

# Methodology for estimating the size and characteristics of the adult social care workforce in England

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# Acknowledgements

This paper was compiled by Will Fenton, Gary Polzin, Marion Holloway, Anna O’Gara and Natalie Fleming of our Workforce Intelligence team at Skills for Care.

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Feedback on any aspect of the methodology is welcomed and will improve future updated editions. Please contact our Workforce Intelligence team: [analysis@skillsforcare.org.uk](mailto:analysis@skillsforcare.org.uk)

Methodology for estimating the size and characteristics of the adult social care workforce in England

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# Abstract

Adult social care in England provides care and support for adults with disabilities, illnesses, or old age to live more comfortable and independent lives. This can include a range of support services, advice, and equipment with the aim of enabling independent daily living. Adult social care in England is made up of a patchwork of public, private, and voluntary individuals, establishments, and organisations.

Skills for Care is the leading source of adult social care workforce intelligence in England. We provide practical tools and support to help adult social care organisations recruit, retain, develop, and lead their workforce.

We're commissioned by the Department of Health and Social Care (DHSC) to collect data on adult social care establishments and their workforce via the Adult Social Care Workforce Data Set (ASC-WDS, previously named National Minimum Data Set for Social Care). For over 15 years we've turned this data into intelligence and insight that's relied upon by the government and across the adult social care sector in England.

Skills for Care's workforce intelligence reports provide detailed estimates of the size and characteristics of adult social care in England and the workforce that drives it. We publish a range of written reports and data visualisations which are broken down by geographies (currently national, regional, Integrated Care Boards (ICBs) and local authority areas) as well as at a national level on key topics, such as workforce nationality, registered nurses, and apprenticeships. These reports are available via our [website](#). We also provide monthly updates on key variables via our [monthly tracking](#).

Our workforce intelligence is aimed at national and local decision makers, academics, policymakers and think tanks who are interested in the adult social care workforce in England.

The methods we use to generate our estimates are shaped by the challenges of collecting the data. This report begins by outlining the challenges in the introduction, then details the methods we use for different parts of the adult social care workforce to address these. It also explores how these challenges affect data quality and how we are continuously working to update and improve our processes.

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# Contents

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<b>Glossary</b> .....	<b>7</b>
<b>Introduction</b> .....	<b>12</b>
<b>Adult social care in England</b> .....	<b>12</b>
Geographies .....	12
Regulation of personal care services.....	12
The structure of adult social care in England .....	13
Service types .....	14
Social care organisations and establishments .....	15
<b>Measuring the adult social care workforce in England</b> .....	<b>17</b>
Our definitions of the adult social care sector and workforce.....	17
Challenges of measuring the adult social care workforce in England .....	17
<b>Overview of methods</b> .....	<b>18</b>
Main stages .....	18
Our weighted estimates .....	19
Different methods for each sector .....	19
The ASC-WDS.....	19
Data quality.....	20
<b>1 Estimating the size of the adult social care workforce</b> .....	<b>22</b>
<b>1.1 The local authority sector</b> .....	<b>22</b>
1.1.1 Definition of sector .....	22
1.1.2 Inclusions and exclusions .....	22
1.1.3 Time period.....	22
1.1.4 Data sources.....	22
1.1.5 Data checking .....	23
1.1.6 Method steps .....	23
1.1.7 Coverage .....	25
1.1.8 Strengths and limitations.....	25
<b>1.2 The independent sector: CQC-regulated</b> .....	<b>27</b>
1.2.1 Definition of sector.....	27
1.2.2 Inclusions and exclusions .....	27
1.2.3 Data sources .....	27

1.2.4	Time period.....	28
1.2.5	Method steps .....	28
1.2.6	Coverage .....	32
1.2.7	Strengths and limitations .....	33
<b>1.3</b>	<b>The independent sector: non-CQC regulated .....</b>	<b>35</b>
1.3.1	Definition of sector.....	35
1.3.2	Inclusions and exclusions .....	35
1.3.3	Data sources .....	35
1.3.4	Time period.....	35
1.3.5	Method steps .....	36
1.3.6	Coverage.....	39
1.3.7	Strengths and limitations .....	39
<b>1.4</b>	<b>Individuals employing their own staff (personal assistants).....</b>	<b>40</b>
1.4.1	Definition of sector.....	40
1.4.2	Inclusions and exclusions .....	40
1.4.3	Data sources .....	40
1.4.4	Time period.....	41
1.4.5	Method steps .....	41
1.4.6	Coverage.....	43
1.4.7	Strengths and limitations .....	43
<b>1.5</b>	<b>The NHS sector .....</b>	<b>45</b>
1.5.1	Definition of sector Inclusions and exclusions .....	45
1.5.2	Inclusions and exclusions .....	45
1.5.3	Data sources .....	45
1.5.4	Time period.....	45
1.5.5	Method steps .....	45
1.5.6	Strengths and limitations .....	46
<b>2</b>	<b>Estimating the characteristics of the adult social care workforce .....</b>	<b>48</b>
<b>2.1</b>	<b>Background.....</b>	<b>48</b>
<b>2.2</b>	<b>Inclusions and exclusions .....</b>	<b>49</b>
<b>2.3</b>	<b>Data sources .....</b>	<b>49</b>
2.3.1	Data checking .....	49
<b>2.4</b>	<b>Time periods .....</b>	<b>50</b>
<b>2.5</b>	<b>Method steps.....</b>	<b>50</b>

2.5.1	Local authority and independent sectors .....	50
2.5.2	Direct payments sector .....	58
<b>2.6</b>	<b>Analysing the data .....</b>	<b>58</b>
<b>2.7</b>	<b>Coverage .....</b>	<b>59</b>
2.7.1	Local authority and independent sectors .....	59
2.7.2	Direct payments sector .....	60
2.7.3	Completion rates and filtering .....	60
<b>3.</b>	<b>Exploring the quality of our adult social care estimates .....</b>	<b>63</b>
<b>3.1</b>	<b>Data quality .....</b>	<b>63</b>
3.1.1	Introduction .....	63
3.1.2	Coverage .....	63
3.1.3	Response rates .....	64
3.1.4	Filtering .....	66
3.1.5	Measuring error .....	66
3.1.6	Sampling error at different levels of coverage .....	66
3.1.7	Rounding and suppression .....	67
3.1.8	Strengths and limitations .....	68
3.1.9	Summary .....	68
<b>3.2</b>	<b>Future developments .....</b>	<b>70</b>
3.2.1	Automated data checking .....	70
3.2.2	Checking independent sector data .....	70
3.2.3	Data engineering pipeline .....	70
	<b>Conclusion .....</b>	<b>72</b>
	<b>Further resources .....</b>	<b>74</b>
	Our workforce intelligence publications .....	74
	<b>Appendices .....</b>	<b>76</b>
	Appendix A: Data collected through the ASC-WDS service .....	76
	Appendix B: Regression models for estimating filled posts in the independent CQC-regulated sector .....	77
	Appendix C: Regression models for estimating filled posts in the independent CQC-regulated sector .....	79
	Appendix D: Timeline of data sources .....	81
	Appendix E: Potential sources of bias .....	82

# Glossary

**ASC-WDS** – the Adult Social Care Workforce Dataset. This is the service managed by Skills for Care to collect adult social care data and support social care employers with managing their staff records. It was launched in 2019, previously it was called the National Minimum Dataset for Social Care (NMDS-SC) which ran from 2006.

**Bulk upload** – a method for submitting data to ASC-WDS that involves uploading a large, structured csv file instead of adding data manually for each workplace and/ or worker.

**Care Certificate** – an agreed set of standards that define the knowledge, skills and behaviours expected of specific job roles in the health and social care sectors. Further information can be found on our [website](#).

**Care home** – a residential establishment that provides both housing and care services to its residents. This includes care homes with and without nursing.

**Care home with nursing** – care homes that provide nursing services regulated by the CQC.

**Care only home** – care homes that do not provide nursing services regulated by the CQC.

**Care Quality Commission (CQC)** – the independent regulator for social care in England.

**Community outreach** – a non-residential adult social care service which provides support in the community.

**Completion rate** – the proportion of establishments (or individuals in the direct payments sector) which have provided a response to a particular question.

**Coverage** – the proportion of establishments (or individuals in the direct payments sector) which have provided some data to us.

**CQC-regulated services** – a grouping of services which are regulated by the CQC because they provide some form of personal care.

**Day care** – a non-residential adult social care service which provides social activities for adults during the daytime.

**Direct payments** – payments from the local authority that allow people to purchase care services that work for them. These payments are often used to directly employ personal assistants.

**Domiciliary** – adult social care and support provided in a person's home which might include personal care, or support with domestic tasks such as shopping, cleaning, and gardening.

**Dormancy** – adult social care establishments that are not currently providing care services. Establishments could be dormant for several reasons, for example a care home might need renovations to the site.

**Employees** – people directly employed by an establishment on a permanent or temporary basis.

**Filled posts** – the number of non-vacant posts. A person may have more than one job, therefore the number of filled posts can be higher than the number of people working in the sector.

**Full-time equivalent (FTE)** – the equivalent rate if a worker was working 37 hours per week.

**Inactive accounts** – accounts that have not been updated in 2 years.

**Non-CQC regulated services** – a grouping of services not regulated by the CQC which includes day care centres, community outreach services and domiciliary services which do not provide personal care but may provide services such as cooking or cleaning amongst others.

**Non/Care-providing roles** – organisations assign their staff by their main role and responsibilities when they add them to the ASC-WDS. The job roles are categorised as either care-providing (e.g. care workers) or non-care providing (e.g. care-coordinators).

**Non-residential** – a grouping of CQC-regulated services which includes domiciliary care, extra care housing and supported living services.

**People** – the number of people working in the sector (1 person can fill multiple posts).

**Personal assistant** – directly employed staff who support individuals in their own home or to go out in the community, the majority of which are funded through direct payments from the local authority<sup>1</sup>.

**Sector** – categories of social care establishments. We split social care into four sectors, based on who directly provides the care. These sectors are local authority, independent (i.e. private and voluntary establishments), NHS, and direct payments (i.e. personal assistants employed by individual employers).

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<sup>1</sup> <https://www.nhs.uk/conditions/social-care-and-support-guide/money-work-and-benefits/personal-budgets/>



**Shared Lives** – a scheme in which people can live with or spend periods of time with a family who provide their care and support. This can be long term care or respite care and may or may not include providing accommodation.

**Source of recruitment** – the occupational group a person was previously employed in before they started their current job role.

**Total posts** – all posts, including posts currently filled by a person (filled posts) and posts that are currently being advertised for (vacant posts).

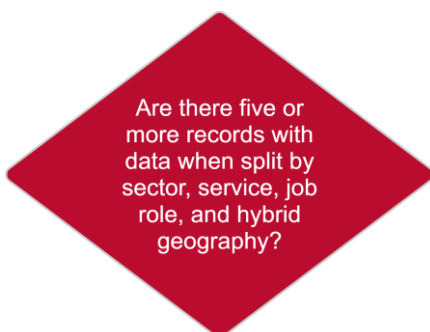
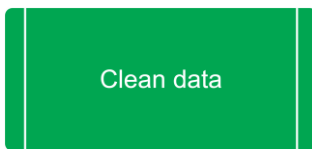
**Workers** – the number of people working for an establishment. This includes employees and indirectly employed workers (e.g., bank staff).

**Workforce characteristics** – Skills for Care's estimates of other variables in adult social care. This is the second stage in creating our estimates, after filled posts.

**Workforce estimates** – Skills for Care's estimates of filled posts in adult social care. This is the first stage in creating our estimates.

# Key for flow diagrams

## Shape



## Meaning

Skills for Care database

External database

Process with sub-steps

Process

Data

Decision

# Introduction

# Introduction

## Adult social care in England

Social care provides care and support for people with disabilities, illnesses, or old age to live more comfortable and independent lives. This can include a range of support services, advice, and equipment with the aim of enabling independent daily living. Adult social care provides services for anyone aged 18 or over, whereas children's services are for under 18s. Our workforce intelligence only provides estimates for adult social care. Adult social care is a devolved across the UK, meaning that each nation applies a different system. Our workforce intelligence only provides estimates for England.

This introduction will describe features of adult social care in England which affect how we estimate the workforce size and characteristics. It will also cover who we are and our aims in creating our estimates. Finally, we will provide a high-level overview of the methods we use.

It should be noted that all figures and dates referenced in this report are for illustrative purposes only. Geographies, coverage and data will vary over time.

## Geographies

Adult social care in England is currently arranged into 152 local authority areas which sit within nine geographical regions. As local authority boundaries change, split, or combine, the number of local authority areas and their regions change over time.

Since the recent decision in England to begin to integrate health and social care services, health geographies have also become relevant to social care provision. These are called Integrated Care Boards (ICBs) and sub-Integrated Care Boards (sub ICBs). There are currently 42 ICBs in England. As with local authority area boundaries, the structure and boundaries of health geographies have changed over time.

It should be noted that many local authority areas straddle ICB boundaries and vice-versa. This means that the local authority areas do not nest within ICBs, and only nest within regions.

## Regulation of personal care services

Although there is no central record keeping service for adult social care in England, any service that provides personal care (i.e., supporting people with activities such as washing, dressing, or going to the toilet) must be registered with the Care Quality Commission (CQC). About 75% of adult social care filled posts are with CQC-regulated employers (see Chart 1). The CQC is the independent regulator for social care in England and compiles the [Care Directory](#): a register of all the adult social care establishments they regulate. Some social care services which do not provide personal care (for example, day care centres, community outreach services and

domiciliary services which do not provide personal care but may provide services such as cooking or cleaning) are not regulated by the CQC. Additionally, personal assistants may provide personal care services but as they are directly employed by individual employers with care and support needs, they are not CQC-regulated.

## The structure of adult social care in England

Unlike for healthcare, there is no overarching body like the NHS for social care in England. This results in many small public, private, and voluntary organisations providing a “patchwork” of services across the country. It also means that there is no central record keeping service and no definitive list of services or providers.

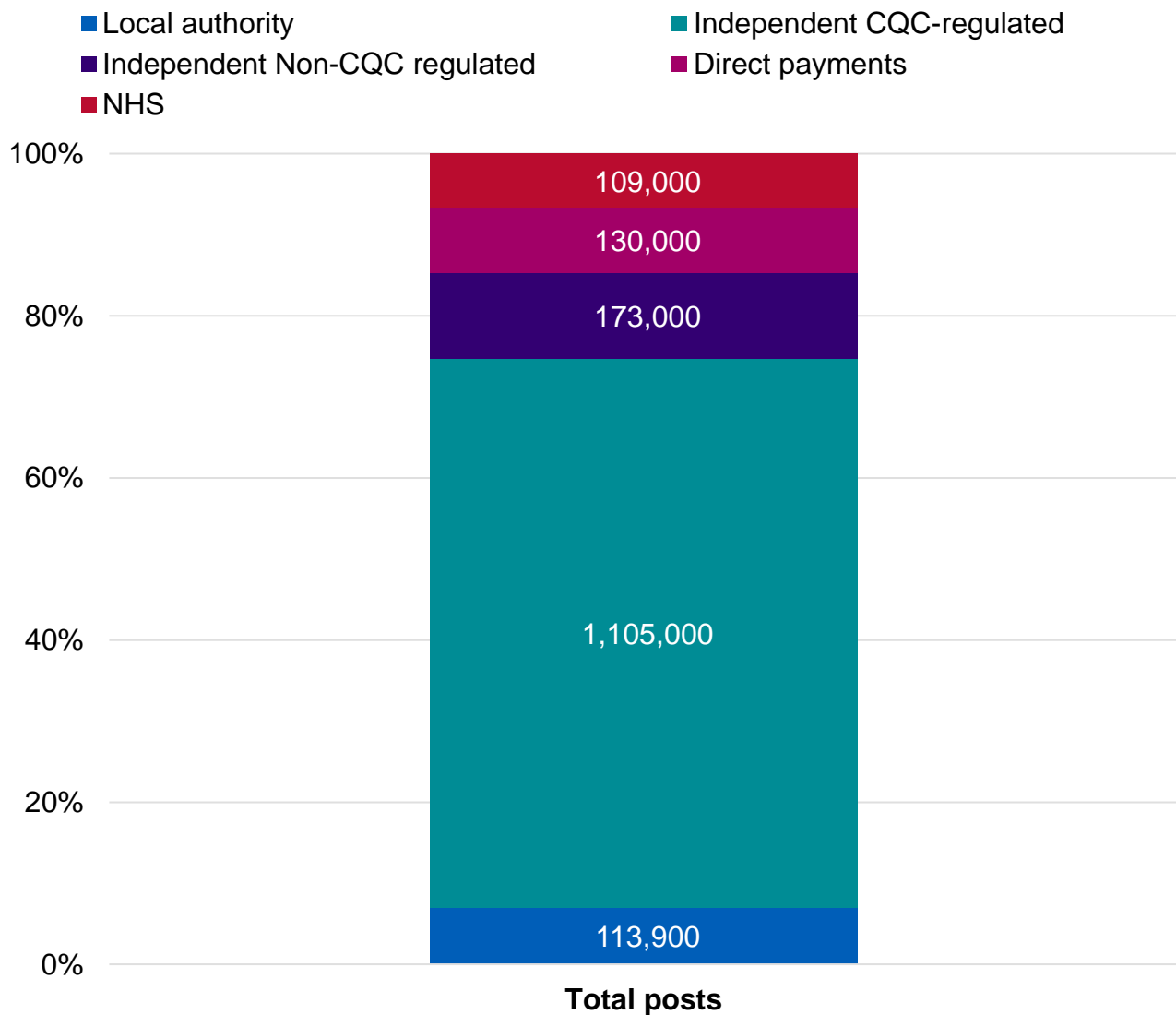
For the purposes of our analysis, we split adult social care in England into four main sectors.

- The “Local Authority” sector covers public sector services provided by the local authorities in England.
- The “Independent” sector covers all private and voluntary organisations providing adult social care, including Shared Lives services.
- The “Direct Payments” sector covers all the individual employers of personal assistants.
- Finally, the “NHS” sector covers social care roles in the NHS.

The size of the different sectors is shown in Chart 1 (below). For more details on how we define these sectors, please see the relevant chapter.

