Long-term Care in England

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Abstract

This paper describes the state of Long-Term Care (LTC) in England. LTC, which is generally referred to in England as adult social care, supports activities of daily living for older and disabled individuals to improve their quality of life. This includes stays in nursing homes as well as home-based help with tasks such as washing, dressing, and feeding.

Reference Details

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1. Introduction

This paper describes the state of Long-Term Care (LTC) in England. LTC, which is generally referred to in England as adult social care, supports activities of daily living for older and disabled individuals to improve their quality of life. This includes stays in nursing homes as well as home-based help with tasks such as washing, dressing, and feeding.

England's LTC system is facing increasing strain due to population aging. Longer lives, combined with fertility rates below replacement rates, means that an increasingly large share of the English population is aged 65 or older. Figure 1 shows that the share of the population that is aged 65+ has approximately doubled over the last 60 years. It currently stands at 20% of the population and is projected to continue growing over time. Importantly, Figure 2 shows that the oldest old, i.e., those aged 85+, are forecast to grow especially rapidly as a share of the population over next twenty years from 2030 onwards. Because LTC needs grow with age, and particularly after age 85, expenditure on formal LTC services will most likely need to rise. In addition, population aging will also increase the already significant burden of informal care faced by families. In this paper we estimate the value of informal care provided to the age 65+ population in England in 2018 to be between 0.7%-2.5% of GDP, i.e., around 1 to 3 times the size of formal LTC costs.[1]

While the National Health Service (NHS) provides free public medical care, it does not provide LTC. Instead, local authorities pay for most public LTC and have considerable flexibility to organize and provide that care as they see fit. Eligibility for care depends on both a needs test and a means test. Depending on their current income, those receiving means-tested care are expected to contribute to the cost. Around 65% of the cost of formal LTC is financed by local authorities and other public providers.

England has seen multiple reforms to LTC funding policy in recent years. These reforms have given families more choice in how care is received. For example, there has been a push in recent years for older people to receive care in their own home – 60% of recipients of public social care currently receive care at home. There has also been a move towards 'personal budgets' and 'direct payments', which allow recipients to choose how their allocated money is spent and can enable them to choose their own care worker. Perhaps

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[1] Where possible in this paper we present all statistics and analysis for the English population, since that is the jurisdiction that corresponds most closely to our microdata. In certain instances, however, typically when drawing from National Accounts type analysis which are computed at the UK level, England specific statistics are not available. Hence we occasionally use UK statistics and explicitly label them as such. The English population makes up the large majority of the UK population and the demographics across England and the other UK nations are similar; the English population is slightly richer and healthier on average but experiences a slightly less generous LTC care system. So one might expect English statistics to be similar to the UK statistic were they to be available.

more radically, there have been plans to address the often high out-of-pocket cost of care. In 2021 the government legislated certain recommendations of the Dilnot Commission (2011), including a fixed lifetime cap on LTC charges and a more generous means-test. The current policy, to take effect from October 2025, is for a lifetime out-of-pocket spending cap of £86,000 and an increase in the asset limit, above which individuals are not eligible for support, from £23,250 to £100,000 to help insure against the risk of catastrophic costs.

This paper pieces together microeconomic and aggregate data in order to give an overview of the demand and supply of LTC in England in a way that facilitates comparisons with other countries, and briefly discusses current LTC policy and recent reforms. The analysis in this paper proceeds in three sections. Part 1 looks at the demand for care. First, we explore the association between functional limitations on the financial well-being of the age 65+ population. We focus on the well-known measures of limitations with respect to Activities of Daily Living (ADLs, or activities such as toileting and bathing) as well as limitations with respect to Instrumental Activities of Daily Living (IADLs, or activities such as cooking or shopping). We show that those who are older and in worse health have fewer financial resources as measured in several dimensions. In the second part of our analysis we consider the supply side and discuss how LTC is provided in England. We document the division in financing between public and private sources. We then show the distribution of care across types by age and degree of limitation, highlighting the growing use of both formal home care and nursing homes as individuals age and become more disabled. We discuss the workforce engaged in LTC, focusing on their low level of pay. Finally, in the third part of our analysis, we undertake a full calculation of the cost of LTC in England – including the costs of informal care. This paper is designed to also be a useful first step in highlighting the data available for microeconomic research on LTC in England. However, we also note that one might argue that there is not enough systematically harmonised information available on the way in which each local authority provides, organizes and funds its LTC, to carry out a meaningful microeconomic analysis of such a question in England or the UK.

