public service output. The approach used by the Office for National Statistics (ONS) is set out in the [Atkinson Review \(PDF, 1MB\)](#) and is consistent with the international guidelines, the [System of National Accounts 2008](#) and [European System of Accounts 2010](#).

For current price estimates, the output of non-market services is valued at the sum of the total costs of production. Note the changes reported in this article do not result in any changes to current price estimates of GDP.

For volume estimates, the approach to the measurement of the growth of non-market services over time depends on the available data.

Where the requisite data are available, the methodology preferred in the aforementioned guidance is known as the direct volume output or cost-weighted activity approach. This involves stratifying the activity of public services by type of service, measuring the growth in activity for each type of service and then producing an overall growth index for the service by weighting together each of the individual activity growth rates by their cost. As a result of weighting activities by their costs, an increase of one unit of activity for a high-cost activity has a greater effect on the output than an increase of one unit of activity for a low-cost activity.

The cost-weighted activity measure is typically produced using the Laspeyres index approach, where the unit costs used for weighting different activity types are those taken from the first year of each activity pair. Because ASC includes activity that is partly publicly funded and partly client funded, and only the publicly funded part is measured using the direct volume output approach, the cost-weighted activity calculation is adjusted to scale activity by the proportion that is publicly funded (p). The formula used for the cost-weighted activity index for ASC is therefore:

$$L^t = L^{t-1} \cdot \frac{\sum_i (p_i^t \cdot a_i^t \cdot u_i^{t-1})}{\sum_i (p_i^{t-1} \cdot a_i^{t-1} \cdot u_i^{t-1})}$$

where:

L = index value
p = proportion of expenditure publicly funded
a = activity count
u = unit cost
t = year
i = activity type

For non-market services where no activity data are available, alternative methodologies may be employed to measure output growth. The main alternative methodology is the indirect volume output approach based on growth in the volume of inputs. This may be measured using growth in deflated expenditure, and makes the assumption that the volume of output growth equals the volume of inputs growth.

4 . Changes to adult social care output in England

Adult social care (ASC) output in the National Accounts, has previously been measured using a cost-weighted activity index produced using data from the NHS collections [Personal Social Services Expenditure and Unit Costs data return \(PSS-EX1\)](#) and [Assessments and Packages of Care return \(RAP\)](#). However, since the discontinuation of this data source, which was last produced for the financial year ending (FYE) 2014, ASC output growth has been estimated based on forecasts adjusted for consistency with expenditure data growth.

Blue Book 2023 will see the introduction of a revised and updated series of ASC output, which makes use of a replacement data collection from NHS Digital to measure ASC output growth from 2014 onwards, and introduces improvements to the methodology for earlier years.

The main changes to the measurement of ASC output growth in England are:

- FYE 2015 onwards - incorporating a new data source for England to produce a new cost-weighted activity index
- FYE 2005 onwards - incorporation of NHS funding for ASC in ASC output
- 1997 onwards - other improvements to cost-weighting
- 1997 onwards - including services for which no activity data are available using the indirect volume output approach through deflated expenditure
- period beyond latest data collection (2021 onwards in Blue Book 2023) - updating the method to forecast ASC output growth for the most recent quarters using an ARIMA (Autoregressive Integrated Moving Average) time series modelling process (read more on ARIMA modelling in the research paper, [Application of Time Series Models for Streamflow Forecasting \(PDF,775KB\)](#))

New cost-weighted activity index

The new cost-weighted activity introduced in Blue Book 2023 makes use of the [Adult Social Care Financial Return \(ASC-FR\)](#) and the [Short And Long-Term care \(SALT\)](#) data collections introduced by NHS Digital from FYE 2015.

While the use of these data ensures the preferred direct volume approach can be used in ASC output, the range of service activities covered by the ASC-FR and SALT returns is greatly reduced compared with the earlier PSS-EX1 and RAP returns. Therefore, from FYE 2015 onwards, activity data are only available for residential and nursing care placements and are no longer collected for home care, day care and equipment and adaptations. However, the ASC-FR and SALT collections disaggregate data for residential and nursing care placements by more detailed client support need groups for both older clients (which were previously reported as a single group) and working-age clients, enabling more precise cost-weighting.

The ASC-FR and SALT collections also include new activity data collected on short-term care. However, investigation into short-term care data has revealed inconsistencies across local authorities (LAs) in the reporting of the activity data, and so short-term care has been measured using the indirect rather than direct approach.