**Chart 1. Adult social care employer types by workforce size, 2022/23**

Source: Skills for Care estimates

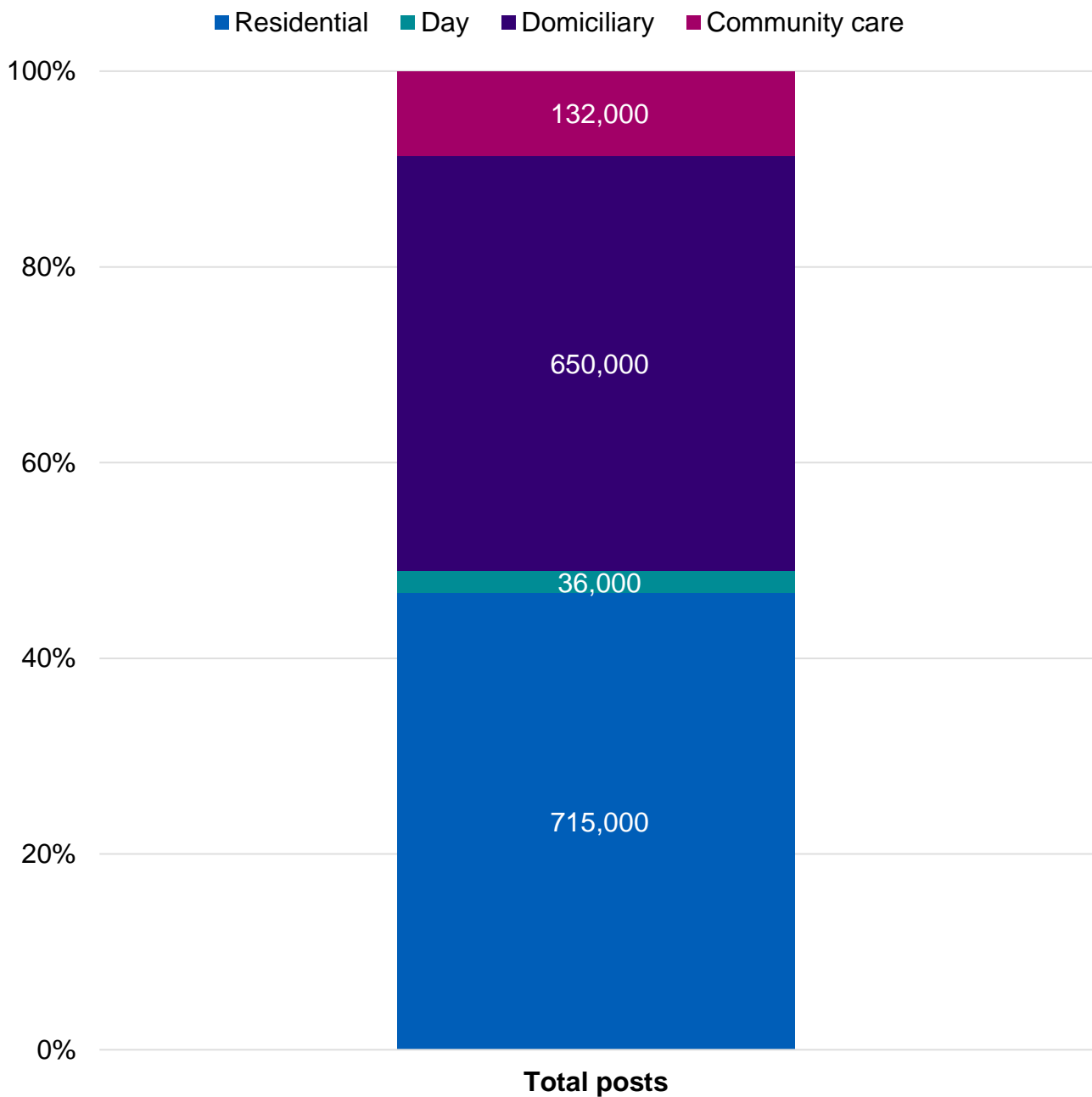


## Service types

As mentioned above, adult social care comprises a wide range of services that support people in their daily lives. These include residential services, such as care homes (which may include nursing); domiciliary care, which support people to live independently at home; day services, which provide social activities during the daytime; or community services. The workforce required to provide these different services can vary considerably. The size of these service types is shown in Chart 2 (below).

## Chart 2. Adult social care main service types by workforce size in the local authority and independent sectors only

Source: Skills for Care estimates 2022/23



## Social care organisations and establishments

Adult social care in England comprises of a range of employer structures. These range from large organisations with multiple locations employing thousands of workers, to micro employers (not linked to a wider organisation) employing less than 10 workers. Because of this, it is important to make a clear distinction between adult social care organisations and establishments.

Organisations are business structures, which may be made up of one or more establishments. Establishments are buildings where social care provision takes place or is organised. Consider, for example, a chain of care homes. The chain of care homes would be seen as the organisation and each of the physical care homes within that chain would be an establishment. Alternatively, a domiciliary care service (organisation) might have one or more office buildings (establishments) with different staff based at each office. Understanding the difference between organisations and establishments helps in understanding the complex structure of adult social care in England.

**Figure 1. Filled posts, people, and employers in adult social care, 2022/23**

Source: Skills for Care estimates 2022/23

In adult social care in 2022/23 there were

an estimated  
**1.635m filled posts**

equivalent to an estimated  
**1.52m people**  
working in these posts



working for  
**18,000 organisations**

at  
**39,000 establishments**



and there were  
**69,000 individuals**  
**employing their own staff**  
using direct payments





# Measuring the adult social care workforce in England

## Our definitions of the adult social care sector and workforce

For the purposes of our analysis, we define the adult social care sector as those organisations whose primary purpose is to provide direct care and/ or support for adults in their everyday lives. The adult social care workforce is defined as all the people paid to work within those organisations, including those indirectly employed (such as agency staff) and those in non-care providing roles (such as managers).

Our definition does not cover organisations which have a social care focus but have no direct contact with end users. This could include consultancies, fundraisers, or equipment manufacturers. Informal carers (i.e., people who provide unpaid care to family and/or friends) are crucial in supporting people with long-term conditions. However, they are not included as part of our workforce estimates as they are not paid workers.

## Challenges of measuring the adult social care workforce in England

Our workforce intelligence reports and data visualisations aim to provide reliable, evidence-based estimates of the current state of the adult social care workforce in England. This information is not available anywhere else and is crucial for workforce planning and development, funding, and improving the sector for staff and service users alike.

As there is no central record keeping service for adult social care in England, there are significant challenges when estimating the size and characteristics of the workforce.

- The changing landscape of administrative geographies and the integration of health and social care creates challenges, as one establishment may “move” between geographies over several years despite the building being in the same physical location. This makes it harder to draw comparisons over time, as estimates need to be recalculated when boundaries shift.<sup>2</sup>
- We know more about some parts of adult social care than others. Whilst the CQC collects a definitive list of establishments providing personal care services, non-regulated social care services are essentially just businesses or charities. Individual employers are not registered, which makes them difficult to identify and contact for data collection.
- Adult social care is under huge strains and many establishments have little time and few resources to provide detailed data about their workforce. Similarly, individual employers who have care and support needs may not have the time and resources to complete detailed surveys. Furthermore, some establishments may provide more detailed or more

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<sup>2</sup> All filled posts for domiciliary care are estimated as if they were in the geographical location of the registered address of the workplace. In reality, the staff might be working across multiple local authority areas.

accurate information on some variables than others. As a result, we do not achieve 100% coverage of the sector, so some estimating is required<sup>34</sup>.

- Finally, our data is primarily collected by employers rather than employees, which means that some variables, such as those about demographics, may not be known by the employer.

## Overview of methods

We use a comprehensive series of steps to create our adult social care estimates. Our methods have been peer reviewed and will be outlined in more detail throughout this paper. This section is intended to give a high-level overview of our process before we discuss it in more depth.

### Main stages

The patchwork nature of adult social care in England means that we don't know the exact number of organisations and establishments, or the size of the workforce. Therefore, before we can consider any of the characteristics of the adult social care workforce, we first need to estimate its size and composition. We do this by estimating the number of filled posts (non-vacant posts)<sup>5</sup>. Once we know the number of filled posts, we can weight the workforce characteristics (i.e., all other variables collected in ASC-WDS) using the filled posts estimates as the weighting structure. Our estimates of filled posts are published annually in the summer as part of our "Size and Structure" [publication](#). More detailed breakdowns of these estimates, along with estimates of workforce characteristics are published annually in the autumn in our "State of" [publication](#). A timeline overview of the collection, cutting, and publication of data sources used to generate our estimates can be found in Appendix D: Timeline of data sources.

In this paper, when we refer to estimating the size of the workforce, we are referring to our estimates of filled posts that we generate in the first stage. When we refer to workforce characteristics, we are referring to the other variables such as pay or gender, which we estimate in the second stage.

We generate estimates of the size of the workforce at local authority area level, ICB level, regional level, and national level, split by sector, service type, and job role. We generate estimates of workforce characteristics at the same geographical levels and split by sector, service type, and job role where possible. Some workforce characteristics at local authority area level, when split by sector, service type, and job role have few workers in the split. These figures are suppressed, meaning we do not show them (see section 3.1.7 for more details). This is to protect the details of individual workers and to reflect the uncertainty in the figures for uncommon splits.

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<sup>3</sup> Further information on how we calculate coverage is included in Section 1 – 'Estimating the size of the adult social care workforce'.

<sup>4</sup> Further information on how we estimate individual variables is included in Section 2 – 'Estimating the characteristics of the adult social care workforce'.

<sup>5</sup> A person may have more than one job, therefore the number of filled posts can be higher than the number of people working in the sector.

## Our weighted estimates

Our weighted estimates are split by sector, service, job role and geographies (region, ICB, and local authority area). We do not publish estimates at individual establishment level. This is because ASC-WDS users submit data for the purpose of reporting aggregate data in a non-identifiable way.

## Different methods for each sector

As the information we have about adult social care in England varies widely by sector, we estimate the size of the workforce using different methods for each sector. These methods are determined by the information available externally about the sector, and the amount of raw data we can collect ourselves for that sector. We also use two different methods within the independent sector: one for CQC-regulated services and one for non-CQC regulated services. This is because the CQC's Care Directory allows us to identify all CQC-regulated social care establishments, whereas there is no corresponding list for non-CQC regulated independent sector services.

This report is split into three parts.

- Part one describes our methods for creating estimates of the size of the adult social care workforce in England (filled posts). It is split by sector, and the independent sector is split into CQC-regulated and non-CQC regulated establishments (as these are estimated differently).
- Part two describes our methods for estimating the characteristics of the adult social care workforce in England. This includes other variables that we report on including starters, leavers, vacancies, gender, pay, sickness etc.
- Part three examines the quality of our estimates and describes our plans for improving our methods in the future.

## The ASC-WDS

We collect our raw data from the local authority and independent sectors using Skills for Care's purpose-built service: [the ASC-WDS](#). It is an online data collection service completed by adult social care providers. It collects data relating to establishments and workers including information on employment terms, recruitment, retention, demographics, pay, qualifications, and training. This raw data is then supplemented with external data sources to create our workforce estimates.

As well as a tool to submit data for our workforce intelligence reports, the ASC-WDS also provide [helpful services](#) to help care establishments run their business and manage their staff training needs including benchmarking tools and advice. It can also provide access to the [Workforce Development Fund](#), a valuable source of funding for staff training. It is available year-round and there is a support team in place to handle queries about the service. Establishments

can choose to bulk upload their data or use the website to manually submit their data. Bulk uploads are recommended for large establishments, local authorities, and independent sector employers with subsidiary workplaces. Codes, guidance, and training are available for establishments wishing to complete bulk uploads.

Workplaces with fewer than 50 members of staff are recommended to input their data manually through the website. The website is broken down into five tabs on a dashboard. Three of these tabs allow for providing data on the workplace, staff records, and training and qualifications. The other two tabs provide instructions and information on benefits, and benchmarking data.

Establishments can choose to update their data at any point throughout the year. Employers can update one or more fields at any point in time. The system tracks metadata, such as timestamps for when a data item was last updated. This allows for quality checking and purging inactive accounts from analyses. We download regular snapshots of the data in ASC-WDS for internal and external reporting.

Variables collected and their corresponding questions and coding are available in Appendix A: Data collected through the ASC-WDS service. This appendix also describes which variables are mandatory for particular user groups. Establishments select from a closed list of responses for most qualitative data points, although there is generally the option for an “other” response with a corresponding free text box. The list of options available for each question are included in Appendix A.

Data on the direct payments sector and NHS sector are not collected through the ASC-WDS service.

## Data quality

The challenges described above affect our methods for estimating the size and characteristics of the adult social care workforce. These challenges also affect the quality of the raw data that is available for each sector. We assess the quality of the data by considering its coverage (i.e., the proportion of establishments that provide any data to us) and completion rates of individual variables (i.e., the proportion of establishments that respond to a particular question). Both metrics vary by sector. For further information about data quality please see section 3.1 [Data quality](#).

# Estimating the size of the adult social care workforce

# 1 Estimating the size of the adult social care workforce

## 1.1 The local authority sector

### 1.1.1 Definition of sector

The local authority sector comprises all the adult social care services provided by each local authority in England.

### 1.1.2 Inclusions and exclusions

Any organisation or establishment which forms part of a local authority's adult social services department, regardless of its postcode, is included in our data. This is because the workforce in these services is funded by that local authority and its adult social care remit. Children's social services and adult social services in other devolved nations are not included in the data.

### 1.1.3 Time period

ASC-WDS data for the local authority sector are a snapshot of data held at the end of October each year. This allows for us to capture any late submissions from local authorities. We then use this snapshot for our "Size and Structure" [publication](#) in the summer and in our "State of" [publication](#) in the autumn.

The ONS Postcode Directory used is published in November each year.

### 1.1.4 Data sources

Local authorities are mandated via [The Single Data List](#) to complete the ASC-WDS once per year, around 30<sup>th</sup> September. Local authority reporting is mandatory, and submissions are quality checked before being accepted. Local authorities whose submissions don't meet the required standard will be asked to resubmit until they do. If there are any problems with local authorities submitting data, there is an escalation process in place.

We enhance our raw data with the [Postcode Directory](#) from the Office of National Statistics (ONS). The Postcode Directory links UK postcodes to geographical and administrative areas. We use it to add ICBs and other geographies to raw ASC-WDS data by looking up the postcode of the establishment.

## 1.1.5 Data checking

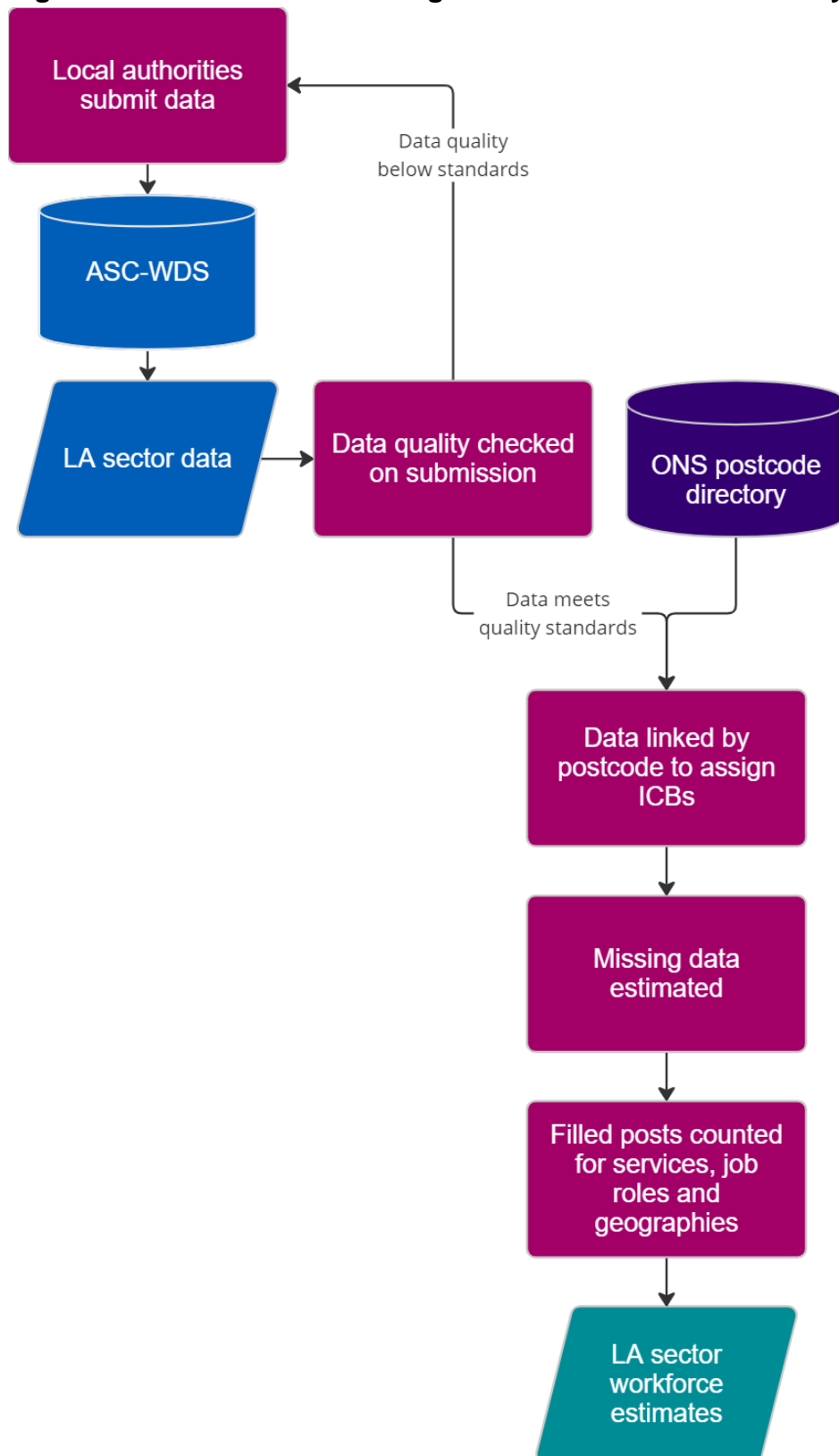
Local authority sector data from the ASC-WDS is checked on submission. We check that the change in total posts from the previous year is similar to the reported number of leavers and vacancies, minus the reported number of starters. If there is a discrepancy, we ask the local authority to explain why this is. Acceptable reasons include establishing a new service or closing an old service. We also check whether they have submitted the same number of worker records as their reported total number of staff. Data checks are also performed on all other variables that are part of the mandatory criteria.

## 1.1.6 Method steps

Local authority data in ASC-WDS is enriched with ICBs taken from the ONS Postcode directory and matched on postcode. Any local authorities that did not submit their filled posts data (despite the mandate) are then estimated using the rate of change for filled posts for all other local authorities combined, applied to the data for the missing local authority from the previous year.

Finally, we total the number of filled posts (reported and, if necessary, estimated) to create our estimates for the local authority sector. (Figure 2 below) gives an overview of this process.

**Figure 2. Process for estimating the size of the local authority workforce**



For the local authority sector, the local authority area is allocated based on the local authority who submitted the return, regardless of where the postcode or building is located. However, we join the ONS postcode directory with the postcode of the establishment to add in the appropriate ICBs.



