

Public service productivity: adult social care, sources and methods, 2019 update

Information about the data sources and methodology used to produce the public service adult social care productivity estimates.

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1 . Introduction

This article explains the updated methodology used to produce estimates for public service adult social care (ASC) productivity. These statistics are produced on a UK calendar year basis, to form part of Office for National Statistics' (ONS's) total public service productivity statistics, and on an England financial year basis, enabling more detailed analysis and timely publication of these statistics for users in England.

The new methodology, in Experimental Statistics form, was published for the first time in [Measuring adult social care productivity in the UK and England](#) in June 2018. UK calendar year figures under the new methodology were first included in the series [Public service productivity: total, UK](#) in January 2019. Timelier England financial year statistics were published separately for the first time in February 2019.

This article covers the methodology for both. In most cases, the methodology for measuring ASC productivity is the same for the England-only and UK statistics. This article also highlights where differences between the two sets of statistics occur, most notably for input expenditure.

2 . Public service productivity

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

The framework for Office for National Statistics (ONS) measures of public service productivity was established by the [Atkinson Review \(2005\) on the Measurement of Government Output and Productivity \(PDF, 1.1MB\)](#). Under these guidelines, the quantity of inputs and outputs are defined in volume terms.

Inputs are composed of labour, goods and services, and capital consumption, and are measured on a volume basis using deflated expenditure. Quantity output is measured using the cost-weighted number of individual activities performed, where activity data are available, and where activity data are not available, output is measured using the equivalent deflated expenditure data as inputs. Output is adjusted for quality in accordance with the Atkinson Review guidelines.

The term “public service” refers to the definition of the coverage of these measures, that is, services funded through public expenditure. This definition is not only limited to services provided by public sector providers, but also includes publicly funded services provided by the independent sector.

Whilst these productivity estimates provide a measure of the amount of output that is produced for each unit of input, they do not measure value for money, whether inputs have been obtained for the lowest possible cost, or the wider performance of public services.

3 . Adult social care services

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. Provision of ASC is the responsibility of local authorities in Great Britain.

ASC services include:

- placements in residential and nursing care
- provision of home care services
- day care services
- supported living and accommodation
- “meals on wheels”
- equipment and home adaptations
- care assessments and support services

Local authorities can provide ASC services themselves or contract ASC services from independent sector providers. The public service productivity estimates cover both forms of provision.

This article does not cover the methodology for the measurement of productivity for children’s social care services, although these are also included in the [total public service productivity statistics](#).

4 . Input methodology

Adult social care (ASC) inputs consist of two main components: public expenditure on ASC services and deflators measuring changes in the cost of inputs. This section covers the measurement of both expenditure and deflators for the three components of public service inputs:

- local authority (LA) labour
- goods and services
- LA capital consumption

Of these components, goods and services is the largest and includes all services contracted from independent sector providers and services purchased by clients using direct payments, as well as LAs’ intermediate consumption of goods and services.

The quantity of ASC inputs is estimated by deflating expenditure using appropriate deflators to convert current expenditure into a quantity input measure, alternatively known as a volume input measure. Changes in inputs can therefore result both from changes to expenditure and changes to the deflator used.

Measuring expenditure

Different data sources are used to measure local authority expenditure for the UK and England ASC productivity measures. For the UK productivity measure, expenditure data used in the national accounts form the basis of input expenditure. This approach is taken as national accounts data give more comprehensive coverage of the UK’s constituent nations and are straightforward to integrate into the [total public service productivity estimates](#).

An alternative data source is used for measuring ASC inputs expenditure for England – NHS Digital’s Adult Social Care Activity and Finance Report and its predecessors. These data sources are used as they enable analysis of productivity for subsectors of ASC services, such as by client age group or service type.

This section focuses first on the expenditure data used in the UK inputs and then covers the expenditure data used in the England inputs. More information on the changes to ASC inputs made since January 2018 can be found in [Measuring adult social care productivity in the UK and England: 2016](#).