2. The demand for care: Ageing, disability and well-being of the older population
The primary data for our analyses come from the English Longitudinal Study of Aging (ELSA). The design of ELSA was broadly modelled on the US Health and Retirement Survey (HRS), with biennial measurement of health, functional capabilities demographics, employment, wealth, and information on health conditions and long-term care needs. If a sample member was unable to respond in person, a proxy respondent was asked questions in their place.

We use data from the 2018/19 survey (wave 9) and focus on those aged 65 and older, for which there is a sample size of 4,947 individuals. We use cross-sectional survey weights throughout to correct for systematic non-response to the ELSA survey. Such cross-sectional weights are designed to make the ELSA sample representative of the English non-institutionalised population aged 50 and over in the survey year, but not the total population which includes those in nursing homes and other (communal) institutions. While respondents are still members of the ELSA sample if they become institutionalised, ELSA under-represents this population due to high rates of attrition when entering nursing homes.[2] To account for this problem we use the reweighting procedure described in Appendix A. The reweighted ELSA sample matches the share of the age 65+ population that is institutionalized in nursing and/or residential homes.

As is conventional in the literature, the key measures of functioning we use as indicators of the demand for LTC are self-reported limitations in Activities of Daily Living (ADLs) and in Instrumental Activities of Daily Living (IADLs). We use six ADL measures: walking across the room, dressing, bathing, eating, getting in and out of bed, and using the toilet. In addition, we use five IADLs measures: preparing a hot meal, shopping for groceries, making telephone calls, taking medications, and managing money. As shown in Table 1, about 14% of those age 65+ have difficulties with two or more ADLs, and about 9% have difficulties with at least three. The number of limitations grows with age. For those 85+ almost 37% have difficulty with at least two and 28% at least three ADLs. Table 2 shows the distribution of specific ADLs and IADLS. The most common limitation to IADLs is shopping for groceries (15% report this limitation) and the most common limitation to ADLs is getting dressed (18% report this limitation). Table 3 reports the relationship between limitations and several self-reported measures of subjective well-being. Cells in the table are split by age of the respondent and number of ADL limitations. All indicators of subjective well-being are negatively correlated with the number of limitations. On average, well-being declines after age 85, although this is largely due to the greater number of limitations they face.

We now turn to the question of how these limitations, and hence potential care needs, vary across the distribution of income and wealth. Table 4 reports the distribution of household income and wealth for those 65 and older, and those 85 and older. Both income and wealth are normalized using the OECD-modified equivalence scale, and we present values in 2019 GBPs. Older individuals on average have lower income than those nearing retirement age, although the UK basic state pension (which has increased in generosity in comparison to average earnings in recent years) means that very few retirees live in extreme

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[2] In 2018, for example, individuals in nursing homes represented 1.3% of the over 65 sample in ELSA, whereas recent estimates (for early 2020) from the Office of National Statistics put this fraction at 3.3%. This estimate was calculated by combining information from the 2011 census and the 2016-based population projections for communal establishments. See ONS (2020a) for more details.

poverty. Current retired and soon-to-be retiring generations still receive some means-tested public pension income from the State Earnings Related Pension Scheme. In addition, a large fraction of individuals have private pension income – 80% of all those between aged 50 and the State Pension Age in 2018/19 had some (current or past) private pension entitlements or were already receiving income from such a pension (Banks, Nazroo, Steptoe and Zaninotto, 2019, table E5a, p.168). Homeownership rates are also relatively high in England, and in 2018/2019 primary housing wealth accounted for 59.6% of the total non-pension wealth of the over 65s (authors' calculations from table E3 of Banks, Nazroo, Steptoe and Zaninotto, 2019).

Table 5 shows how the distribution of household income and wealth varies according to the number of reported ADLs. In keeping with the extensive other evidence on the socioeconomic gradient in health, the table shows that those with more ADLs and IADLs usually have lower income and wealth. Each cell in the table reports the share of respondents in an ADL category who are in that row's income or wealth group. For example, of those with 0 ADLs and 0 IADLs, 6.5% have less than half of median income, whereas 11.3% of those with 2 ADLs have less than half of median income. Only 7.3% of the overall sample have less than half of median income since the UK's state pension benefit creates a very flat lower half of the income distribution after retirement, and those with the very lowest household incomes may well be experiencing transitory short-term fluctuations whilst not being particularly disadvantaged. So the 'lowest' income group is both small and rather unusual. From 50% of median income and above the gradient is systematic and large, with those between 50 and 100% of the median being increasingly over-represented in the more disabled groups, and the reverse being true as the income groups get higher. When considering patterns by wealth, which, for this age group, varies more systemically in a way that is related to permanent life-time income, the socioeconomic gradients are more uniformly evident across the whole distribution. For example, among those 65+, 20.7% of those with no ADLs and no IADLs have wealth below half of the median HH wealth – but that rises to 49.2% of those with 2 ADLs.