Between 2012 and 2021 all local authorities in England met the criteria of a full ASC-WDS return for people working in adult social services departments and therefore no weighting was required. In 2022, one local authority did not complete a return. To estimate the number of filled posts for this local authority area, we split the data by service, job role and geographies and calculated the total percentage change in filled posts of all known local authority areas from 2021 to 2022 and applied this rate of change to the 2021 filled post figures for the missing local authority area.

Finally, we counted the filled posts (actual and estimated) for each local authority area to create the final estimates for the local authority sector. These workforce estimates are split by service, job role, and geographies (region, ICB and local authority area).

### 1.1.7 Coverage

Local authorities are required to complete an ASC-WDS return as it is on The Single Data List. This has been endorsed by OADB (Outcomes and Information Development Board) which is chaired by the Association of Directors of Adult Social Services (ADASS) and the Department of Health and Social Care. As might be expected, this leads to higher levels of coverage and higher completion rates on variables than for other, non-mandated sectors.

For example, in 2022, there were 152 local authority areas in England and 151 (99%) returned data, meaning there was 99% data coverage. This is the first time that coverage for the local authority has been below 100%, however, it is still a very high rate of coverage for this sector.

To estimate the size of the social care workforce, the following variables are required:

- Sector
- Service
- Filled posts
- Geography
- Job role

In 2022, there was a 100% completion rate<sup>6</sup> for all these variables across the local authorities who returned data. This provides us with a high level of accuracy and precision for our estimates of workforce size in the local authority sector.

### 1.1.8 Strengths and limitations

One of the major strengths of our local authority sector filled posts estimates is the high level of coverage. As local authorities are mandated to complete the ASC-WDS every September, we obtain a detailed snapshot of this sector's data each October. We can also be relatively confident that we haven't missed any services within each authority, and we check the data provided for errors and omissions on submission.

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<sup>6</sup> Completion rate is the proportion of respondents who provided data for a variable.

In terms of limitations, data is only collected once per year and therefore trends within the year cannot be identified. Also due to the timing of the collection window (September), the local authority data does not align with data about the rest of the workforce, which is cut at the end of March each year.

In terms of data quality, the information for each local authority area is provided by one user (as opposed to the independent sector where potentially hundreds of different users are all submitting information independently in each area). Therefore, if any data quality issues or inconsistencies cannot be detected by our data quality checks, they will affect the whole geographic area for the local authority sector. In comparison to the independent sector, where if an establishment has data quality issues, the impact is reduced because they are grouped with other establishments with accurate data.

## 1.2 The independent sector: CQC-regulated

### 1.2.1 Definition of sector

The independent sector comprises all private and voluntary adult social care services in England. For the purposes of creating our workforce estimates, we divide the independent sector into CQC-regulated and non-CQC regulated establishments. For example, day care centres, community outreach services and domiciliary services which do not provide personal care but may provide services such as cooking or cleaning would be non-CQC regulated establishments. All organisations providing personal care (i.e., supporting people with activities such as washing, dressing, or going to the toilet) are regulated by the CQC.

The CQC list these establishments in their Care Directory, which we use to create our estimates. Therefore, our definition of the CQC-regulated portion of the independent sector is all the private and voluntary adult social care services in England regulated by the CQC.

### 1.2.2 Inclusions and exclusions

Establishments which provide care for both adults and children are included at the data collection stage. For parent organisations (those which manage multiple locations or services) that also provide care services in other parts of the UK, only locations with an English postcode are included in our estimates. Independent sector Establishments who provide care for children only, or who are located outside of England, are not included.

### 1.2.3 Data sources

Data on all independent sector establishments are collected through the ASC-WDS service. Establishments can submit their data at any point during the year, and individual fields can be updated at any point. Reporting is not mandatory for independent establishments. Detailed data quality checks are carried out when large organisations make a submission and extensive data quality filtering is applied at the analysis stage.

We enhance our raw data with the CQC Care Directory and the Shared Lives Plus report.

The CQC Care Directory lists all the locations in England where the CQC regulates care services. We collect the CQC location ID in ASC-WDS for CQC-regulated establishments and we use this to join the datasets and identify CQC-regulated independent sector providers (see the methods section for more details).

The Shared Lives Plus [report](#) summarises the current state of Shared Lives schemes across the country. We use this data, unadjusted, to identify the number of filled posts and full-time

equivalent (FTE) filled posts by job role in the Shared Lives scheme. This is required because these services often use self-employed carers which are not captured by ASC-WDS.

## 1.2.4 Time period

ASC-WDS data for the CQC-regulated portion of the independent sector are a snapshot of data held at the end of March each year. Data is submitted through the financial year at different points. We use the trend throughout the year to estimate what older data would be if it were submitted in March, i.e. if filled posts had increased by 2% in the year, we would add on 2% for data that was 12 months old.

Using the end of March snapshot allows for us to capture data at the end of the financial year and before the increase of the national living wage in April. We then use this snapshot for our annual “Size and Structure” [publication](#) in the summer and in our “State of” [publication](#) in the autumn.

The CQC [Care Directory](#) is updated monthly. We use a snapshot of the most relevant Care Directory from the end of March to align with our snapshot of ASC-WDS data.

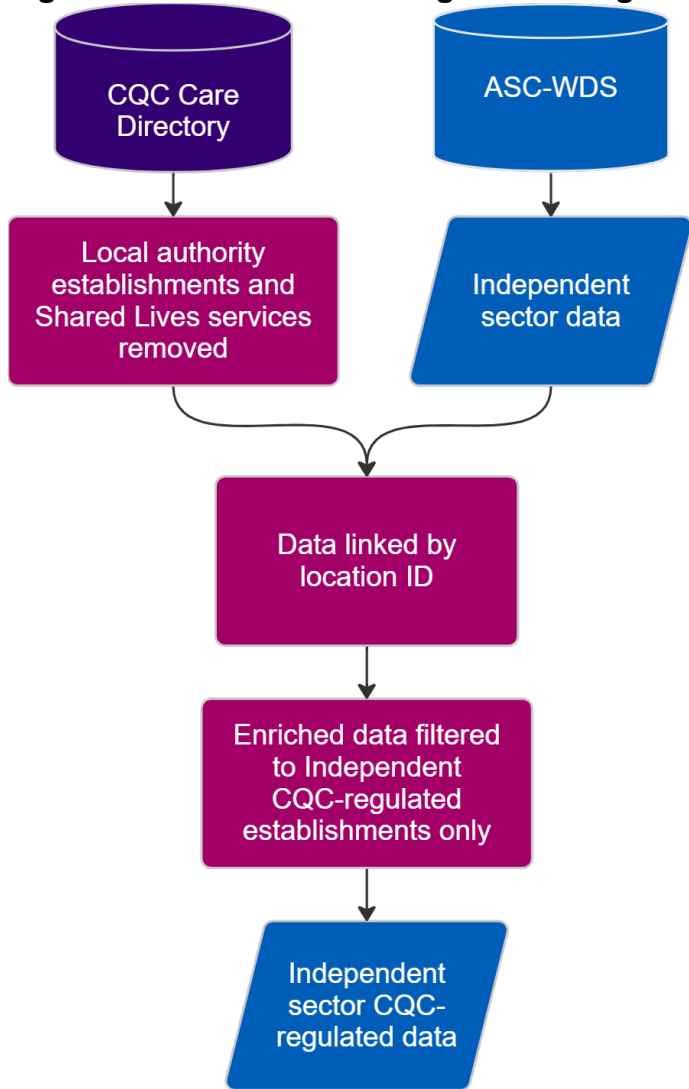
The Shared Lives Plus data is available towards the end of each calendar year for the previous financial year. This means, for example, that towards the end of 2022, figures for the 2021/22 financial year were available.

## 1.2.5 Method steps

The CQC Care Directory provides accurate and up to date information on numbers of regulated adult social care establishments, by type, geography, and capacity (for care homes). It is updated monthly. We collect the CQC location ID of CQC-regulated locations in ASC-WDS. These IDs can be matched with the CQC data to show the proportion of CQC-regulated establishments that the ASC-WDS covers.

The Care Directory does not contain information comparable to our definition of sectors (e.g., independent, or local authority). We manually remove local authority establishments using text matching from the CQC register using their ‘provider name’. Shared Lives locations are also removed using their service type and this part of the sector is estimated separately (see Figure 5. Process for estimating the Shared Lives workforce).

**Figure 3: Process for filtering to CQC-regulated independent establishments**



Residential establishments and non-residential establishments are estimated separately. We determine whether an establishment is residential or non-residential by the main service it provides. We determine the main service by applying hierarchical logic to the list of services the establishment provides in the CQC Care Directory. If the establishment offers multiple services, we use the highest one on our list to determine their main service group (see Table 1 below).

**Table 1. Main service recoding**

CQC Services (select highest matching value in list)	Main Service Group assigned
Shared Lives	CQC Other Residential
Care home service with nursing	CQC Care home with nursing
Care home service without nursing	CQC Care only home
Domiciliary care service Community health care services - Nurses Agency only Supported living service Extra Care housing services	CQC Non residential
Residential substance misuse treatment and/or rehabilitation service Hospice services Acute services with overnight beds	CQC Other Residential
All other CQC service categories	CQC Other non-res
Specialist college service	Excluded

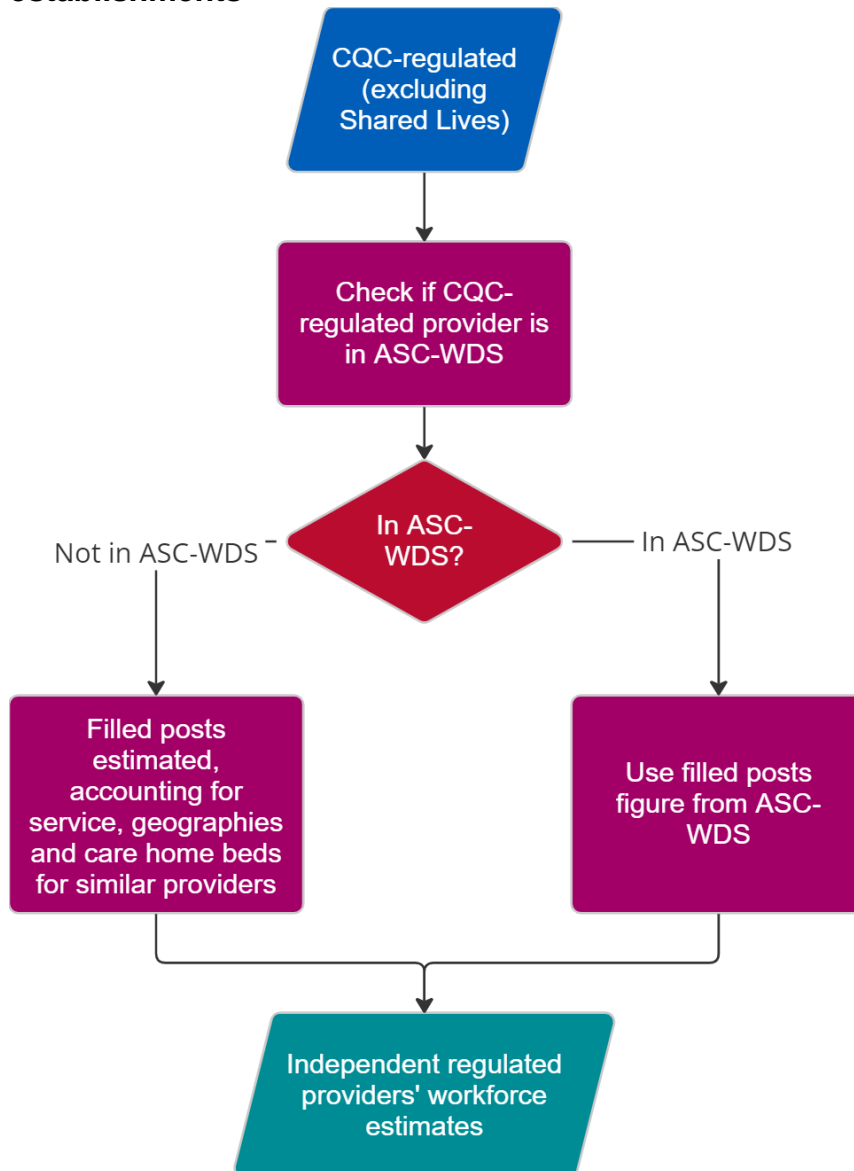
The numbers of care homes with nursing<sup>7</sup>, care homes without nursing<sup>8</sup>, and other CQC-regulated residential activities are taken directly from the CQC Care Directory. Shared Lives data are removed from these, as they are estimated separately. The remaining establishments comprise the residential segment.

For these residential establishments, where the CQC location ID can be matched to an establishment in ASC-WDS, the filled posts figures for those establishments in ASC-WDS are used (see Figure 4 below). For residential establishments which do not complete the ASC-WDS, we estimate their filled posts figure using regression models which account for ASC-WDS filled posts, region and care home beds, based on the data we hold for similar establishments. For more information, see '[Appendix B: Regression models for estimating filled posts in the independent CQC-regulated sector](#)'.

<sup>7</sup> A residential establishment that provides housing, care, and nursing services to its residents.

<sup>8</sup> A residential establishment that provides both housing and care services (but not nursing services) to its residents.

**Figure 4. Process for estimating the workforce at CQC-regulated independent establishments**



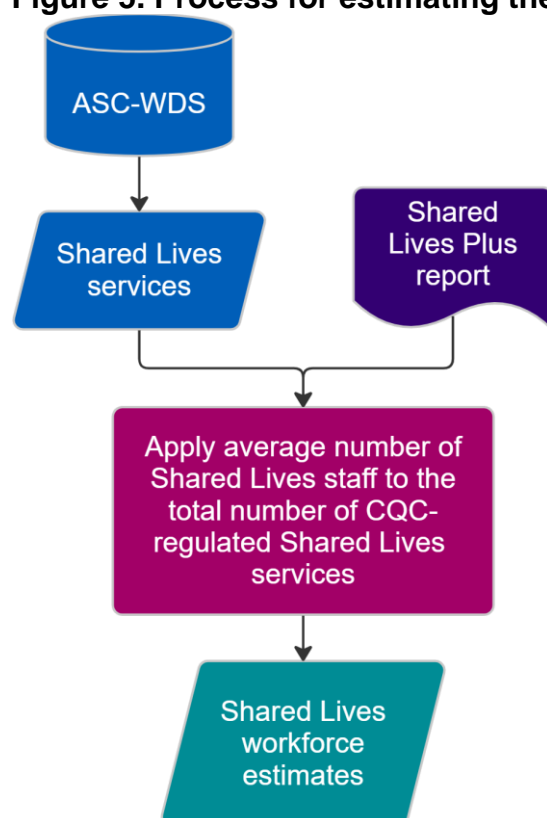
The numbers of domiciliary care services, nursing agencies, supported living services, extra care housing services and other CQC-regulated non-residential services are taken directly from the CQC register. These comprise the non-residential segment.

For these non-residential establishments, where the CQC location ID can be matched to an establishment in ASC-WDS the filled posts figures for those establishments in ASC-WDS are used (see Figure 4). For non-residential establishments which do not complete the ASC-WDS, we estimate their filled posts figure using a regression model which uses ASC-WDS filled posts, region, the count of CQC service user groups, the count of CQC activities, the count of CQC services, CQC registration date, and dormancy status, based on the data we hold for similar establishments. For more information, see [‘Appendix B: Regression models for estimating filled posts in the independent CQC-regulated sector’](#).

As of March 2022, the CQC began adding a [dormancy flag](#) into the Care Directory for non-residential establishments and we have now added dormancy as a field into our model. The CQC marks establishments as dormant when they exist as a business but are not currently providing services. This often (but not exclusively) applies to newly opened businesses who are looking for contracts. As the dormancy field did not exist previously, we have used the March 2022 ratio of the model outputs without dormancy against the model outputs with dormancy included at regional level and applied that to previous years, i.e. assuming that dormancy rates are consistent over time. For example, if region A overall was modelled at 100 without dormancy in the model and 95 with dormancy included, we multiplied estimates from previous years in that region by 0.95.

Estimates of the number of filled posts for Shared Lives services are made using a different method (see Figure 5). Shared Lives Plus publishes a comprehensive [report](#) on the Shared Lives workforce. The average number of self-employed carers and support staff from this report are applied to the total number of CQC-regulated Shared Lives services from the CQC list. This means that the same average is applied to each CQC-regulated Shared Lives service. This method is used because Shared Lives services often use self-employed carers which are not captured by ASC-WDS but do form part of the Shared Lives Plus report.

**Figure 5. Process for estimating the Shared Lives workforce**



## 1.2.6 Coverage

The regulated independent sector is the largest within adult social care in England, so having a large proportion of providers in this sector is vital for producing accurate estimates of the



workforce. Independent providers are not obliged to provide their data to the ASC-WDS though many offer this willingly for a variety of reasons, including access to the benefits such as the benchmarking tools on the ASC-WDS portal and use of the Workforce Development Fund. This means that the level of coverage is not as high as in the local authority sector, however we offer strong incentives and engage directly with providers to encourage participation.

We identify these providers and calculate ASC-WDS coverage by comparing CQC location IDs provided monthly by the CQC with the location IDs within the ASC-WDS. Coverage is tracked monthly and is one of our key performance indicators. The ASC-WDS covered 51.1% of all CQC-regulated independent sector establishments as at March 2023. Excluding dormant locations, this increases to 53.2% of establishments.

To estimate the size of the workforce, the following variables are required:

- Sector
- Service
- Filled posts
- Geography
- Job role

As at March 2023, the sector, service, geography, and job role variables had a 100% completion rate. Filled posts were recorded by 98% of CQC-regulated independent providers.

## 1.2.7 Strengths and limitations

One of the main strengths of our CQC-regulated independent sector estimates is that we know the exact number of establishments from the CQC Care Directory. For residential services, there is a strong correlation between care home beds and staff. We can therefore estimate the number of filled posts in residential services with a high degree of confidence. We retrain the model each year to account for any changes in staffing ratios over time. The figures can also be checked against external data sources and show a strong correlation (see [Appendix C: Regression models for estimating filled posts in the independent CQC-regulated sector](#)).

For non-residential services, the models are not as strong as for residential as 'beds' is not a measure (non-residential services are not bound by the size of the building). As such, at a row level (establishment level estimates) the models are not as accurate, however checks against external sources have shown a strong correlation to our estimates at a local authority, regional and national level (see [Appendix C: Regression models for estimating filled posts in the independent CQC-regulated sector](#)).

In terms of limitations, coverage is not equal across the country. For example, regional coverage of the CQC-regulated independent sector ranges between 45% and 60%. In areas where coverage is high, not having 100% coverage only causes relatively small losses in precision. However, in some areas of the country with lower coverage, the estimates carry less precision. We do not provide confidence intervals for our estimates because they assume that missing data is completely missing, whereas for these estimates we know some information

about the missing data (service, beds, location etc.). However, some estimates are provided in the appendix, using confidence interval methodologies, to give an idea of the loss of precision caused by not having 100% coverage.