Local authority inputs expenditure for the UK

Public service ASC is primarily funded by local authorities (LAs) in Great Britain. The LA current expenditure data used in the ASC productivity measure are part of the measure of social protection expenditure used in the national accounts. These national accounts data in turn are produced using the [Local Authority Revenue Expenditure and Financing](#) data return for England, and equivalent data sources for Scotland and Wales. LA capital consumption¹ is also measured using data from the national accounts and is estimated using the [perpetual inventory method](#).

Due to a lack of inputs and output data, measures for Northern Ireland are not included in the ASC productivity estimates.

While the expenditure data used for UK ASC inputs are taken from the national accounts, there are a few adjustments made to the data to maintain a consistent time series to cover ASC services specifically. The most substantial of these adjustments is to remove housing services expenditure, which, in the national accounts, is currently classified with ASC services from financial year ending (FYE) 2012 onwards. We intend to incorporate these changes in the UK National Accounts, The Blue Book in future.

Local authority inputs expenditure for England

For England, local authority ASC expenditure is taken from NHS Digital's Adult Social Care Activity and Finance Report and its predecessors, as this dataset provides the detailed breakdowns of expenditure needed to produce productivity measures for subsectors of ASC spending.

Within the England inputs measure, national accounts data are still used to estimate capital consumption; and the proportion of ASC expenditure on LA labour inputs, LA capital inputs and other inputs.

Non-local authority ASC expenditure in inputs

In addition to LA expenditure, LA-organised ASC services are also partly funded by care clients themselves and by transfers from the NHS.

Because Office for National Statistics (ONS) public service productivity measures cover only publicly funded services, client contributions to funding ASC services are excluded from the ASC inputs and output is also adjusted to remove activity funded by client contributions.

LAs also receive funding for ASC services from the NHS. This source of funding has increased in recent years due to policy developments such as the introduction of the [Better Care Fund](#), which was introduced in FYE 2016 and aims to increase collaboration between NHS and LA bodies to support clients with long-term conditions.

NHS transfers to LAs are measured using the same data source as inputs expenditure for England, NHS Digital's Adult Social Care Finance Return². As these data are only available back to FYE 2005, NHS transfers for social care are not included in the measure in the years before FYE 2005. It should be noted that due to the use of chain-linking³ in the production of the volume inputs series, the inclusion of NHS transfers in FYE 2005 does not cause an increase in inputs spending. Due to a lack of available data, NHS funding for ASC services is not included for the devolved administrations and so NHS funding for local authorities is included from England in both the England and UK measures.

Symmetrical adjustments are made to the output calculations to remove activity funded by client contributions and include activity funded by the NHS.

Accounting for cost inflation

To convert expenditure data into the volume inputs used for ASC productivity measurement, expenditure on different inputs is adjusted for cost inflation using specific deflators appropriate to each element of inputs. A similar approach to deflation is taken for both the UK and England productivity measures.

Table 1 illustrates the deflators used and the components of expenditure that they deflate. Estimates for the proportion of ASC expenditure that is made up by LA labour and LA capital consumption are taken from the national accounts. Goods and services inputs are split between several deflators and estimates for the proportion of goods and services inputs relevant to each deflator are made using data from the national accounts, LaingBuisson, the UK Home Care Association and Ministry of Housing, Communities and Local Government. Capital consumption is measured in volume terms using national accounts data and so does not need to be separately deflated to incorporate it in the inputs.

Table 1: Input deflators

Deflator element	Input element deflator applied to	Deflator produced by	Source of price data	Source of expenditure weights
Labour (local authority)	Local authority labour	Department of Health and Social Care (DHSC)	Financial year ending (FYE) 2014 onwards: SfC NMDS-SC/ Before FYE 2014: ASHE	Skills for Care (SfC) National Minimum Dataset for Social Care (NMDS-SC)
Labour (independent sector)	Estimated proportion of goods and services	DHSC	FYE 2014 onwards: SfC NMDS-SC/ Before FYE 2014: ASHE	SfC NMDS-SC
Intermediate consumption (local authority)	Estimated proportion of goods and services	Office for National Statistics (ONS)	Subcomponents of: CPI, SPPI, PPI, RPI, AWE	MHCLG SAR, part of LA Revenue Expenditure and Financing collection
Intermediate consumption (independent sector residential and nursing care)	Estimated proportion of goods and services	ONS	DHSC pay deflator, Subcomponents of the CPI and SPPI	LaingBuisson's Care Cost Benchmarks
Intermediate consumption (independent sector home care)	Estimated proportion of goods and services	ONS	DHSC pay deflator, Subcomponents of the CPI, SPPI and PPI	UKHCA's Cost of Home Care report
Direct payments	Estimated proportion of goods and services	ONS	CPI and its subcomponents	Data collected from LA's by ONS/ LondonADASS Improvement Programme