Because the activity categories recorded in the two sets of data collections differ, it is not possible to measure activity growth between FYE 2014 and FYE 2015, and so ASC output growth in England between these two years is measured only using the indirect output approach, described in more detail later in this article.

Improvements to direct volume output measures

In addition to the introduction of a new cost-weighted activity index for FYE 2015 onwards, a set of methodological improvements has been made that apply to both existing and new cost-weighted activity measures.

Firstly, output has been amended to include NHS-funded activity. This change means both that clients in LA-arranged residential and nursing care who are fully funded by the NHS will be included in ASC output and that NHS funding is accounted for in the weighting where this forms part of the costs.

These changes have been incorporated in the growth rate of ASC output across all years back to FYE 2005, when data on NHS funding for ASC were first recorded by the Health and Social Care Information Centre. As a result of this change, from Blue Book 2023, the non-market ASC output measure reflects the growth in NHS funding for ASC in England, such as through the introduction of the Better Care Fund in FYE 2016.

The cost-weighting methodology has also been improved by the equalisation of cost weights for residential care services between those provided by LAs and other providers. As a result of this change, for any given client age group and primary support need group, output growth is no longer weighted differently depending on whether the provider is a local authority (LA) or a non-LA provider. Therefore, transferring services from the LA to the independent sector, where charges to LAs may often be lower than the full cost of providing these services, no longer results in a reduction in the output index. A fuller explanation of the reasons for and consequences of this change can be found in Section 7. Measuring quantity output, of our [Measuring adult social care productivity article](#).

Other improvements to the cost-weighted activity index include the addition of capital charges and the exclusion of grants given to voluntary organisations from the cost-weights. Capital charges are now included as they reflect capital consumption, a relevant part of the total cost of providing services, while grants to voluntary organisations are excluded as the activity these grants fund is not covered in the activity data we use.

Indirect volume output measurement

As explained in "New cost-weighted activity index", the range of services for which activity data were collected were greatly reduced from FYE 2015 onwards. As a result, the proportion of public ASC output that could be measured directly was reduced from over 75% to around 35%.

Therefore, to ensure the output measure is representative, output for the services without activity data is measured indirectly, where the output growth is assumed equal to the growth in the volume of inputs as measured by deflated expenditure. This indirect measure is also applied between 1997 and FYE 2014, where the proportion of output covered by activity data gradually declined. The introduction of this indirect measure is the main source of the upwards revision to ASC output growth between 1997 and 2014. As mentioned in the previous section, growth between FYE 2014 and FYE 2015 is measured entirely through the indirect approach because of the change in data collections.

The expenditure data used in the indirect output measure are again drawn from the PSS-EX1 and ASC-FR publications, covering both LA and NHS expenditure. Expenditure is used from all services other than residential and nursing care, and commissioning and service delivery.

No expenditure data are included for residential and nursing care as these are measured using the direct approach. Expenditure for commissioning and service delivery is also excluded from the output measure as this expenditure can be considered an overhead cost for other services (including those that are already measured directly) rather than an additional service provided to clients. Exclusion of expenditure on commissioning and service delivery also means that funding in FYE 2021 onwards for COVID-19 infection control and hospital discharge costs does not count towards additional output where no additional services are provided, as detailed further in our [Public service productivity, adult social care, England article](#).

In the indirect output measure, expenditure is disaggregated by estimates of the proportion of expenditure accounted for by different types of inputs, with each estimated input type then deflated using a specific measure of inflation. Firstly, expenditure is split by care provided by LAs and care provided by the independent sector using data provided by NHS Digital. LA and independent sector expenditure are both then split further into estimated labour and intermediate consumption input components using a range of data sources from ONS, LaingBuisson, and the UK Home Care Association.

Labour costs are deflated using ASC pay indices produced by the Department for Health and Social Care, and intermediate consumption deflated by a range of deflators created from a range of data sources, including subcomponents of the Consumer Price Index and Services Producer Price Index.

The deflators used to produce the indirect output measure are also used in the inputs measure for public service ASC productivity, and more information about these deflators can be found in Table 1 of the [inputs section of our ASC productivity methodology article](#).

5 . Changes to adult social care output in the devolved administrations

Aside from England, the current adult social care (ASC) output measure includes data for Scotland, although this has been based on forecasts since the discontinuation of the current data source in financial year ending (FYE) 2017. In Blue Book 2023, estimates for Scotland will be revised to incorporate new data, and new output measures will be included for Wales and Northern Ireland.