## 1.3 The independent sector: non-CQC regulated

### 1.3.1 Definition of sector

The independent sector comprises all private and voluntary adult social care services in England. For the purposes of creating our workforce estimates, we divide the independent sector into CQC-regulated and non-CQC regulated establishments. Organisations which do not provide personal care (i.e., supporting people with activities such as washing, dressing, or going to the toilet) are not regulated by the CQC. Non-CQC regulated services include day care centres and community outreach services which do not provide personal care but may provide services such as cooking or cleaning. Our definition of the non-CQC regulated portion of the independent sector is all the private and voluntary adult social care services in England which do not provide personal care.

### 1.3.2 Inclusions and exclusions

Establishments that directly support both adults and children are included at the data collection stage. For parent organisations that also provide care services in other parts of the UK, only locations with an English postcode, regardless of the provider location, are included in the dataset. Independent sector organisations who provide direct support for children only or who are located outside of England are not included in the data. Organisations who provide support indirectly i.e., they don't have direct contact with people requiring care (e.g., fundraising or training organisations), are not included in the ASC-WDS.

### 1.3.3 Data sources

Data on all independent sector establishments are collected through the ASC-WDS service. Establishments can submit their data at any point during the year, and individual fields can be updated at any point. Reporting is not mandatory for independent establishments. Detailed data quality checks are carried out when large organisations make a submission. Also, our support team checks that organisations in the ASC-WDS meet our definition of a social care provider and they may request evidence if this is not clear.

We enhance our raw data with the ONS [Interdepartmental Business Register](#) (IDBR). The IDBR is a list of UK businesses. It is a combination of data from VAT and PAYE records from HMRC, Companies House data and ONS surveys. Businesses are classified by 4-digit SIC2007 codes. We use selected codes to help estimate the number of non-CQC-regulated independent adult social care establishments.

### 1.3.4 Time period

ASC-WDS data for the non-CQC regulated portion of the independent sector are a snapshot of data recorded at the end of March each year. This allows for us to capture data at the end of the

financial year and before the increase of the minimum wage in April. We then use this snapshot for our “Size and Structure” [publication](#) in the summer and in our “State of” [publication](#) in the autumn.

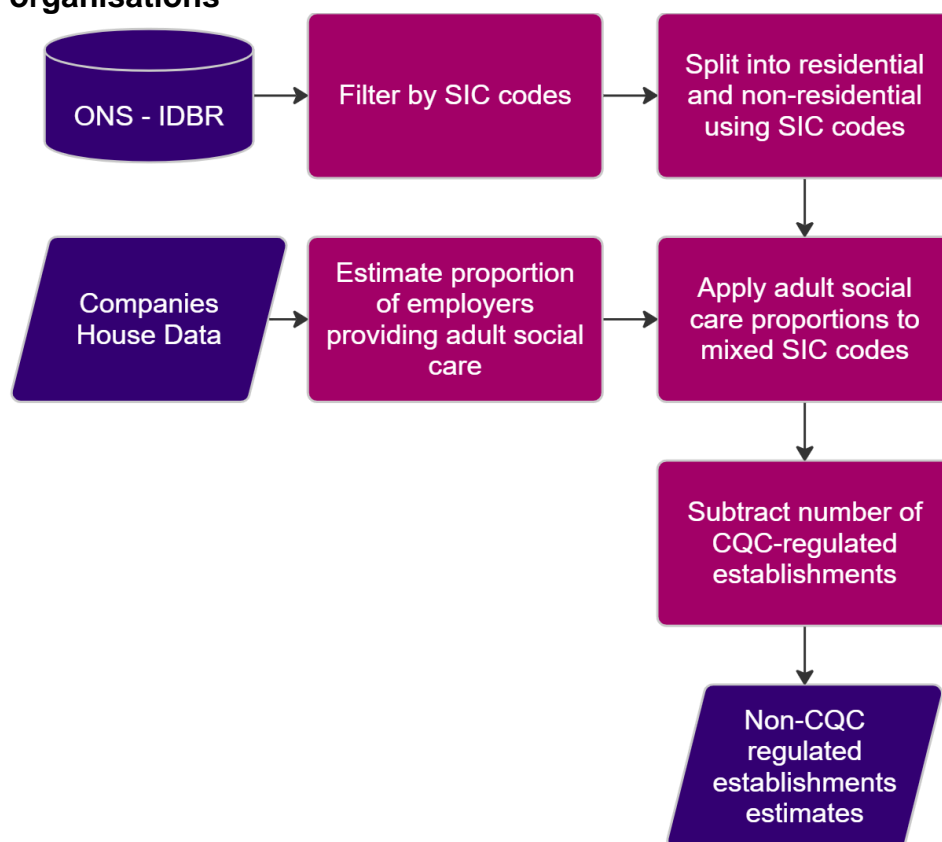
The IDBR contains data collected in March each year. We use the most recently available published dataset from the ONS at the time of making our estimates, which means the IDBR data is 12 months behind the data in ASC-WDS.

### 1.3.5 Method steps

To estimate the size of the non-CQC regulated independent sector, we must first estimate the number of non-CQC regulated establishments, as there is no register of these locations. From the total number of non-CQC regulated establishments, we can then estimate the number of filled posts in the non-CQC regulated independent sector.

The IDBR is used as the basis to estimate the number of non-CQC regulated establishments (see Figure 6). The IDBR categorises establishments as commercial, voluntary, or public. Data on public establishments is filtered out to remove local authority establishments, leaving commercial and voluntary organisations as independent establishments.

**Figure 6. Process for estimating the numbers of non-CQC regulated establishments and organisations**



[Standard Industrial Classification \(SIC\) codes](#) are used in the IDBR to define industries for each organisation. Sector experts at Skills for Care selected the SIC codes in

Table 2 as referring to adult social care organisations. It is acknowledged that some social care operations may fall under other categories. The SIC codes also specify which are residential and non-residential establishments.

**Table 2. SIC codes used to estimate the number of adult social care organisations and establishments**

SIC	Description	Adult / children split	Residential/ Non-residential
87100	Residential nursing care facilities	Assumed 100% adults	Residential
87200	Residential care activities for learning difficulties, mental health and substance abuse	Assumed 100% adults	Residential
87300	Residential care activities for the elderly and disabled	Assumed 100% adults	Residential
87900	Other residential care activities n.e.c.	Mixed adults & children - estimated 40% adults	Residential
88100	Social work activities without accommodation for the elderly and disabled	Assumed 100% adults	Non-residential
88990	Other social work activities without accommodation n.e.c	Mixed adults & children - estimated 35% adults	Non-residential

Non-CQC regulated residential establishments are estimated by subtracting the number of CQC-regulated residential establishments from the total number of residential establishments (local units) reported by the IDBR under SIC codes 87100, 87200, 87300 and 87900. Based on Google searches of the Companies House data for a sample of establishments under SIC code 87900, we created an estimate of the proportion of establishments meeting our definition of adult social care in this SIC code. This proportion is applied to the total number of establishments under SIC code 87900 to remove those that are thought to provide solely children's social care or not provide any form of social care (as per our definition).

Non-CQC regulated non-residential establishments are estimated by subtracting the number of CQC-regulated non-residential establishments from the total number of establishments (local units) reported by the IDBR under SIC codes 88100 and 88990. Based on Google searches of the Companies House data for a sample of establishments under SIC code 88990, we created an estimate of the proportion of establishments meeting our definition of adult social care in this SIC code. This proportion is applied to the total number of establishments under SIC code 88990 to remove those that are thought to provide solely children's social care or not provide any form of social care (as per our definition).

ASC-WDS data on non-CQC regulated providers (all independent sector providers who are not CQC-regulated) is extracted from our data and split into residential and non-residential establishments based on the main service selected in ASC-WDS (see

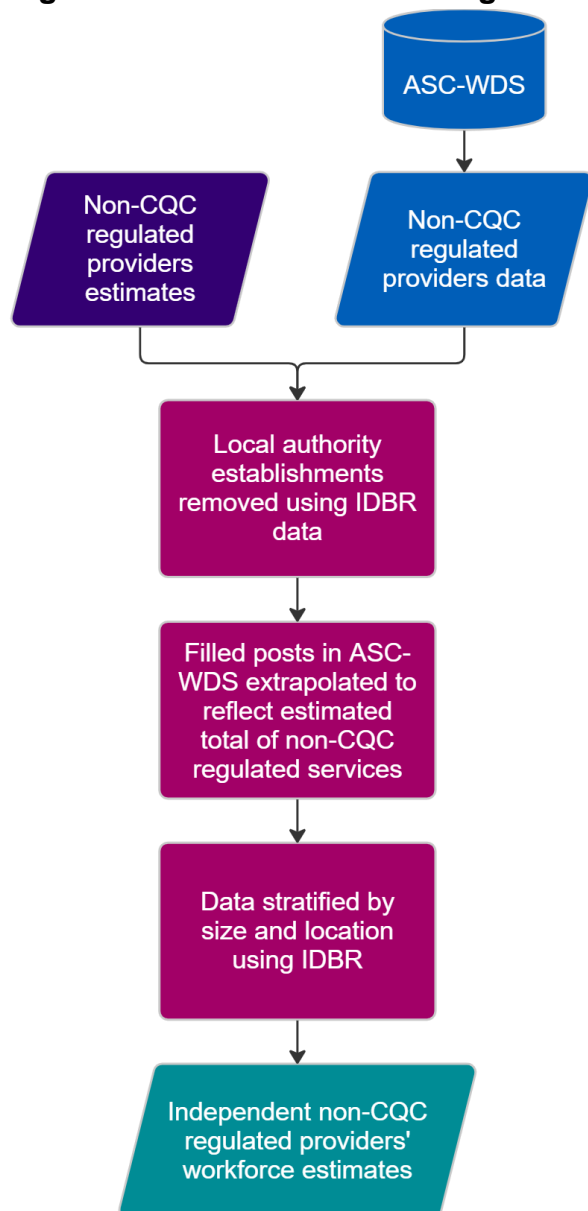
Table 3). The non-residential portion is split by service to allow for more accurate weighting.

**Table 3. Residential and non-residential services in the independent sector**

Residential service groups	Non-residential service groups
CQC Care home only	CQC Non-residential
CQC Care homes with nursing	CQC Other non-residential
CQC Other residential	Non-CQC day care
Non-CQC residential	Non-CQC domiciliary
	Non-CQC community

The total filled posts of ASC-WDS non-CQC regulated establishments are extrapolated proportionately to estimate the total number of filled posts (see Figure 7). The data are stratified by size and location using the IDBR to account for any bias in the ASC-WDS in terms of size.

**Figure 7. Process for estimating non-CQC regulated workforce**



## 1.3.6 Coverage

Our coverage estimate is the proportion of our estimate of non-CQC regulated independent sector establishments that are in the ASC-WDS. As there is no definitive list of non-CQC regulated independent sector establishments, it is not possible to provide a more accurate estimate of coverage. Using a combination of data from the CQC and the Office for National Statistics (ONS) to identify the gap between all care services and CQC-regulated services (i.e. non-CQC regulated services), it is estimated that ASC-WDS covers between 25% and 30% of unregulated independent establishments. Please see the section on Data Quality for more information on how this was calculated.

Certain variables are required to estimate the size of the social care workforce. These are:

- Sector
- Service
- Filled posts
- Geography
- Job role

As at March 2023, the variables listed above were completed by 99% or more of the unregulated independent providers in ASC-WDS.

## 1.3.7 Strengths and limitations

One of the main strengths of our unregulated independent sector data is that our support team carefully checks all unregulated establishments meet our definition of providing adult social care in England. This means we do not accidentally include data about establishments which do not fit our definition of adult social care. We also conduct detailed data quality checks on submissions from large organisations.

This remains a small but challenging part of adult social care to gather data on. It is difficult to identify establishments providing unregulated services and these are often small businesses or charities, which may not have the time or see the value in supplying their data. This means we have proportionally lower coverage for this sector.

In terms of data quality, there is no accurate way to know if the establishments in this group completing ASC-WDS are representative all unregulated providers. As such there is more potential for bias for this part of the sector, than for CQC-regulated providers where we have information about the missing locations.

## 1.4 Individuals employing their own staff (personal assistants)

### 1.4.1 Definition of sector

Individuals with care and support needs and their carers can choose to employ their own staff (known as personal assistants). Personal assistants are employed directly by one or more different people receiving care. They will usually support individuals in their own home or to go out in the community.

### 1.4.2 Inclusions and exclusions

Individual employers are included in our workforce estimates if they are in receipt of social care direct payments from a local authority in England and employ their own personal assistants. Individual employers who employ personal assistants to support children under 18 are not included. Individual employers who are funded solely through other means (e.g., NHS personal health budgets, self-funding) are not included in the adult social care workforce estimates.

### 1.4.3 Data sources

Estimates of the total number of personal assistants employed by direct payments recipients are calculated from multiple sources:

The [Association of Directors of Adult Social Services \(ADASS\) Spring Survey](#) outlines the financial state of adult social care. From this dataset, we use the total number of direct payment recipients and the number of direct payments recipients who employ staff in each local authority in England.

The [Adult Social Care Outcomes Framework](#) is an NHS Digital dataset examining care and support service outcomes. From this dataset we use the number of direct payment recipients with care and support needs at the year end and the number of direct payment recipients who are carers at the year end.

The [NHS Adult Social Care Activity and Finance Report](#) covers local authority funding of adult social care. From this dataset we use the total number of direct payment recipients with care and support needs during the year and direct payment recipients who are carers during the year.

Skills for Care's annual Individual Employer and Personal Assistant surveys are sent to all customers of a leading provider of employment insurance for individual employers. Each customer is posted one paper copy of the Individual Employers Survey and three paper copies of the Personal Assistant survey. There is also a link available for an online survey option. The



questions asked in the survey map onto many of the questions in the ASC-WDS which allows for comparisons between the sectors.

Individual employers and personal assistants are not included in the ASC-WDS.

### 1.4.4 Time period

Multiple data sources are needed to estimate the proportion of direct payment recipients employing staff and the proportion of personal assistants for each individual employer. These data sources are collected at different points over the year, and the most recent data from each source is used to calculate our estimates each year.

Data from the ADASS Spring Survey is collected in May and June and published in July each year.

Data from the Adult Social Care Outcomes Framework and the NHS Adult Social Care Activity and Finance Report cover the period from April to the following March and are published in October each year.

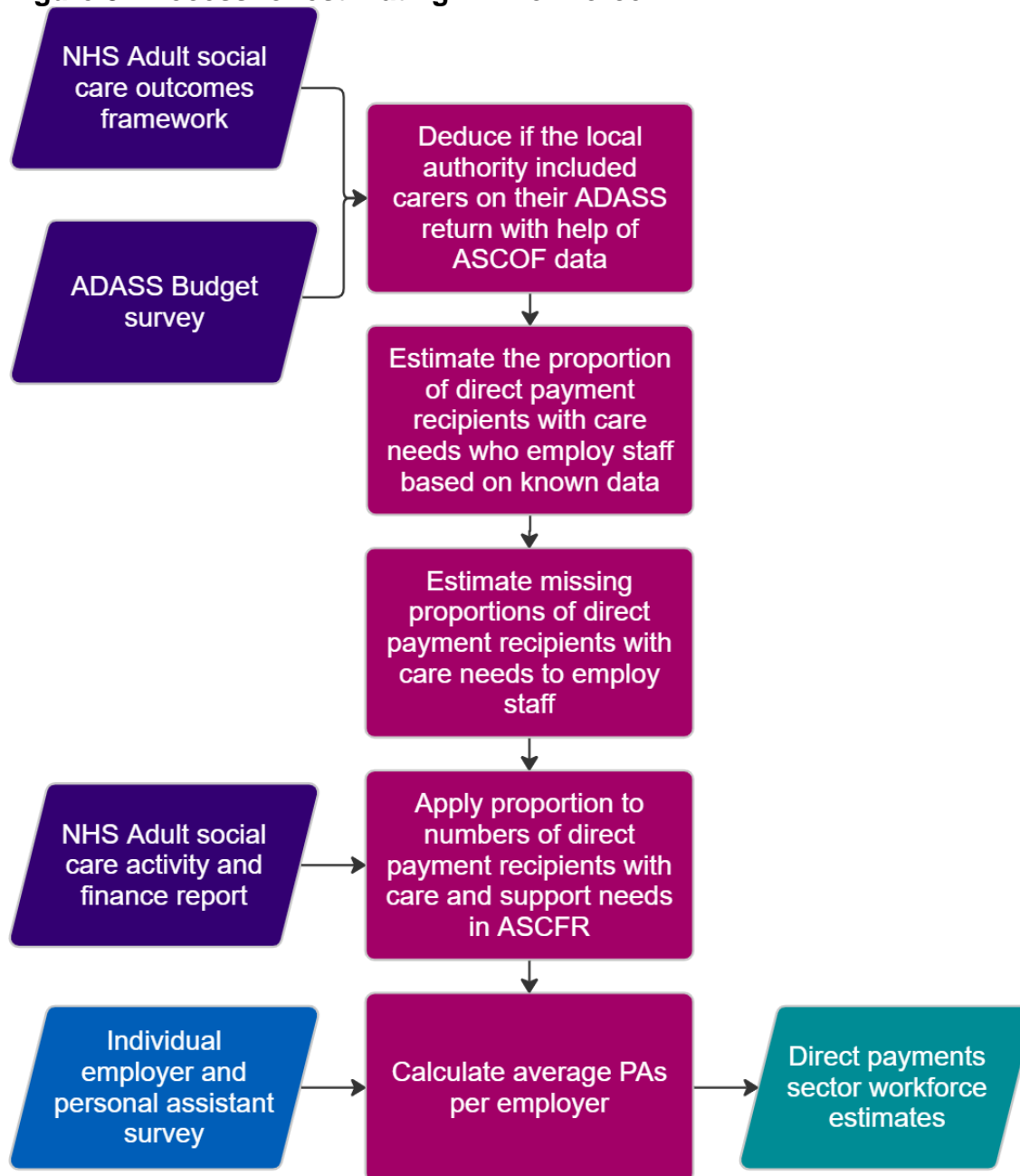
Data from the Skills for Care Individual Employer and Personal Assistant surveys are collected between December and February and published in March each year.

Our direct payment workforce estimates are first published in July. This means that for estimates published in July 2023, we would use: the ADASS survey results from July 2022, two NHS datasets from October 2022, and our own survey results from March 2023.

### 1.4.5 Method steps

Creating estimates of the direct payments sector takes several different data sources and stages (outlined in Figure 8 below). As the ADASS Spring Survey is a self-report survey, not all local authorities report the same information. Some include carer direct payment recipients, as well as direct payment recipients with care and support needs. Others only include direct payment recipients with care and support needs. Therefore, the first step is to determine which local authorities included carers in their ADASS responses. We do this by comparing data from the ADASS Spring Survey with the data from the ASCOF. Using this information, we are then able to estimate the proportion of direct payment recipients with care and support needs who employ personal assistants.