Notes

1. DHSC: Department of Health and Social Care. [Back to table](#)
2. SfC: Skills for Care.,NMDS-SC: National Minimum Dataset for Social Care.,ASHE: Annual Survey of Hours and Earnings.,ONS: Office for National Statistics.,CPI: Consumer Price Index.,SPPI: Services Producer Price Index.,PPI: Producer Price Index.,RPI: Retail Price Index.,AWE: Average Weekly Earnings.,MHCLG: Ministry of Housing, Communities and Local Government.,SAR: Subjective Analysis Return.,UKHCA: UK Home Care Association.,ADASS: Association of Directors of Adult Social Services. [Back to table](#)

The following section goes into more detail on the use of deflators in the inputs calculations.

Labour deflators

Labour costs are deflated using the Personal Social Services (PSS) pay indices developed by the Department of Health and Social Care (DHSC). These use workforce data from the Skills for Care [National Minimum Dataset for Social Care \(NMDS-SC\)](#) for the proportion of social care workers in different occupation groups and from FYE 2014, the change in pay for each group. Prior to FYE 2014, data for changes in pay are derived from the [Annual Survey of Hours and Earnings \(ASHE\)](#).

To produce the labour deflators, changes in the pay levels of different categories of ASC employees are weighted by the proportion of the total staff pay bill they account for, to calculate the overall change in the cost of ASC labour inputs. Separate deflators are produced for local authority and independent sector labour inputs and each of these is applied to a corresponding component of expenditure. For the years before FYE 2014, the differences are due to differences in the mix of staff groups between local authority and independent sector, but for the years after FYE 2014, the NMDS-SC dataset enables the use of separate estimates of pay change for each sector.

The incorporation of pay data from the NMDS-SC reflects a development incorporated since the publication of [Measuring adult social care productivity in the UK and England, 2016](#), which used only ASHE for pay data.

Intermediate consumption deflators for LA-own provided services

Intermediate consumption covers the goods and services purchased as inputs in the provision of ASC services. Deflators for intermediate consumption are produced by using disaggregated expenditure data to construct a “basket” of types of goods and services purchased to produce ASC services. Items in the “basket” are then deflated using suitable inflation indices for the goods and services input components.

For LA-own provided services, a specific basket of input goods and services is produced using data from the [Subjective Analysis Return \(SAR\)](#), a data collection that provides an analysis of LA inputs expenditure by service, including social care. These data are an extension of the subjective analysis in the [Local Authority General Fund Revenue Account Outturn](#).

Different intermediate consumption items recorded in the SAR are deflated by suitable subcomponent indices of the Consumer Prices Index (CPI), [Services Producer Price Index \(SPPI\)](#), [Producer Price Index \(PPI\)](#) and [Average Weekly Earnings \(AWE\)](#), which is used in the case of agency staff). A composite deflator is then created by weighting each of these series together by the proportion of local authorities’ social care intermediate consumption expenditure they account for in the SAR⁴.

Intermediate consumption deflators for independent sector-provided care

Intermediate consumption of goods and services made up approximately 32% of independent sector ASC inputs in FYE 2017, with the remaining 68% relating to labour costs.

These relative spending shares and the basket of goods and services for independent sector-provided intermediate consumption are derived from FYE 2017 data for LaingBuisson’s [Care Cost Benchmarks](#) series and the UK Home Care Association’s [Minimum Price for Homecare](#) series.