The measure of UK ASC output is then produced by weighting the contributions of ASC output in the four nations by their respective shares of expenditure. This process uses expenditure data from HM Treasury's [Public Expenditure Statistical Analysis: Country and Regional Analysis](#) from the years FYE 2013 onwards, and the total expenditure measure as defined in the output measures for earlier years.

ASC output for Scotland

Until FYE 2017, ASC output for Scotland was measured using data from the Information Services Division (ISD) of NHS Scotland to produce a cost-weighted activity index that was similar to that produced for England until FYE 2014. The changes introduced in Blue Book 2023 replace the forecasts used since FYE 2017 with a new output measure that combines a direct and indirect approach.

The direct volume output measure for Scotland is produced using activity data collected by Public Health Scotland (PHS). As PHS data do not include financial information, cost-weights are produced using local government finance return (LGFR) data, which enable spending through Integration Joint Boards to be accounted for in a similar manner to NHS funding in England and similar adjustments to be made to remove client-funded activity.

The PHS activity data and LGFR finance data are not disaggregated by the same categories and so relatively broad categories must be used, with one for total care home activity and one for total home care activity.

The remaining output not accounted for in the direct volume output measure is accounted for indirectly, with the residual expenditure deflated using the deflators described for England in [Section 4, Input Methodology of our ASC productivity methodology article](#). These deflators use a mixture of UK-level inflation index components and UK- and England-level component weights, with the assumption that a similar set of inputs is required to provide care across the UK in any given year.

The indirectly measured output component is larger between FYE 2017 and FYE 2019 as activity data are not available to calculate the growth rate of home care output directly. As with the other nations, an adjustment is made to deduct COVID-19 cost support to providers in the applicable years, as this does not result in an increase in the quantity of services provided.

Figures for ASC output in Scotland before FYE 2017 remain unchanged as the data currently used provide the best available measure and cover most of ASC output in Scotland.

ASC output for Wales

Previously, the ASC volume output measure did not include Wales, for which no ASC activity data are available to measure output directly. However, expenditure data are available from FYE 2002, and this has been used to calculate output in a similar manner to the indirect output components for the other three nations.

To produce the indirect output measure, similar deflators are used as for England, although the weights applied to the local authority (LA) and independent sector components differ to reflect data on the expenditure split by provider sector in Wales.

The expenditure data used include NHS funding and exclude client funding in a similar manner to England, and a similar adjustment is applied to remove COVID-19 support funding, as this does not result in an increase in the quantity of services provided.

ASC output for Northern Ireland

From Blue Book 2023, ASC output for Northern Ireland will be included using a combination of direct and indirect output measurement approaches.

The direct volume output approach makes use of activity and expenditure data provided by the Department of Health Northern Ireland for the period FYE 2007 to FYE 2020. This data collection covers a wide range of ASC services, including residential and nursing care, domiciliary care and day care, with services split by client group where appropriate.

An indirectly measured output component is also included from FYE 2013, with the indirect output measured using the residual expenditure not accounted for in the direct volume output measure. This approach uses HM Treasury's Public Expenditure Statistical Analysis: Country and Regional Analysis to define total ASC expenditure. As with Scotland and Wales, to deflate this expenditure, the same deflators are used as for England.

As the activity data collection used for the direct volume output measure has been suspended since FYE 2020, ASC output for Northern Ireland is entirely indirectly measured from that point, although we intend to reintroduce the direct component when activity data become available in future.

6 . Related links

[Public service productivity: total, UK, 2020](#)

Article | Released 28 April 2023

Updated measures of output, inputs and productivity for UK public services between 1997 and 2020: service area breakdown, quality adjustment, latest revisions.

[Public service productivity, adult social care, England: financial year ending 2021](#)

Article | Released 25 July 2022

Trends in publicly funded adult social care inputs, quantity and quality of output, and productivity in England, between financial year ending 1997 and financial year ending 2021.

[Measuring adult social care productivity in the UK and England: 2016](#)

Article | Released 1 June 2018

Methods and analysis of a new public service adult social care productivity measure, including new quality adjustment and new disaggregated measures for England.

7 . Cite this methodology

Office for National Statistics (ONS), released 01 September 2023, ONS website, methodology, [Improvements to non-market adult social care output in the National Accounts](#)