**Figure 8. Process for estimating PA workforce**



Where there is missing data, we use three kinds of models to create estimates:

- Where possible, we **extrapolate** our data points forwards and backwards using a ratio based on the mean proportion of known values each year and the last known data point at either end
- Next, where possible, we **interpolate** between two known data points to estimate missing years in the middle of our data range
- Finally, where neither of these are possible to apply for missing data, we **impute the mean** proportion of known values for that year.

The proportion previously calculated is applied to the number of direct payment recipients with care and support needs who employ personal assistants from the ASCFR. This is added to the estimated number of direct payment recipients with care and support needs with self-employed

staff and the number of carer direct payment recipients who employ staff. This provides us with an estimate for the total number of people employing staff.

To estimate the total number of personal assistant filled posts, we multiply the average number of personal assistants per individual employer according to Skills for Care's Individual Employer and Personal Assistant surveys by our estimate for the total number of direct payment recipients who employ staff. This gives us our headline figure for personal assistant filled posts.

## 1.4.6 Coverage

As our direct payments sector figures draw on several datasets, it is difficult to provide an estimate of coverage.

In 2022, there were 152 local authority areas. The ADASS Spring Survey (which tells us the proportion of direct payments recipients employing staff) included data from 144 local authority areas in 2022. This means their data covers 94.7% of local authorities.

The ASCOF and the ASCFR (which give us the total number of direct payment recipients) covered 151 local authority areas in 2022. This means their data covers 99% of local authorities.

Skills for Care's individual employer and personal assistant survey of the direct payment sector was sent to 37,500 individual employers in February 2023. Personal assistants received the survey through their employer. The survey was completed by 2,464 individual employers and 1,974 personal assistants. Based on the estimated number of direct payment recipients and personal assistants, we estimate this covers approximately 4% of individual employers and 2% of personal assistants.

## 1.4.7 Strengths and limitations

Estimating the workforce directly employed through direct payments presents several challenges. There is no centralised register of who is employed as a personal assistant, and we rely on third party data to estimate the number of filled posts. These data sources publish their data at different points in the year, which again makes comparisons challenging as the population of direct payment recipients and personal assistants is constantly fluctuating. It is also challenging to survey individual employers and personal assistants, who may not have time or may not see the benefit in completing our survey. As a result, there may be selection bias in who responds to our survey.

Our methods account for several sources of error in the data we use, and the data is thoroughly cleaned as part of our pipeline.

Whilst our coverage is low, the methods we use allow us to provide an estimate of the size and characteristics of the workforce in this sector, which does not exist elsewhere. For example, in

2023, we estimated that there were 69,000, 95% CI [63,000, 75,000], individuals employing their own staff via direct payments. In addition, we estimated that there were 130,000, 95% CI [120,000, 145,000], personal assistant filled posts. These are not true confidence intervals as we understand some elements of the missing data. For example, we have historical data provided by local authorities and characteristics of these local authorities, making our estimates more accurate than the confidence intervals suggest.

By using data from a range of sources, we are able to increase the accuracy of our estimates and provide estimates at a national and regional level.

## 1.5 The NHS sector

### 1.5.1 Definition of sector Inclusions and exclusions

The NHS sector comprises NHS employees who work in social care related job roles.

### 1.5.2 Inclusions and exclusions

We include all the following job roles in our estimates as they are deemed to be social care related, despite being employed by the NHS:

- Qualified occupational therapy jobs
- Qualified social services jobs
- Healthcare assistants (excluding maternity jobs)
- Support for occupational therapy jobs
- Support for social services jobs

This list of NHS job roles was determined by sector experts at Skills for Care. Social workers and occupational therapists in NHS healthcare settings provide similar services as in social care settings, so these have been included in our figures. Registered nurses are excluded from this list because in the NHS they predominantly provide healthcare, and the data source does not allow for us to separate out those with a social care focus.

### 1.5.3 Data sources

Data on adult social care related filled posts in the NHS are taken from the [NHS England Social Care Dataset](#). This data is not collected in the ASC-WDS.

The NHS England Social Care Dataset contains a range of data around NHS funded adult social care. This data is used, unadjusted, to identify the number of filled posts and FTE filled posts in the NHS sector by job role and geography.

### 1.5.4 Time period

The NHS England Social Care Dataset uses a snapshot of data taken in September each year. We then use this snapshot for our “Size and Structure” [publication](#) in the summer and in our “State of” [publication](#) in the autumn.

### 1.5.5 Method steps

The workforce estimates for the NHS sector are taken from the NHS England Social Care Dataset. These estimates are cleaned and weighted by NHS England. Skills for Care identifies job roles that are adult social care related jobs roles and totals these. All other roles are

excluded from our total figures. This results in the workforce estimates for the adult social care related filled posts in the NHS sector.

## 1.5.6 Strengths and limitations

Using NHS England data in this way allows us to provide an estimate for the NHS employees who work in adult social care related roles. However, because of the data available through NHS England, we are only able to provide top level figures, and we are not able to describe the characteristics of this sector. In addition, the NHS England Social Care Dataset snapshot is taken in September of each year, which means the reports released the next October use data which is over one year out of date.

Also, not everyone in the roles identified will be carrying out a role deemed adult social care related. For example, some NHS occupational therapists will work predominantly with children. The information is not detailed enough for us to make this distinction.

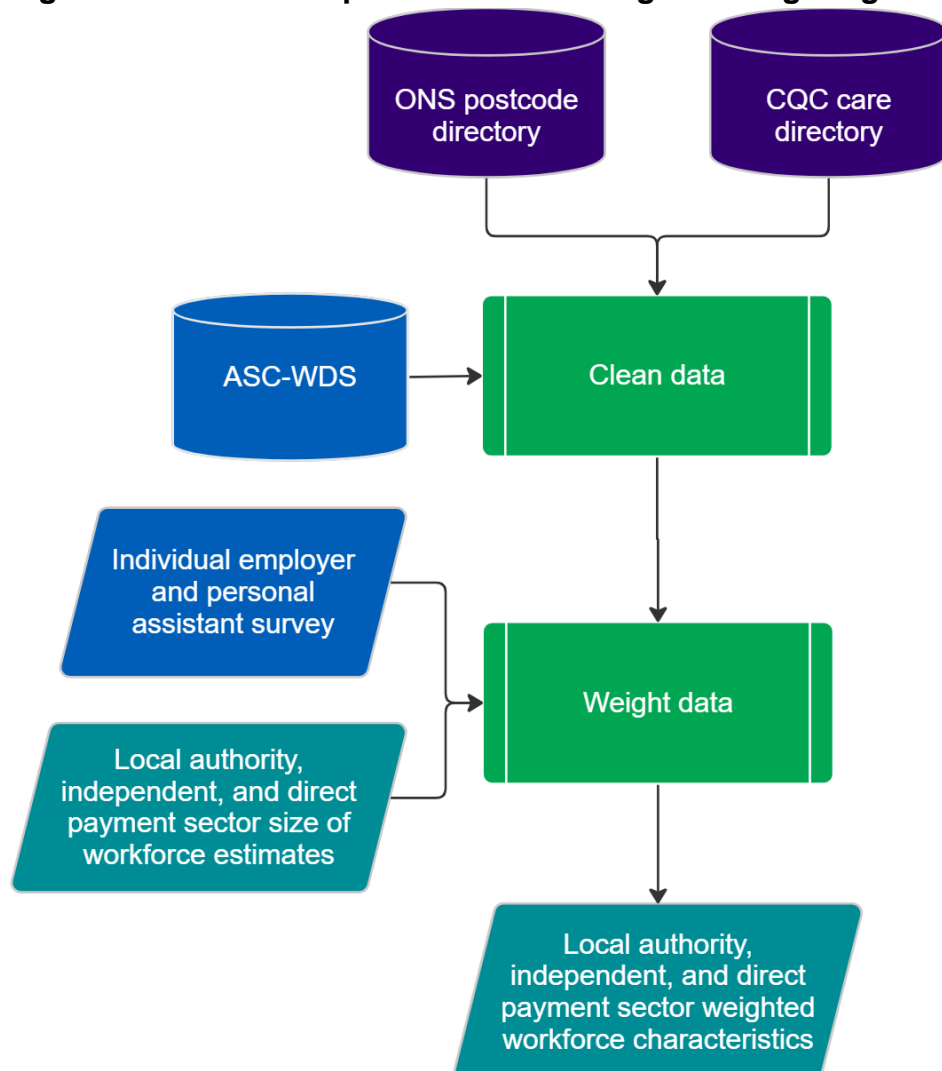
# Estimating the characteristics of the adult social care workforce

## 2 Estimating the characteristics of the adult social care workforce

### 2.1 Background

After creating the estimates of the size of the adult social care workforce, we then go on to estimate characteristics of that workforce. We use the estimated number of filled posts from the previous steps, alongside data on workforce characteristics from the ASC-WDS and the Individual employer and personal assistants survey. To make these estimates of workforce characteristics representative, we enrich, clean and weight the data before analysing it (see Figure 9).

**Figure 9. Overview of process for cleaning and weighting data**





## 2.2 Inclusions and exclusions

Our full estimates of workforce characteristics cover the filled posts working for direct payment recipients, local authority and independent sector workers. We report at a national level on workforce characteristics for the direct payment sector, more detailed geographic analyses sometimes exclude this part of the sector due to the smaller sample size. The data we use from NHS England to estimate the number of adult social care related posts in the NHS does not contain the comparable worker level variables, therefore we do not estimate workforce characteristics for the NHS sector.

## 2.3 Data sources

Local authority and independent sector data on workforce characteristics is collected through the ASC-WDS. Workplace records are created and information about the workplace is recorded. Worker records are created and linked to their workplace; information about the worker is provided to these records.

Direct payments sector data on workforce characteristics is collected through Skills for Care's Individual Employer and Personal Assistant survey. This is sent to all customers of a leading provider of employment insurance for individual employers. Each customer is posted one paper copy of the Individual Employers Survey and three paper copies of the Personal Assistant survey. There is also a link available for an online survey option. The questions asked in the survey map onto many of the questions in the ASC-WDS which allows for comparisons between the sectors.

We enhance our raw data with the [Postcode Directory](#) from the Office of National Statistics (ONS). The Postcode Directory links UK postcodes to geographical and administrative areas. We use it to add ICBs and hybrid geographies (the intersection of ICBs and local authority areas) to raw local authority ASC-WDS data and ICBs, local authority areas, regions, and hybrid geographies to independent sector data by looking up the postcode of the establishment.

The CQC [Care Directory](#) lists all the locations in England where the CQC regulates care services. We collect the CQC location ID in ASC-WDS for CQC-regulated establishments and we use this to join the datasets. We use data from the CQC Care Directory to allocate main service, sector, and geographies to the worker level data.

Workforce estimates of filled posts (method described in Section 1: [Estimating the size of the adult social care workforce](#)) are also used as part of the weighting process.

### 2.3.1 Data checking

Local authority sector data is checked on submission. Poor quality submissions may include problems such as:

- Starter and leaver figures do not match the change in employees between years

- Full-time equivalent pay has been submitted instead of actual pay (some local authorities may keep their own records differently)

We check for these issues in our process and work with local authorities to identify the problem so they can fix it. All local authority data is checked through automatic and manual processes. Changes are requested and the data is rechecked until the quality is high enough.

Independent sector providers are not mandated to complete the ASC-WDS, but to be eligible for the Workforce Development Fund, they must report specific variables about their workplace and a minimum number of responses for their workers (see Figure 15 for details of these variables). Independent sector submissions are checked at-source in ASC-WDS. Detailed data checking is also conducted on large organisations. Extensive data quality checks are carried out during analysis.

## 2.4 Time periods

ASC-WDS data for the local authority sector are a snapshot of data collected at the end of October each year. This allows for us to capture any late submissions from local authorities.

ASC-WDS data for the independent sector are a snapshot of data held at the end of March each year. This allows for us to capture data at the end of the financial year and before the increase of the minimum wage in April. For variables that are sensitive to changes over time (starters, leavers, vacant posts, sickness, and pay), adjustments are made depending on the date of submission (for example we adjusted sickness data during the COVID-19 pandemic depending on when it was submitted).

Data from the Skills for Care Individual Employer and Personal Assistant surveys are collected between December and February.

The ONS Postcode Directory used is published in November each year.

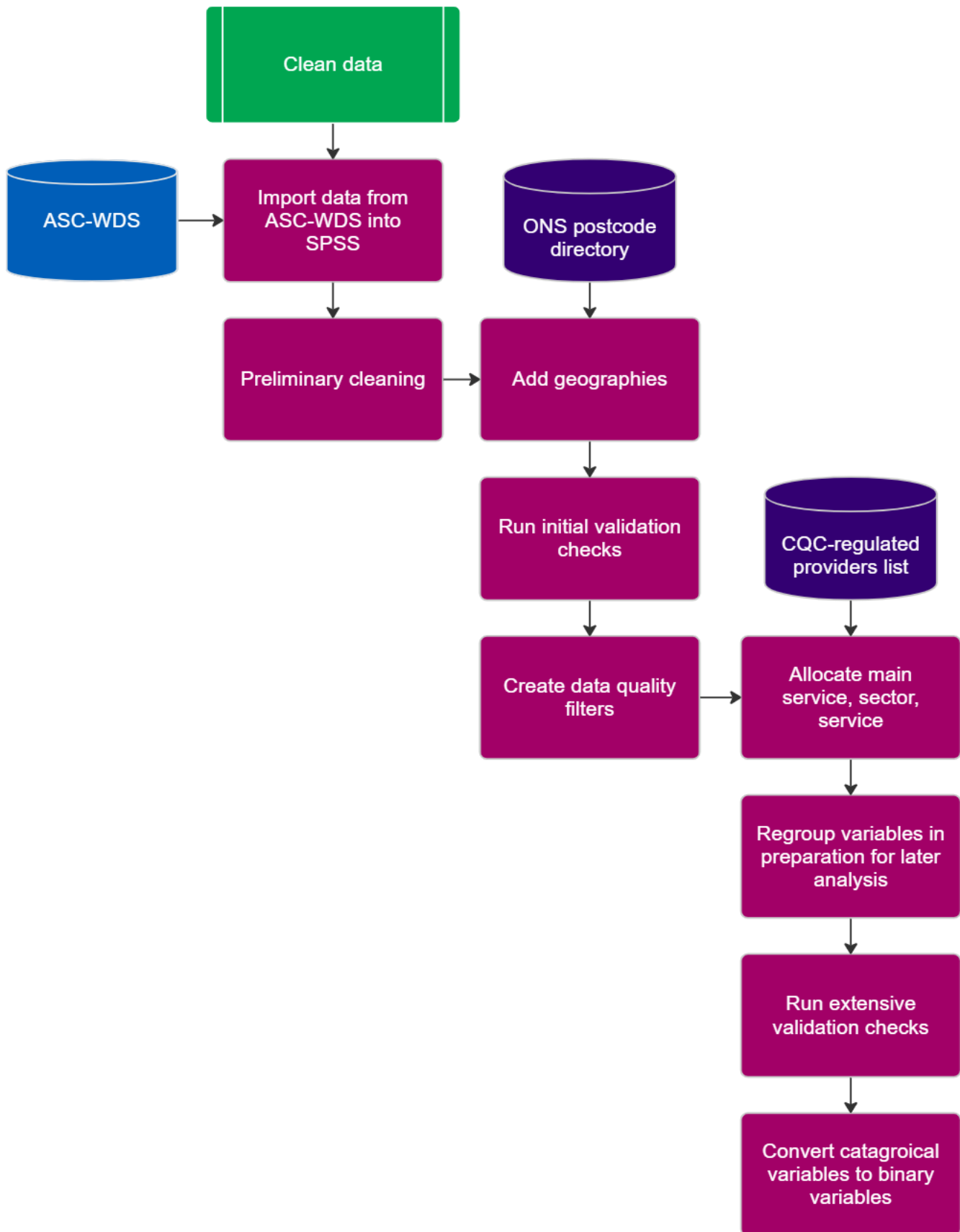
The CQC Care Directory is updated monthly. We use a snapshot of the most relevant Care Directory from the end of March to align with our snapshot of ASC-WDS data.

## 2.5 Method steps

### 2.5.1 Local authority and independent sectors

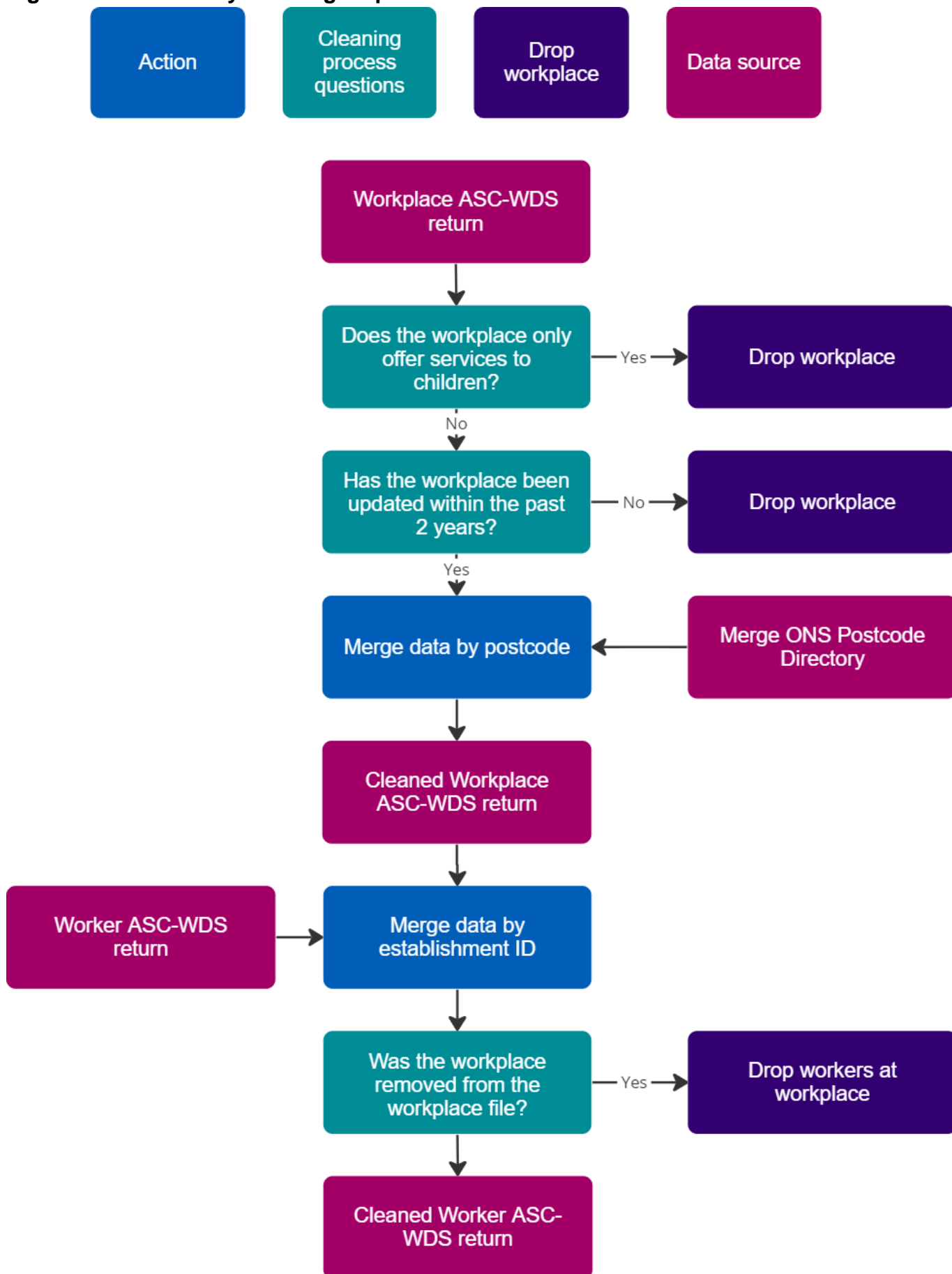
The raw data from the ASC-WDS service is downloaded for cleaning and weighting (see Figure 10 below).