Using the same approach as the deflator for intermediate consumption for LA-provided services, a basket of goods has been created from these two publications and each element deflated by an appropriate CPI, SPPI or PPI deflator to create a deflator for independent sector intermediate consumption. The relative weights given to the Care Cost Benchmarks and Minimum Price for Homecare data in the deflator are determined by the relative expenditure on residential and nursing care and home care reported in the data from NHS Digital.

While there is a degree of commonality between the three intermediate consumption deflators, each comprises a different basket. For example, in FYE 2017, the largest item for the intermediate consumption basket for local authority own-provided services was agency staff; the largest item for independent sector residential and nursing care basket was repairs, alterations and maintenance of buildings; and the largest item for independent sector home care was travel costs.

Direct payments

Direct payments involve LAs providing funding to care clients to enable them to arrange and pay for the care themselves, instead of the LA commissioning the care for them.

To produce a deflator for direct payments, we conducted a small survey of LAs with the assistance of the London Association of Directors of Adult Social Services (ADASS) Improvement Programme, receiving responses from six councils. The results of the survey suggested that approximately 46% of direct payments spending was on home care, 35% on other care services (including day and respite care) and 19% was on other goods and services (including transport). Using these figures as weights, a composite deflator was constructed from the CPI subcomponents of home care and social protection, with general CPI used to deflate other goods and services.

Capital consumption

Capital consumption inputs are calculated in volume terms in the national accounts and these volume data are used as inputs. 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, but these are not specific to ASC. While this is not ideal, it is the most suitable of the options currently available. As capital consumption represents a small component of total ASC spending, the effect of using different capital deflators on the overall measure would be limited.

It should, however, be noted that the current measure of consumption of fixed capital for government services is due to be replaced with improved estimates, and we intend to incorporate the new measure, when available, in a future public service productivity publication.

Notes for: Input methodology

1. Also known as consumption of fixed capital, capital consumption covers the cost of depreciation of capital goods (items that are anticipated to be in use over several years and add to the stock of resources in the ASC system, such as buildings) over time.
2. Included in expenditure on both the inputs and output side are the NHS Digital lines for NHS income, income from joint arrangements and other income. This approach mirrors the approach taken by NHS Digital as part of their ASC unit costs analysis. It should be noted that the other income line also includes transfers between LAs to fund clients who are provided a care placement in another LA to their own. The NHS Digital data collection is set up such that each LA should record expenditure and activity data only for clients whose care they are responsible for, meaning expenditure and activity on each client receiving care from a different LA to the one responsible for funding them should only be recorded once. However, in some cases, LAs are unable to separate their own expenditure from expenditure by other LAs, resulting in some probable double counting, although the scale of this double counting is not known. More discussion of NHS transfers to LAs can be found in NHS Digital's [Adult Social Care Activity and Finance Report, England, financial year ending 2018](#).
3. For more information on chain-linking, see [Methodology notes: annual chain-linking \(PDF, 58KB\)](#).
4. The basket of goods derived from the SAR used to produce the LA intermediate consumption is modified from the original SAR basket to remove procurement of care from the independent sector, as the intermediate consumption of independent sector providers is deflated separately.

5 . Quantity output methodology

As with inputs, public service output is measured in quantity or volume terms. Two different methodologies are applied to measure quantity output depending on whether or not activity data are available.

Output – methodology and terminology

Where data on the number of activities undertaken in a public service are available, quantity output (also known as volume output) is measured using a cost-weighted activity index. This index is produced by calculating the growth rates of different adult social care (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. The Laspeyres approach is used to compile the index, which means activity growth for each activity type between two years is weighted by its unit cost from the earlier of the two years.

Where activity data are not available, output is measured through the “output-equals-inputs” approach, using the same deflated expenditure data as used to measure inputs.

Output measured through a cost-weighted activity index is also known as directly measured output, while output measured through the “output-equals-inputs” approach is also known as indirectly measured output.

The same output measures for England are used in both the England and UK ASC productivity measures. In the UK measure, England data are supplemented by a direct output measure produced from data provided by the Scottish Government for Scotland. Activity data for Wales and Northern Ireland are not available, and so output in these nations is assumed to grow at the same rate as the rest of the UK. Due to data limitations, the “output-equals-input” method is only applied to data from England.

Directly measured output

As with the expenditure data used in inputs, the data used to produce ASC outputs are taken from NHS Digital’s Adult Social Care Activity and Finance Report and its predecessors. This report provides analysis of expenditure, income and for some services, activity data by service type and client group.

Direct output measures are produced for services for which activity data are available. For the years from financial year ending (FYE) 2015 onwards, this primarily comprises residential and nursing care, which are analysed into separate activity types by client age group¹ and primary reason for needing care support². Short-term care is also directly measured from FYE 2015 onwards, although a change in the unit of activity from weeks to hours between FYE 2017 and FYE 2018, means short-term care must be measured on an “output-equals-inputs” basis between these two years.

Prior to FYE 2014, where a different data collection was in place, activity data for a wider range of activity types were available. More information on the change in data source between FYE 2014 and FYE 2015 can be found in [Measuring adult social care productivity in the UK and England: 2016](#).

Because the measures in this analysis are for public service output and productivity, activity data are scaled down to net off the proportion of service funding that comes from client contributions and to ensure that the output measure aligns with the inputs by only including publicly funded ASC activity. Likewise, the cost-weights are produced according to the same expenditure definition as the inputs and so include NHS income, where this is available after FYE 2005.

Indirectly measured output

Indirectly measured output sets the measure of output equal to that of inputs and is used where an absence of activity data prevents the calculation of directly measured output. This means that output is estimated to grow at the same rate as inputs for services without activity data. As a result, productivity growth for these services is assumed to be zero.

This treatment ensures the productivity measure is not affected by differences between output and input growth caused by a mismatch between the coverage of services included in inputs and the coverage of services included in output. However, inclusion of services through the “output-equals-input” method has a dampening effect on productivity, reducing the scale of productivity changes. To view the productivity trend without this dampening effect, the England productivity analysis includes a measure covering only the inputs and output of services measured on a directly measured basis.

Changes to output introduced in 2019

There are a number of developments to the measure for ASC output in England including:

- introduction of a new cost-weighted activity index for the new data source for England from FYE 2015 onwards
- improvements to the cost-weighting of activity for the years before FYE 2015, including the incorporation of NHS spending and merging the cost weights for local authority (LA) and independent sector provided residential care
- modification of activity data to better align with inputs and NHS Digital's unit costs analysis
- incorporation of “output-equals-inputs” elements of output, for services where data on the number of activities carried out is not available, including direct payments
- use of “output-equals-inputs” estimation for the output growth rate between FYE 2014 and FYE 2015 to bridge the gap between two NHS Digital data sources, resulting in a productivity growth of zero between these two years

The detail of these changes are discussed in more detail in [Measuring adult social care productivity in the UK and England: 2016](#). As a result of these changes, the measure of output used in this article differs from ASC output in the national accounts. However, we intend to incorporate the new activity data source and relevant methods changes in the national accounts in future.

One further change incorporated in the measure since the June 2018 Measuring adult social care productivity release is the disaggregation of activity and unit cost information for residential and nursing care for older adults by client primary support reason group for the years since FYE 2015. This brings the treatment of directly measured output for older adults into line with that for working age adults for the years from FYE 2015 onwards, although data availability prevents such a treatment for the years before FYE 2015.

Notes for: Quantity output methodology

1. Older adults are defined as aged 65 years or older and working age adults are defined as those aged under 65 years.
2. Primary support reason is the main reason clients require social care and is used by NHS Digital to group clients for statistical analysis in England. Prior to FYE 2015, the primary support reason categories were learning disability, physical disability and mental health needs, and were recorded for adults aged under 65 years only. From FYE 2015 onwards, the primary support reason categories for England were modified to provide more detail and were recorded for older and working age adults. The categories used since FYE 2015 are learning disability support, physical support, mental health support, support with memory and cognition and sensory support. Data for Scotland continue to be produced on the same basis as used in England prior to FYE 2015. Primary support reason is used to differentiate the weights of activities for different client groups to reflect differences in the cost of care. Primary support reason is used to differentiate the weight of residential and nursing care activity in England and Scotland for all years, and day care in England prior to FYE 2015 and Scotland for all years.