Figure 10. Process for cleaning workforce characteristics data



Preliminary cleaning is conducted, including tasks such as purging inactive accounts (see Figure 11 below) Geographies are added by linking the data to the ONS postcode directory.

Figure 11. Preliminary cleaning steps



For local authority data, where variables are unlikely to change year on year, e.g. nationality, average age, gender or ethnicity, we use the previous year's data as a proxy. For variables that are likely to change e.g. starters, leavers, vacant posts or sickness, we estimate them, along with the independent data to try and reduce the impact on national and regional totals.

Next, data quality filters are created for pay, nationality, country of birth, sickness, qualifications, Care Certificate, training, starters and leavers, and vacant posts to remove extreme outliers based on distance from the mean which are specific to each variable and improve the quality of the results. For example, there is one filter that is applied to both starters and leavers. For this filter, a new variable is added with the value 1 (Include) or 0 (Exclude). A workplace is marked as "exclude" if:

- The workplace was not recorded or not known
- The workplace submitted a partial return (fewer worker records than they recorded total staff)
- The workplace starter or leaver rates were outliers (high and low end), both overall and by job role
- The workplace appears to have included indirectly employed workers in their figures

Additional variables are created where necessary to assist with weighting, including categorising service groups, sectors, worker nationality and hours.

Further, more extensive, validation checks are run at this stage to remove any remaining anomalies. Whereas the initial validation checks include only key variables, these checks go into more depth and highlight problems in a range of variables, for example checking that hours worked per week is 75 or less, or that date of birth is between 14 and 100 years ago.

Finally, categorical variables (e.g., gender) are recoded as binary variables (e.g., gender\_male, gender\_female, gender\_other, see Table 4) to enable weighting of each variable category in the next stage (see Figure 12).

Recoded binary variables with a value of one signify that the value is known and the worker has this characteristic. A value of zero signifies that the value is known, but the worker does not hold this characteristic. Unknown values are left as null. This logic is summarised in Figure 13.

**Table 4. Recoding of the categorical variable gender into binary variables**

Recoded variable	Value = 1	Value = 0
Gender_male	male	Female or other
Gender_female	female	Male or other
Gender_other	other	Male or female

As mentioned previously, the data collected in ASC-WDS has uneven coverage. Coverage is known to be highest for local authorities, followed by CQC-regulated independent establishments and is lowest for unregulated independent establishments and direct payment

recipients. This is because local authorities are mandated to complete the ASC-WDS, and the incentives used to encourage independent establishments to submit their data are more often valuable to larger employers, which tend to be CQC-regulated establishments.

Local authorities are mandated to complete the ASC-WDS, meaning that error due to coverage is minimal, however enforced reporting could create other types of bias in the data. We mitigate this by doing extensive quality checking during the local authority completion window to maximise data quality.

Independent sector establishments, on the other hand, are a self-selected sample. Our support team continually works to engage new CQC providers to join the ASC-WDS and promote its benefits for independent establishments. Several potential sources of selection bias have been considered and assessed.

The main factors which affect weighting are sector, main service, job role, and geography:

- ASC-WDS data is known to be imbalanced by sector because the ASC-WDS service is mandatory for local authorities and optional for independent sector establishments. Therefore, data is reweighted by sector to achieve representative results.
- ASC-WDS data is known to be imbalanced by main service, with more residential establishments covered than domiciliary or community establishments. Therefore, data is reweighted by main service to achieve representative results.
- ASC-WDS data is known to be imbalanced by geographical location because some areas of England have more adult social care establishments than others (e.g., urban areas compared to rural areas), and some areas have higher levels of coverage in ASC-WDS than others. Therefore, data is reweighted by local authority area, ICB area, or region to achieve representative results.
- ASC-WDS data is known to be imbalanced by job role because it is reasonable to assume that different roles require different levels of qualification and are paid at different rates. Therefore, data is reweighted by job role to achieve representative results.

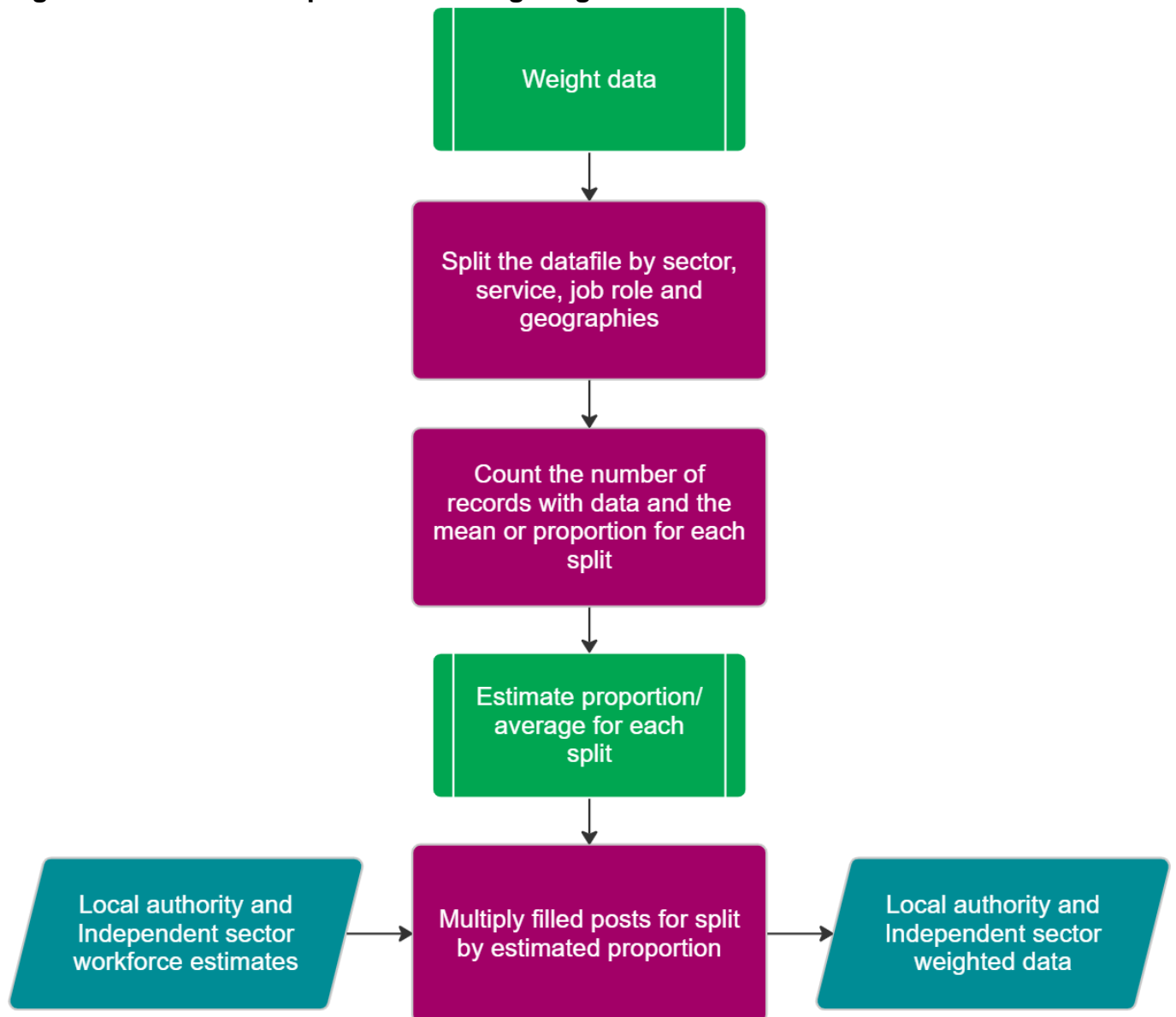
Other potential sources of bias have also been assessed (see Appendix E: Potential sources of bias) and either do not affect coverage or have little impact on the workforce and therefore are not included in the weighting:

- whether responders provide better quality care (CQC rating) than non-responders
- whether the size of establishment affects response rate
- whether the types of care needs services are offered for affects response rate.

The weighting process (see Figure 12) has been designed to address imbalances by sector, main service, job role, and geography by splitting the data by these variables prior to weighting.

Prior to weighting, we split the data by sector, main service, job role, and geographies into 43,524 distinct splits. This allows us to account for imbalances in these variables in the weighting process.

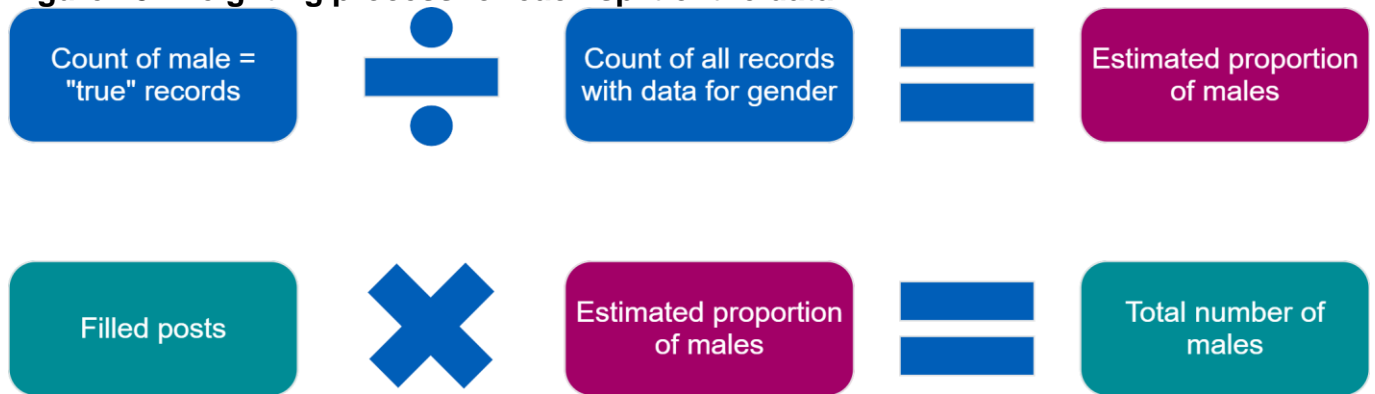
**Figure 12. Overview of process for weighting the workforce characteristics data**



Binary variables (e.g., gender\_male, gender\_female, gender\_other) and continuous variables (e.g., age) are weighted differently. For each binary variable and each continuous variable, each of the 43,524 splits of the data are examined separately.

For each split we record the number of records containing any data for that variable. If the variable is a binary variable, we divide the number of records in ASC-WDS that have “true” responses by the number of records in ASC-WDS containing any data for the variable. This creates an estimated proportion of the number of filled posts where that variable holds true. Multiplying this proportion by the total number of filled posts in the whole sector for that split, gives us an estimate of the number of cases where the variable is true (see Figure 13).

**Figure 13. Weighting process for each split of the data**



**A worked example – male workers**

For the binary variable “gender\_male” all records where the worker is known to be male will be marked “true”. All records where the worker’s gender has been recorded but is not recorded as male will be marked as “false”. All records where the worker’s gender has not been recorded will be null.

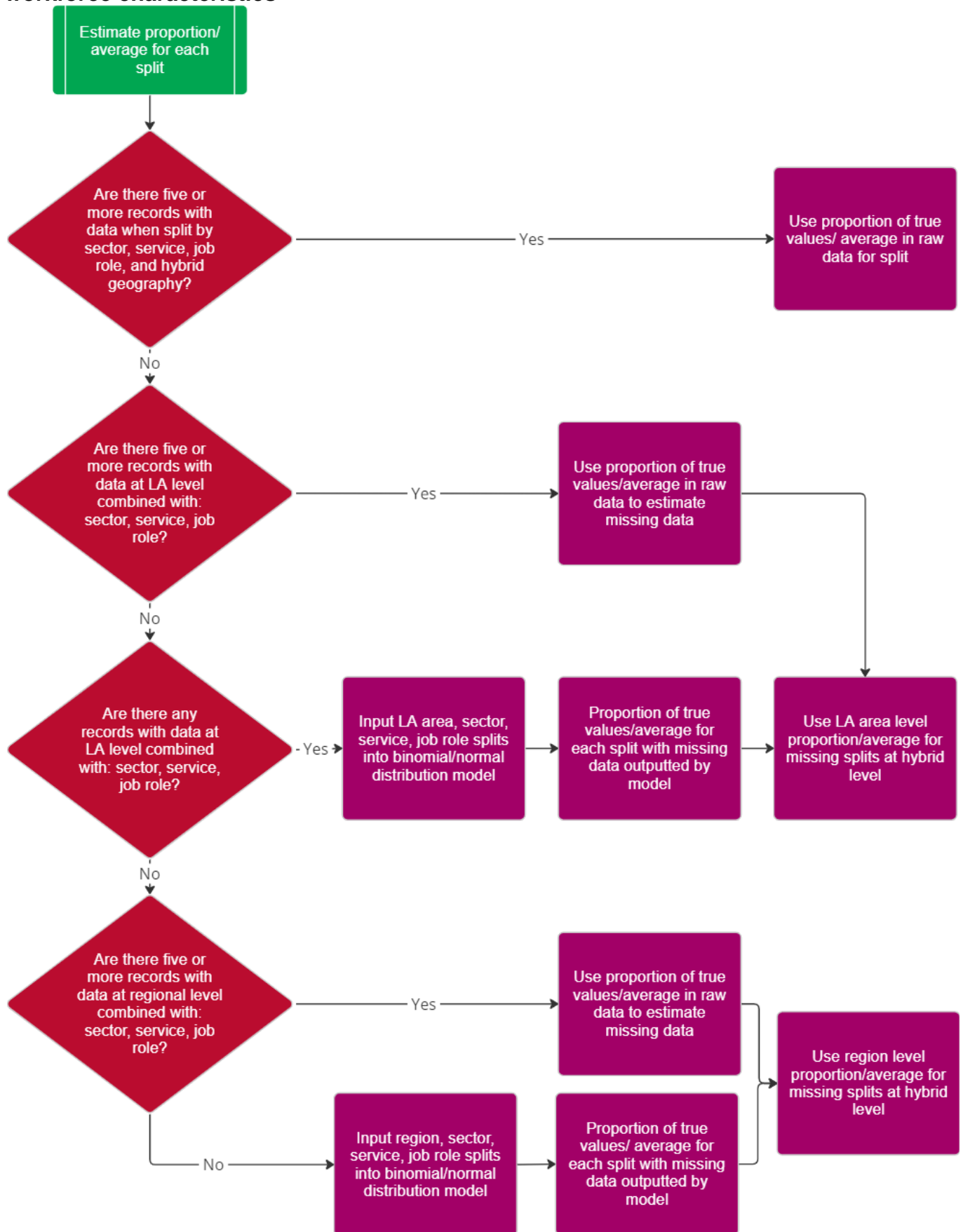
For each split of the data (e.g., care workers in Leeds in the independent sector who provide domiciliary care), we count the number of records that are not null (e.g., 100) and the number of records which are marked “true” for “gender\_male” (e.g., 20). We divide the number of records that have “true” responses by the number of records containing any data for the variable to create an estimated proportion of the number of filled posts where that variable holds true (e.g.,  $20 \div 100 = 0.2$ ). We multiply this by the total number of filled posts for that split (e.g., 1,000) to estimate the number of males in that split. Therefore, in this example the number of male care workers in Leeds in the independent sector who provide domiciliary care would be estimated as:  $1,000 \times 0.2 = 200$ .

Where there is a continuous variable, instead of recording the number of “true” responses we record the mean of the responses. We use this mean, instead of the proportion of true responses to weight the data for each split.

Not all splits of all variables have sufficient data in ASC-WDS to produce an estimated proportion or average. To estimate a proportion or average for splits with insufficient data (fewer than five records known), we use larger geographical areas to pull in more data to the split. Geography is the only hierarchical variable, which makes this technique possible. The geographical areas we use are set by the ONS postcode directory. We then either use the larger pool of data to create an estimated proportion, model an estimated proportion using either a binomial distribution model for the binary variables, or a normal distribution model for the continuous variables. The models we use are trained on the whole of the data in ASC-WDS and we use the specific output for the geographical area. This estimated proportion is then applied to the number of filled posts as above. The logic used for this process is depicted in Figure 14.



**Figure 14. Process for estimating proportions and averages for each split of the workforce characteristics**



This process is repeated until every split of the data for every variable has been estimated separately. When these estimates are added together, it gives us a representative picture of the sector as a whole. For example, the estimated total number of male care workers for each of the 43,524 distinct splits can be added together to give the estimated total number of male care workers in England.

Table 5 shows the proportion of data which is estimated using each stage of the process for gender in the independent sector. In 2023, 90.9% of the filled posts in the sector used raw data from ASC-WDS at hybrid geography level, Although the table shows that 20.3% of splits were calculated using raw data from ASC-WDS at hybrid level, this accounts for 90.9% of all filled posts. Furthermore, most splits have very low filled posts estimates, so although 75.9% of splits were modelled, this accounts for only 8.1% of filled posts. Please note that 90.9% of filled posts using hybrid geography raw data doesn't mean that we have 90% coverage, it means that 90% of the filled posts estimated received their gender breakdown via the hybrid geography raw data method. We have validated the model by checking the modelled outputs against actual data and they show a strong correlation.

**Table 5. Proportion of data splits and filled posts which use each stage of the flowchart shown in Figure 14 for gender (independent sector only)**

Method used for gender	Data splits	Filled posts
Hybrid geography raw data	20.3%	90.9%
Local authority raw data	3.4%	0.7%
Local authority modelled data	75.7%	8.1%
Regional raw data	0.3%	0.3%
Region modelled data	0.2%	0.0%

## 2.5.2 Direct payments sector

Questions on the direct payments survey are designed so that data can be compared between ASC-WDS returns and Skills for Care's individual employer and personal assistant survey returns. Responses to each question on the survey are calculated as a percentage of all surveys returned. This proportion is then applied to our estimate of the total number of personal assistants. The sample size is not large enough to use the methodology used for the independent sector. Surveys are distributed equally to different areas of the country and representativeness checks are conducted prior to analysis to mitigate this.

## 2.6 Analysing the data

The workforce estimates for all three sectors are analysed to produce the "Size and structure" [publication](#) and then the size and structure chapter of "The State of" [publication](#). The weighted workforce characteristics are analysed thematically, covering chapters on employment, recruitment and retention, workforce demographics, pay, and qualifications and training. Where relevant, other datasets are also used to add depth to the narrative of the report.

The following rates are calculated as a proportion of filled posts:

- FTE
- Source of recruitment
- Start age
- Experience in sector
- Experience in role
- Employment status
- Working time
- Zero-hours contracts
- Gender
- Age
- Ethnicity
- Nationality
- Country of Birth
- Disability
- FTE Annual pay
- Hourly pay
- Qualifications
- Care Certificate

Sickness, starters, and leavers rates are calculated as a proportion of Employees. Vacancy rates are calculated as a proportion of employees plus vacant posts.

## 2.7 Coverage

### 2.7.1 Local authority and independent sectors

Local authorities are required to complete minimum records including specific variables as part of their returns.

Independent providers are not obliged to provide their data to the ASC-WDS though many offer this willingly. To encourage providers to provide their data, Skills for Care offers a range of benefits including access to the [Workforce Development Fund](#), which requires a provider to complete minimum records.

Figure 15 shows variables which local authorities are required to submit as part of their returns and independent providers must complete to be eligible to access the Workforce Development Fund. There is overlap between the sectors though some variables, such as worker ethnic group, do not apply to both sectors.

**Figure 15. Minimum record requirements for the local authority and independent sectors**

Key:

	Mandatory for Local Authority return; mandatory for independent sector access to the Workforce Development Fund
	90% required for Local Authority return; 90% required for independent sector access to the Workforce Development Fund
	Not required for Local Authority return or independent sector access to the Workforce Development Fund

Record type	Variable	Local authority	Independent
Workplace	Number of vacant posts		
	Number of starters		
	Number of leavers		
Worker	Main job role		
	Employment status		
	Date of birth		
	Ethnic group		
	Contracted hours or average hours worked if on a zero-hours contract		
	Sickness		
	Pay		
	Qualifications		
	Nationality		
	Care Certificate completion		

## 2.7.2 Direct payments sector

Coverage of workforce characteristics for the direct payments sector is generally stable at around 3-4% of individual employers and 1-2% of personal assistants. As the survey is short, most people who take the time to fill it out complete most of the questions. There are no financial incentives for completing the survey.

## 2.7.3 Completion rates and filtering

In addition to coverage of the sector, completion rates of variables are crucial to understand the quality of our data. High coverage and completion rates will result in less weighting being required and will increase precision. However, as completion is not necessarily indicative of quality, we apply filters to exclude potentially incorrect data to reduce error in our estimates.

Table 6 shows the completion rates for mandatory variables by sector. Completion for all variables in both sectors was 100%. However, the workplace variables have filters applied to exclude 'not known' responses and potentially incorrect responses. Local authority data typically

requires less filtering than independent sector due to the thorough data checks we complete at the point of submission. Around half of the vacant posts, starters, and leavers figures submitted by independent sector providers pass the filters.

**Table 6. Completion rates for the mandatory workforce characteristics variables by sector**

Source: ASC-WDS unweighted data, March 2023

Variable	% records with known data		% records used post filtering	
	Local authority	Independent	Local authority	Independent
Vacant posts	88.3%	70.9%	71.8%	48.7%
Starters	95.2%	66.9%	90.5%	53.5%
Leavers	95.2%	66.9%	90.5%	53.5%

# Exploring the quality of our adult social care estimates

## 3. Exploring the quality of our adult social care estimates

### 3.1 Data quality

#### 3.1.1 Introduction

The data we use to make our estimates comes from a variety of sources, each with different data quality challenges. We address these challenges in different ways, as appropriate for each sector or data source. In some case we complete detailed data checks, in other cases, we examine coverage and response rates for individual variables. We filter out low quality data, where necessary and use rounding and suppression to account for the error in our estimates. We also monitor the coverage of the ASC-WDS across sectors to measure its representativeness. Finally, response rates for variables are measured.

#### 3.1.2 Coverage

The coverage of data from different sources which we use to create our figures varies greatly across data sources and sectors, though have remained stable over recent years. Table 7 shows the coverage of these data sources over time.

**Table 7. Coverage over time**

Sector	2019	2020	2021	2022	2023
Local authority – October snapshot	100%	100%	100%	99.3%	N/A
Independent CQC-regulated (March figures, incl. dormant locations)	54.4%	52%	47.5%	48.5%	51.1%
Independent unregulated	15-20%	15-20%	15-20%	20-25%	25-30%
Direct payments – ADASS returns <sup>9</sup>	62%	74%	73%	71%	66%
Direct payments – Individual employers	2-3%	2-3%	2-3%	2-3%	3-4%*
Direct payments – Personal assistants	1-2%	1-2%	1-2%	1-2%	1-2%*

\* 2023 was the first year that the individual employer and personal assistant survey was sent via email in addition to paper copies, meaning it reached a larger audience than previous years. However, this did not particularly affect coverage.

<sup>9</sup> The proportion of local authorities who reported both the number of direct payment recipients and the number of direct payment recipients employing staff on the ADASS return.

Local authorities are mandated via [The Single Data List](#) to complete the ASC-WDS. This has resulted in very high return rates with 100% of local authorities submitting returns nearly every year.

Independent sector care providers are not obligated to submit data to the ASC-WDS, though many offer this willingly. Skills for Care offers benefits to incentivise providers to submit data such as discounts on training, benchmark indicators of their business's performance, and access to the Workforce Development Fund. Coverage of the independent CQC-regulated sector has been at around 50% in recent years.

Coverage of the independent unregulated sector is an estimate as there is no definitive list of unregulated independent sector establishments. Coverage of this sector is calculated using the proportion of our estimate of unregulated independent sector establishments who are within the ASC-WDS. Our estimated coverage of the independent unregulated sector has increased in recent years, from 15-20% in 2019 to 25-30% in 2023.

It is difficult to estimate coverage of the direct payments sector as our figures are drawn from several datasets. The ADASS Spring Survey provides the proportion of direct payment recipients who employ staff and 66% of local authorities responded to the questions we use in our estimates in 2023.

Skills for Care send surveys to a portion of individual employers and their personal assistants, many of whom do not return them. In 2023, coverage of individual employers was around 3-4% and coverage of personal assistants was around 1-2%. This has remained stable over time.

### 3.1.3 Response rates

Response rates for individual variables vary, including across sectors. Some variables, such as employer type, are mandatory to complete to set up an account on ASC-WDS. Others such as main job role are mandatory to create a worker profile. Non-mandatory variables may have greatly different response rates.

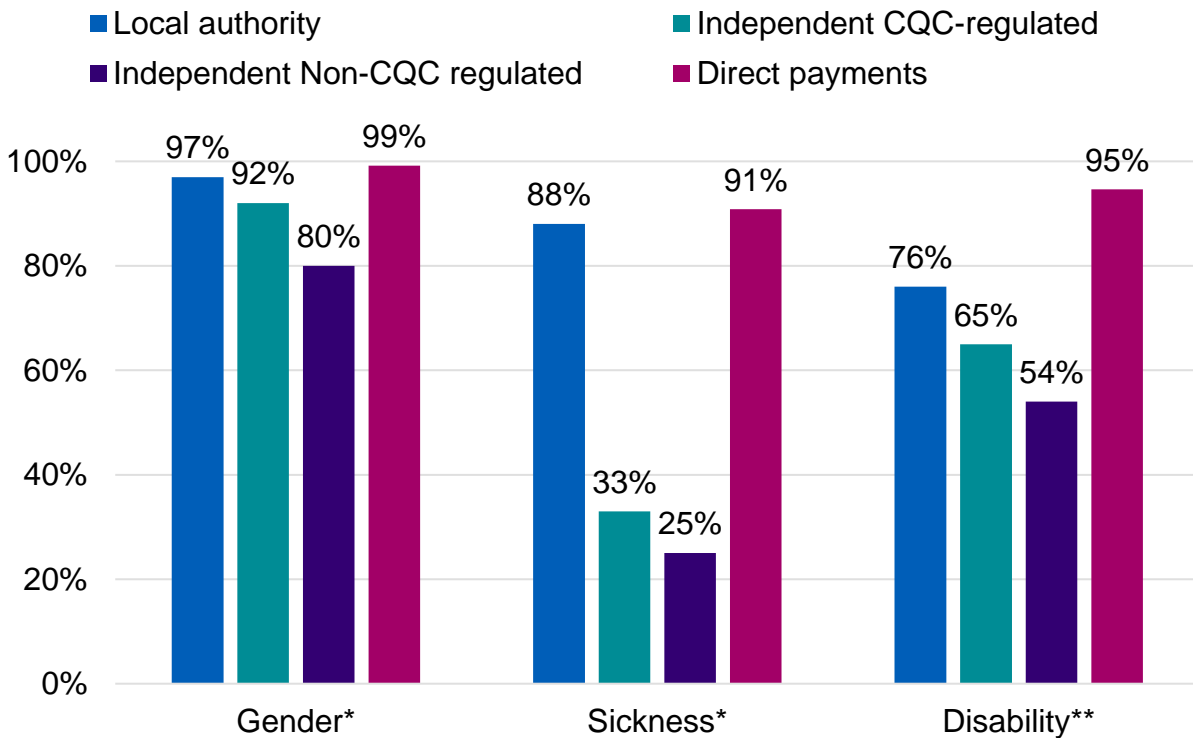
Some variables require additional filtering, which may exclude the variable for a worker or establishment but will not remove the whole worker or establishment.

Chart 3 shows the response rates for selected variables across sectors. The local authority sector typically has a high response rate across variables, particularly for those which require high completion for their return. The response rates across variables in the independent sector vary. For example, sickness is a numeric entry and is likely to require additional resources to report compared with binary variables such as gender and disability status, which may be a reason for its low response rate. The response rates in the direct payments sector are very high, likely because these variables are self-reported by personal assistants.



### Chart 3. Response rates for selected variables across sectors

Source: ASC-WDS unweighted data October 2022 and March 2023, Personal assistants survey 2023



\* 90% of worker records required for the local authority return; 90% of worker records required for independent sector access to the Workforce Development Fund.

\*\* Not required for the local authority return or for independent sector access to the Workforce Development Fund.

The local authority sector tends to have high response rates due to the data checking process and their obligation to have their data submissions accepted. Independent sector providers are not obliged to submit data and the same checking process is not in place for their submissions. Regulated providers tend to have higher response rates than unregulated providers; this may be because the incentives offered for independent sector providers to complete the ASC-WDS are more relevant for larger organisations. The unregulated portion of the independent sector has fewer large organisations than the regulated portion, therefore the incentives may not be as beneficial for unregulated organisations.

The direct payments sector has very high response rates to most variables. Personal assistants self-report these variables so are more likely to know the answers to these questions, crucially with a high degree of accuracy. In the other sectors, a manager or administrator will likely provide this data on behalf of their workers and they may not always know the answers. This is particularly noticeable for disability and ethnicity variables.

### 3.1.4 Filtering

Filters are applied to several variables to exclude records which are likely to be incorrect or came from providers who have overall questionable data for that variable. See the methods section of Section 2 '[Estimating the characteristics of the adult social care workforce](#)' for more detail on our filtering process. Filters are checked and updated as necessary. However, they may still inadvertently exclude legitimate data while including incorrect data.

### 3.1.5 Measuring error

We don't provide confidence intervals for our estimates. Confidence intervals are a method used to estimate the range for the population mean based on a random sample. The establishments who submit their data through the ASC-WDS aren't a random sample, they are self-selected. This means that confidence intervals are not generally a suitable tool for our data.

Also, confidence intervals assume we know nothing about the missing data outside of the sample. Whereas with ASC-WDS, a lot of information is known about the missing data due to other data sources such as the CQC Care Directory. From this, for example, we know the capacity, service type and location of the missing establishments and can therefore fill in gaps using models rather than treating them as completely missing.

### 3.1.6 Sampling error at different levels of coverage

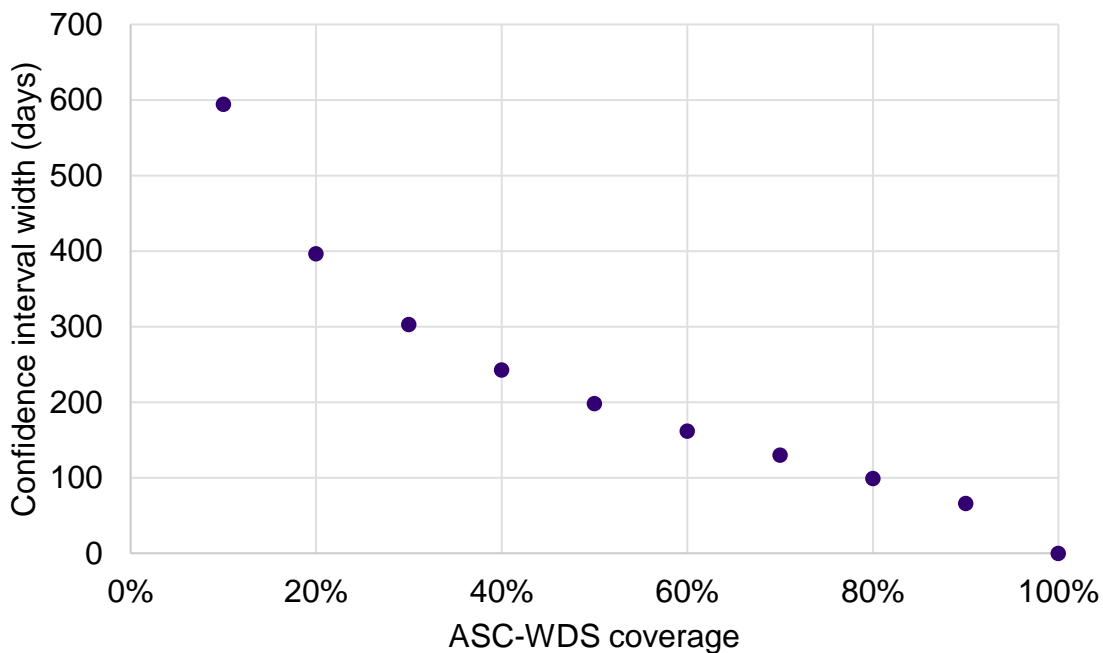
This section isolates the sampling error associated with not having 100% in the ASC-WDS. These figures do not include any error that could be caused by the representativeness of the sample or by data quality. Previous sections cover the weighting methodology used to account for known sources of bias in ASC-WDS and the data quality filtering used to minimise these potential errors.

Using confidence interval methodology, we have calculated the size of the error associated with different levels of coverage for a worked example (the average age in Dorset which is an average size local authority area).

The chart shows that for the average age in Dorset, at 50% coverage, the error associated with not having 100% coverage is around 200 days (100 days above and below the mean).

The level of coverage varies for different parts of the country and for different variables in ASC-WDS. The chart shows that if coverage in Dorset was 20% the precision would fall to 400 days (200 days above and below the mean) and that marginal gains are made at higher levels of coverage.

**Chart 4. Confidence interval width (in days) for estimates of the average workforce age for an average sized local authority**



### 3.1.7 Rounding and suppression

Instead of confidence intervals, we use rounding to evidence our degree of confidence in the data. It can minimise the impact of inaccurate data on overall figures and reduce the risk of identifying individuals. We use suppression when figures are too low to protect the identity of individuals, or the sample is small so figures may be inaccurate.

Table 8 outlines the rounding and suppression used in our analyses. As we have a higher degree of confidence in local authority data, larger figures do not require as broad rounding as for independent sector data.

**Table 8. Rounding and suppression rules**

Lower value	Upper value	IND	LA
0	0.000	0	0
0	Suppression value (either 10 or 25)	<10 or <25	<10 or <25
10	14.999	10	10
15	499.999	25	25
500	999.999	50	100
1,000	9,999.999	100	100
10,000	24,999.999	500	100
25,000	249,999.999	1,000	100
250,000		5,000	100

### 3.1.8 Strengths and limitations

Some of the main strengths of our local authority estimates are the high coverage and thorough data checking. Local authority coverage is consistently very high, frequently with 100% of local authorities submitting data. It is only once local authority submissions have passed many checks that their data is accepted, meaning that the quality of data is high.

The independent CQC-regulated sector is the largest sector within adult social care in England and the ASC-WDS frequently covers more than 50% of establishments. We have numerous filters which are applied as necessary when conducting analyses. These are robust, replicable, and applied consistently. Filters are applied most frequently to independent sector data, which balances the fact that data from this sector is not routinely checked upon submission.

The independent sector contributed the most data to the ASC-WDS. Due to the scale of the sector, we do not have the resources to check the quality of data at the point of submission in the manner given to local authority data. This means that the independent sector is more likely to provide low quality data. This is addressed through at source validation on the service and filtering the data before weighting.










There is no definitive list of unregulated independent sector establishments, meaning our coverage of this sector is an estimate. The ASC-WDS support team is not able to identify and contact unregulated providers so they may be less likely to engage and provide data to the ASC-WDS.

Data can be submitted to the ASC-WDS by manual entry on the ASC-WDS service or by “bulk upload”. Manual entry may be preferable for smaller organisations while large organisations are more likely to use the bulk upload mechanism. These methods may introduce their own sources of error. For example, human error is more likely to impact individual submissions, though any error that is repeated across entries in a bulk upload will impact all entries.

### 3.1.9 Summary

Whilst many factors affect the quality of our estimates for each sector, we have attempted to summarise these into a data quality rating for both the size of workforce estimates and workforce characteristics estimates (see Table 9 below). The more stars a set of estimates is awarded, the higher the quality of data that was used to make those estimates.

**Table 9. Visual estimate quality ratings by sector and type of estimates**

Sector	Estimate quality rating	
	Estimating the size of the workforce	Estimating the workforce characteristics
Local authority		
Independent: CQC-regulated		
Independent: unregulated		
Individuals employing their own staff		
NHS		N/A

## **3.2 Future developments**

### **3.2.1 Automated data checking**

We check the submissions of local authorities in the ASC-WDS using automated and manual checks. At this stage, the automated tools we have are only available to analysts at Skills for Care. We are in the process of developing an easy-to-use tool that will allow local authorities to check their own data before submitting it to us. The tool will identify patterns in the data which suggest incorrect submissions (e.g., submitting full-time equivalent sickness rates instead of actual sickness rates) and allow local authorities to make changes before submitting their data.