6 . Output quality adjustment

This article also introduces a new quality adjustment for adult social care (ASC) output.

Quality adjustments to public service output were a recommendation of the [Atkinson Review \(2005\) on the Measurement of Government Output and Productivity for the National Accounts \(PDF, 1.1MB\)](#), which stated:

“The output of the government sector should in principle be measured in a way that is adjusted for quality, taking account of the attributable incremental contribution of the service to the outcome.”

Quality adjustments are applied to output to counter the limitations of using cost-weights to value different types of activity in quantity output measures. For instance, while quantity output may be growing, the value of this growth, and therefore productivity, may be overstated if service quality is declining.

The ASC quality adjustment introduced here uses the concept of adjusted social care-related quality of life, which is established within the Adult Social Care Outcomes Framework (ASCOF), and data from the Adult Social Care Survey in England.

As no equivalent data source measuring care-related quality of life is available for the devolved administrations, the quality adjustment for ASC produced using data for England is applied to UK output, under the equivalent convention to current quality adjustments in other public service productivity sectors ¹.

The following section introduces the methodology for this adjustment and analyses its effect.

Data source and framework for quality adjustment

The [Adult Social Care Survey \(ASCS\)](#) is a sample survey of clients in local authority (LA) provided or arranged care in England conducted from financial year ending (FYE) 2011 onwards. The survey’s sample coverage includes clients whose care is partly- or wholly-funded by a LA, including those in receipt of direct payments, or clients in LA-organised care who are fully self-funding.

In FYE 2017, the survey interviewed around 73,000 clients out of a total eligible population of around 656,000 clients, with data from 58,000 respondents sufficiently detailed to be used in our quality adjustment.

Data collected by the ASCS include clients’ age, gender, type of care and funding, self-reported health status, activities that clients need support with, and the degree to which their needs are met.

Results from the ASCS are used to produce a range of service performance measures, which are published in the [Adult Social Care Outcomes Framework \(ASCOF\)](#)².

The objective of quality adjustment is to adjust output for the value of the service being provided. So, an ideal quality adjustment reflects the degree to which a service improves outcomes for service users. For adult social care services, a critical outcome is the improvement of clients’ quality of life, relative to how it would be in the absence of care services.

The quality adjustment used for ASC output is based on “measure 1J” of the ASCOF – adjusted social care-related quality of life. There are several stages to calculating this metric and separate methods are used for community care services and residential and nursing care services.

Firstly, data are taken from the ASCS on clients' responses to how well their needs are met (on a scale from no needs met to no unmet needs) across eight domains:

- control
- personal care
- food and nutrition
- accommodation
- safety
- social participation
- occupation
- dignity

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 users³.

Secondly, factors predominantly outside the influence of ASC services, but which affect the likelihood of needs being met, are controlled for. These factors include clients' age, health status, suitability of clients' home for meeting their needs and clients' ease of travelling around outside in their local environment. The quality adjustment is based on changes in social care-related quality of life over and above those expected based on changes in factors outside ASC services control. That is, changes that are assumed to be due to changes in ASC service quality.

This section now covers the separate methods implemented for producing this measure.

Quality adjustment for community care

While NHS Digital have published the "measure 1J" only from FYE 2017, data from the ASCS itself are available from FYE 2011 onwards. In addition, the "measure 1J" is not published for different client groups and does not include clients with learning disabilities.

To produce the quality adjustment for community care, we implemented the calculation of "measure 1J" on the ASCS. The figures produced for the quality adjustment will differ slightly from the published ASCOF figures but this approach has several advantages for use in a quality adjustment. Firstly, it enables the production of a time series from the start of the ASCS in FYE 2011.

Secondly, it enables the quality adjustment to be extended to learning disability clients, who make up a substantial proportion of service output weighted by spending. While the study used to derive the weights for the eight domains of care-related quality of life included a small subsample of learning disability clients, the results of this study have not been applied to the published "measure 1J" pending further work. However, learning disability clients continue to be covered by the ASCS and a separate "easy-read" questionnaire is provided for respondents with learning disabilities. To ensure the quality adjustment includes all client groups, adjusted social care-related quality of life is estimated for learning disability clients using the same preference weights for the eight domains of quality of life as are used for other clients.