### **3.2.2 Checking independent sector data**

If the automated data checking tool works well for local authorities, it will be possible to make it available to independent organisations as well. Currently one of the main limitations of our method is that we don't have the resources to check the data of individual independent sector submissions before the analysis stage, like we do with local authority data. Providing an automated checking tool, will be the first step to improving this.

### **3.2.3 Data engineering pipeline**

Currently, the methods outlined in this paper are undertaken manually. Given the complexity and detail in these methods, this is a time-consuming process to undertake manually and check at each stage. We are currently working to transfer our analytical process into a data engineering pipeline, allowing us to automate much of the analysis. This will make our estimates quicker to produce and more accurate. We are also able to use additional statistical techniques (such as interpolation and extrapolation over time) at the level of the establishment or worker, meaning that we will be able to provide trended estimates at smaller geographical levels.

# Conclusion

## Conclusion

Our adult social care workforce intelligence aims to provide reliable, evidence-based estimates of the state of the adult social care workforce in England. There are several challenges to doing this, including a lack of information about some parts of the adult social care workforce and motivating employers to submit their data.

The methods outlined in this report aim to mitigate these challenges and maximise the insights we provide. We collect our own data using the ASC-WDS and the Individual Employer and Personal Assistant survey and then clean and enrich this using other reputable data sources. We use different methods of creating estimates for each sector within the workforce to account for the different challenges each sector poses. Our two stages of producing estimates firstly solve the challenge of identifying the size of the adult social care workforce in England for each sector and then become the basis of estimates of detailed characteristics.

Our knowledge of the local authority and CQC-regulated independent sectors is the most comprehensive, and the coverage of these sectors is one of the strengths of our reports. Our knowledge of the unregulated independent sector and the direct payments sector is more limited, meaning that our personal assistant workforce characteristics are only available at a national level.

Looking to the future, we are aiming to improve the quality of the data we collect in ASC-WDS using automated data checking tools at submission and building a data engineering pipeline to improve the detail of our estimates.



# Further resources

## Further resources

### Our workforce intelligence publications

We provide outstanding workforce intelligence which the Government, strategic bodies, employers, and individuals rely upon to help them make decisions that will improve outcomes for the people who use care services. To access our reports and visualisations, please refer to the relevant pages on our [Workforce Intelligence website](#).

The three annual reports that we have referred to in this document are as follows:

#### **The state of the adult social care sector and workforce in England**

This report delivers in-depth analysis of the workforce in the adult social care sector in England. This includes further detail on the size and structure of the workforce, as well as information on workforce characteristics, trends and future projections.

To access this information, visit <http://www.skillsforcare.org.uk/stateof>

#### **The size and structure of the adult social care sector and workforce in England**

This report provides estimates of the number of organisations and establishments involved in providing or organising adult social care, as well as the size and structure of the workforce, including people and filled posts estimates, trended data, and future projections.

To access this information, visit [www.skillsforcare.org.uk/sizeandstructure](http://www.skillsforcare.org.uk/sizeandstructure)

#### **Individual employers and the personal assistant workforce**

This report analyses information about individual employers (many of whom are direct payment recipients) and their personal assistants in England. It includes key figures about the size and profile of the personal assistant workforce, turnover rates, pay rates and other workforce information.

To access this information, visit <https://www.skillsforcare.org.uk/iepa>

# Appendices

# Appendices

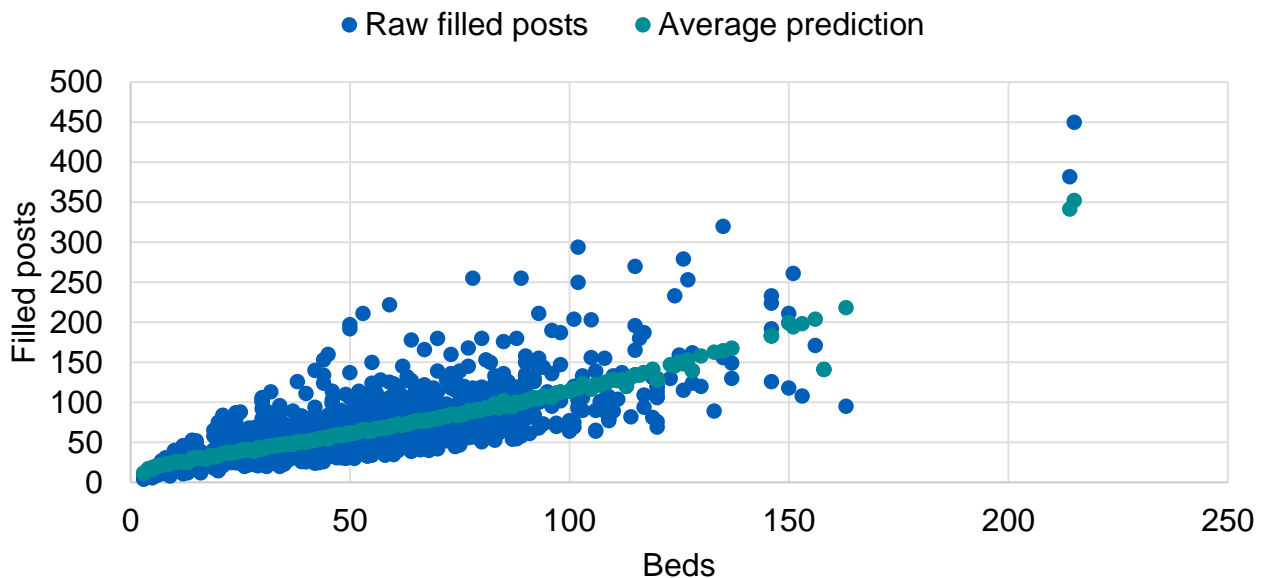
## Appendix A: Data collected through the ASC-WDS service

For a full list of variables collected and questions asked in ASC-WDS as at January 2023, please see the accompanying spreadsheet.

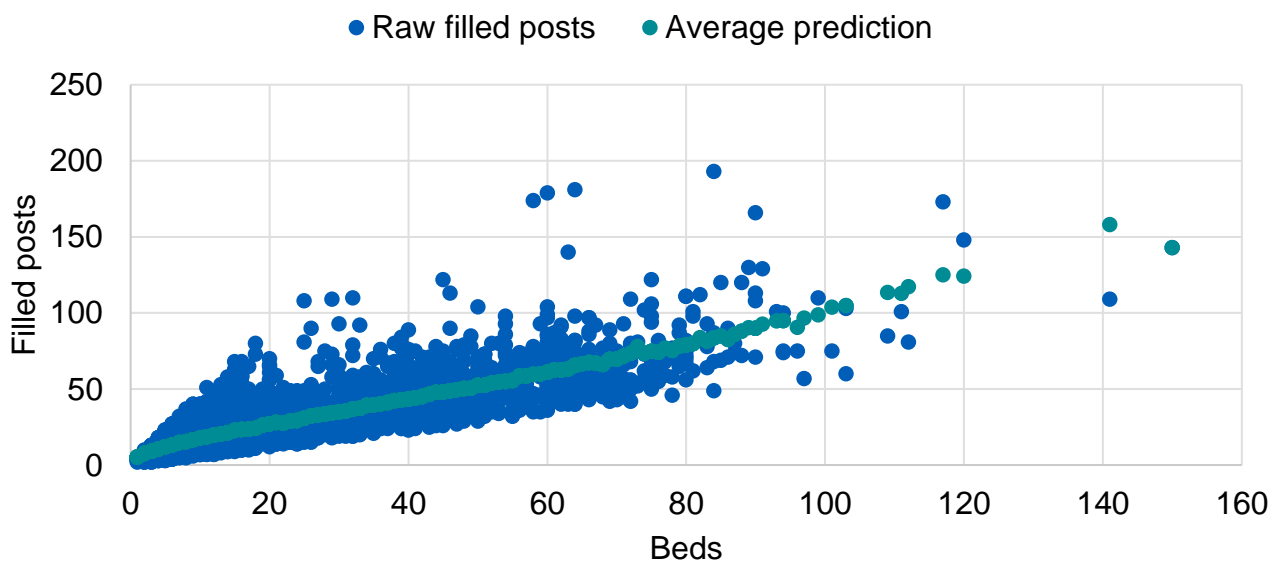
## Appendix B: Regression models for estimating filled posts in the independent CQC-regulated sector

The following charts show the relationship between residential CQC-regulated independent sector establishments filled posts and beds for March 2023. Residential establishments tend to be buildings with a specific number of beds. The charts below show there is a strong correlation between the number of beds and the number of posts required.

**Chart 5. The relationship between care homes with nursing beds and filled posts in residential establishments in the independent CQC-regulated sector**



**Chart 6. The relationship between care only home beds and filled posts in residential establishments in the independent CQC-regulated sector**



Non-residential establishments don't have a set number of beds, as they provide services in people's own homes, and their size can grow and shrink rapidly as contracts change. This makes it harder to estimate the number of filled posts at non-residential establishments.

'Appendix C: Regression models for estimating filled posts in the independent CQC-regulated sector' shows comparisons between our estimates and the data collected by [Capacity Tracker](#).

## Appendix C: Regression models for estimating filled posts in the independent CQC-regulated sector

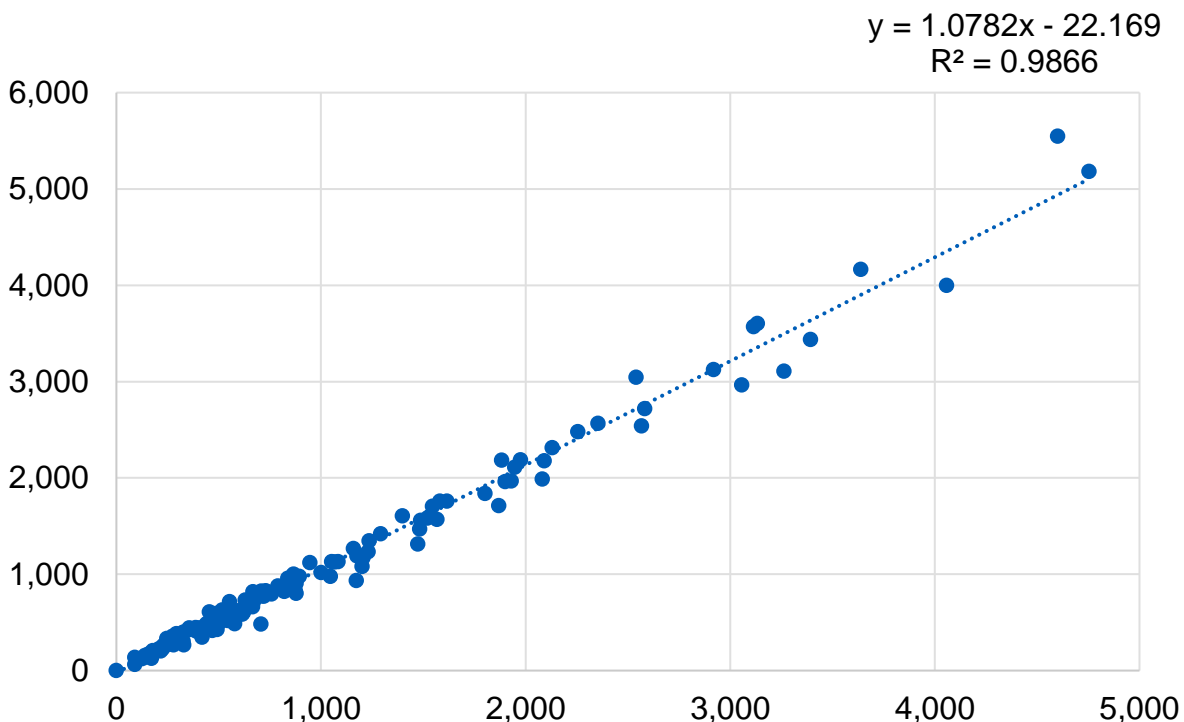
The following charts show the correlation between Skills for Care’s filled post estimates, at local authority level, with [Capacity Tracker](#) data for independent CQC-regulated services, split by service type.

The Capacity Tracker has very high coverage for the number of filled posts at each CQC-regulated location of care. This comparison is useful assessing accuracy of Skills for Care’s estimates based on the sample of data in ASC-WDS.

All three comparisons show very strong relationships, suggesting that our estimates of filled posts for establishments not in ASC-WDS are reliable.

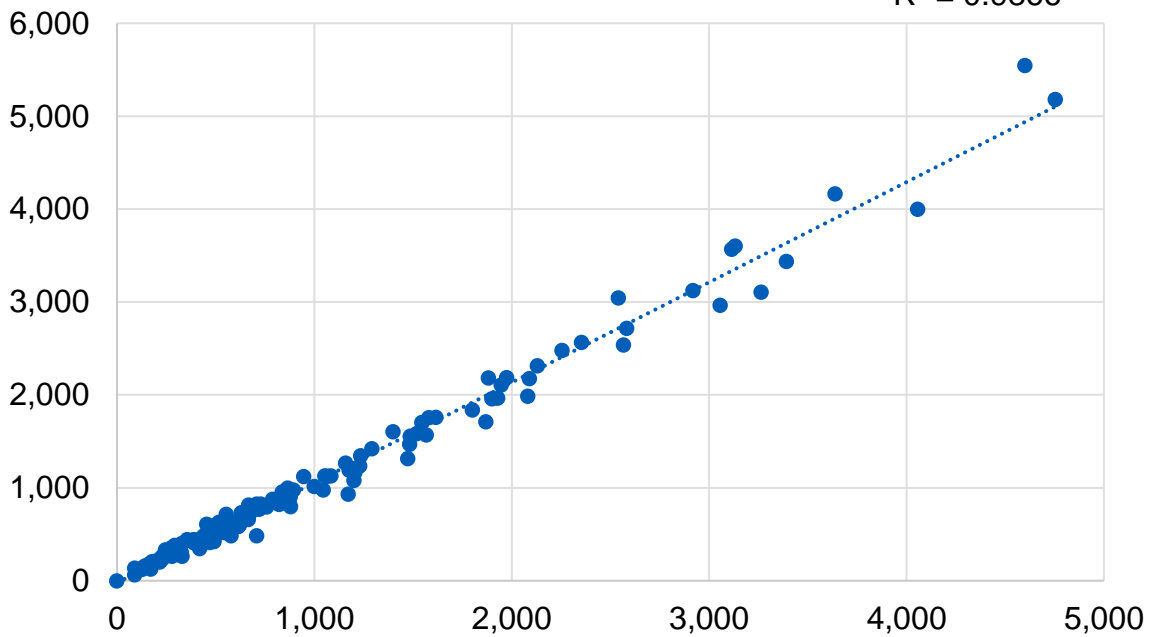
There is slightly more variability for non-residential services due to the model not being as precise as the care home model. However, the aggregated results at local authority are still strongly correlated with information of the Capacity Tracker.

**Chart 7. A comparison of filled post estimates in local authority areas for independent CQC-regulated care homes with nursing and Capacity Tracker data as at March 2022**



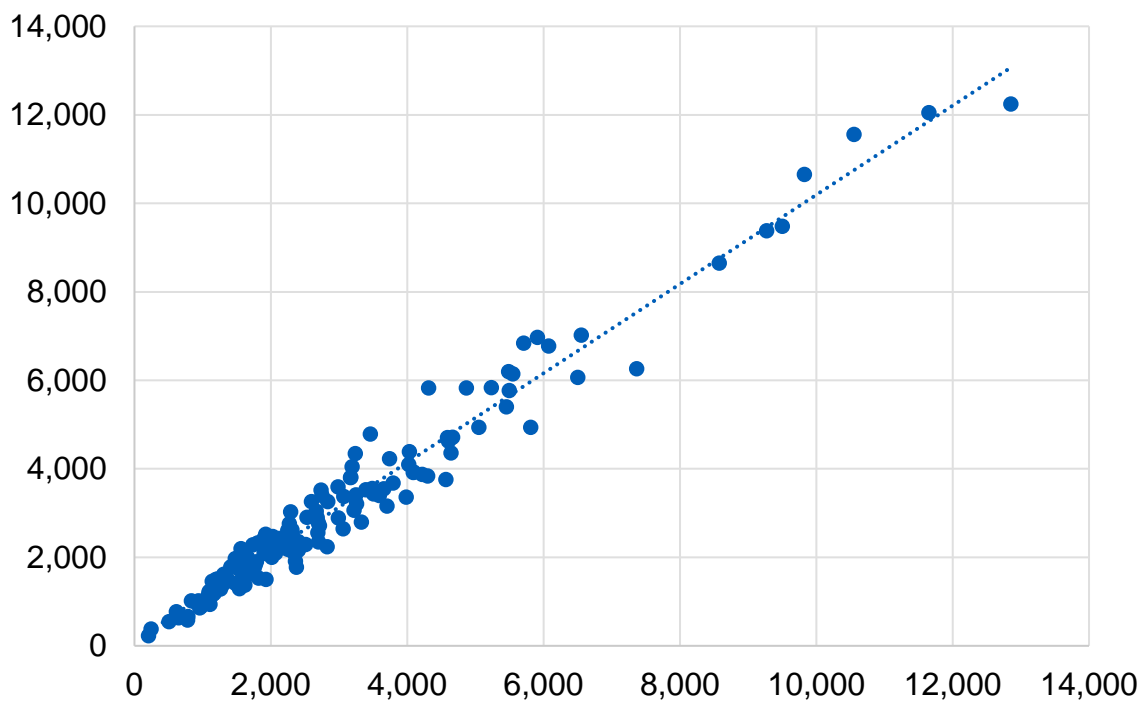
**Chart 8. A comparison of filled post estimates in local authority areas for independent CQC-regulated care only homes and Capacity Tracker data as at March 2022**

$$y = 1.0782x - 22.169$$
$$R^2 = 0.9866$$



**Chart 9. A comparison of filled post estimates in local authority areas for independent CQC-regulated non-residential services and Capacity Tracker data as at March 2022**

$$y = 1.008x + 111.73$$
$$R^2 = 0.9661$$







## Appendix E: Potential sources of bias

**Table 10. ASC-WDS coverage by type of care need**

Care need	Coverage	Base
Dementia	50%	17,227
Learning difficulties	54%	13,268
Physical disabilities	50%	16,010
Older people	50%	21,965

**Table 11. Size of CQC-regulated care home establishments by participation in the ASC-WDS**

On ASC-WDS?	Mean number of care home beds
No	30.9
Yes	30.4

**Table 12. Average CQC rating by whether or not location was found on ASC-WDS**

On ASC	Number of locations inspected	Average rating
No	10,854	14.4
Yes	13,412	14.6



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