Thirdly, the Office for National Statistics (ONS) calculation of “measure 1J” from the ASCS enables the production of separate quality adjustments for different client groups, with separate adjustments produced for older adults, working age adults with learning disabilities, who are identified through use of the “easy-read” questionnaire⁴, and working age adults with other needs. This improves the overall quality adjustment as the quality adjustments for each client group are specifically applied to the associated output for each client group. The separate quality adjustments also improve the precision of the productivity measures for the analysis by service type and client group.

The quality adjustments for each individual in the ASCS dataset are weighted to account for variation in survey completion rates by LA. The quality adjustment for community care is then calculated as the change in adjusted social care-related quality of life from one year to the next.

Quality adjustment for residential and nursing care

Because the weights for the domains of quality of life in “measure 1J” are produced using a survey of community care users and the adjustment applied to account for items outside the control of ASC services is specific to community care, a separate approach is taken to quality adjust residential and nursing care output.

The residential and nursing care quality adjustment draws on work conducted by Yang, Forder and Nizalova at the Personal Social Services Research Unit for [analysing residential and nursing care quality by region](#).

This quality adjustment uses a regression-based approach to measure the strength of association with care-related quality of life of a range of factors that are outside ASC providers’ control and so need to be controlled for to derive the change in quality of life attributable to the performance of ASC services. The factors used in the regression model are:

- gender
- ethnicity
- age
- self-reported health status, level of pain and level of anxiety
- the number of basic activities of daily living (ADLs) the client needs support with
- whether the client can deal with their finances and paperwork

The quality adjustment is calculated as the change in average social care-related quality of life minus the expected change in average social care-related quality of life based on the regression model. This ensures that, for instance, if care-related quality of life is shown as increasing, the change used in the quality adjustment only incorporates the change in care-related quality of life attributable to ASC services.

Application of the quality adjustment

The quality adjustment is produced separately for older adults, working age adults with learning disabilities (as identified by the “easy-read” questionnaire) and other working age adults for each of residential and nursing care, and community care, providing six components for the quality adjustment. To produce the quality adjustment applied to output, these components are weighted together using the same measure of public expenditure as used in the inputs and output. The rate of change in the aggregate quality adjustment for each year is then applied to the corresponding year of the output index to obtain quality adjusted output.

As each of these components is calculated separately, separate quality adjustments are available for residential and nursing care and community care, and by client age group.

Notes for: Output quality adjustment

1. It should be noted that we intend to review the current approach to the geographical application of quality adjustment across all quality adjusted sectors and future changes could result in quality adjustments only being applied to output from the same constituent nations as the quality adjustment data is obtained from.
2. Further information on how measures within ASCOF are constructed can be found in the [ASCOF](#).
3. For more information on how “measure 1J” is produced and the study used to derive the weights for the eight domains, see [Identifying the Impact of Adult Social Care \(IIASC\)](#).
4. It should be noted that not all clients with learning disabilities will have completed the “easy-read” questionnaire and not all clients aged under 65 years who complete the “easy-read” questionnaire will necessarily have learning disabilities. However, the survey guidance recommends all learning disability clients should complete the “easy-read questionnaire” and so in most cases, use of the “easy-read” questionnaire should separate the learning disability and non-learning disability clients in the working age group.

7 . Summary of similarities and differences between UK and England measures

Similarities between UK and England measures:

- both use similar methods used to deflate inputs
- the capital consumption measure is based on UK national accounts data in both measures
- the output measure for England is used in the UK measure, although the UK measure also includes data from Scotland
- the quality adjustment is based on England data in both the England and UK measure

Differences between UK and England measures:

- the expenditure data in the England measure are derived from NHS Digital as opposed to the UK inputs, which use national accounts data
- the UK measure includes output data for Scotland and inputs data for Scotland and Wales, alongside output and inputs data for England, with output and inputs for nations where data are missing assumed to grow in line with the rest of the UK
- the England measure is produced on a financial year basis and the UK measure on a calendar year basis, with cubic splining used to convert data from a financial year to calendar year basis where necessary