In the next sections we discuss the care system that individuals with ADL limitations have access to, and the hours (and costs) of the care that they receive.

3. The Long Term Care system in England

Figure 3 shows that in 2018, LTC spending was 1.8% of GDP according to the UK Health Accounts 2018 (ONS, 2020b) and this has been broadly constant over the previous five years. This spending measure includes care for younger disabled people as well as for older people with disabilities and functional limitations. Of this amount, most (1.1% of GDP) was spent on residential long term care facilities (i.e., nursing and care homes) and 0.5% was spent on home health services. The right panel of Figure 3 shows

that if we expand our definition of LTC to include "social care" for IADLs (care such as help with cooking and cleaning) then LTC comprised 2.2% of GDP. We should note that this is only for paid care: we discuss informal care in detail later.

In contrast to the National Health Service (NHS), which provides universal healthcare free at the point of use in England, publicly funded LTC services in England is provided through 152 local authorities, each with their own funding formulas. Individuals who do not qualify for this support must rely on self-funded formal or informal care services. Overall, the public provision of LTC is like the one used in the US. Those with (non-pension) wealth of more than £23,250 are ineligible for local authority funded care, and those with wealth between £14,250 and £23,250 must pay for at least part of their care. Housing wealth is not exempt for those in residential homes (e.g., nursing homes), although it is exempt for the means test for care received at home. Recipients of care are usually charged co-payments based on income with local authorities setting their own charging policy. Most services are supplied by private providers, paid for by the local authority, with recent reforms giving more control to the individual for how and where the budget is spent. Each recipient receives a needs assessment, in which their local authority will create a 'personal budget', which explicitly states the amount of money the local authority will pay towards any care. The recipient can then opt to have this personal budget paid directly to them in the form of a 'direct payment'. This allows a recipient to choose how their allocated money is spent, instead of receiving the care from the local authority's chosen provider. This has allowed recipients to choose their own care worker (paid through the direct payment), which can often be a family member.

The needs-based criteria determining eligibility for LTC are set out on the Care Act 2014, which established a national approach to assessing care needs and eligibility requirements for care (subject to the local authority specific financial means test). These standards state that an individual has an eligible LTC need if they have care and support needs as a result of a physical or mental condition and because of those needs (i) they cannot achieve two or more of a number of outcomes related to daily living, such as dressing or feeding themselves appropriately, keeping themselves safe, maintaining personal relationships, etc. and (ii) their well-being is significantly adversely affected (for more details see the Care and Support (Eligibility Criteria) Regulations, 2015). The somewhat subjective nature of these criteria means that, in practice, different local authorities may interpret and implement the centrally determined rules in somewhat different ways, in addition to having different funding and co-payment rules. They can also apply more generous rules if they so wish. This creates substantial variation across local authorities in availability and quality of care. However, very little substantive data exists on these differences and as such, the possibilities for

serious research on the funding of LTC at the national level, and detailed analyses of policy reforms, is limited.

While most public LTC is provided by local authorities, some care is provided by the central government. Firstly, individuals whose care needs arise from a 'primary health need' may have their health and social care arranged and fully funded by the NHS through the Continuing Healthcare programme. Unlike local authority funding, it is not means tested, and is reserved for individuals with particularly severe, complex, or unpredictable care needs. There is no formal legal definition for eligibility; entitlement is subject to an assessment of whether 'having taken account of all their needs […], it can be said that the main aspects or majority part of the care they require is focused on addressing and/or preventing health needs' (Department of Health and Social Care, 2018). These individuals tend to be less healthy than those receiving care through the local authority. Second, those with daily care and /or mobility needs and their carers may receive cash benefits from the central government budget. The most important benefit for those age 65+ is the Attendance Allowance, where claimants need to be of pension age and entitlement is based on an assessment of the assistance required to undertake various activities of daily living (with higher assessed needs resulting in a larger entitlement). In contrast to local authority funded care, eligibility for Attendance Allowance is not means tested, nor does an individual actually need to be receiving care to claim it – assessment is purely based on care needs not care receipt. While Attendance Allowance is the main benefit for new claimants in the over 65 population with care needs, many still have continuing claims for the other government disability-related benefits if they began claiming before reaching pension age. In 2018, 12% of those above State Pension Age in the UK were claiming Attendance Allowance, and a further 8.4% were claiming either Disability Living Allowance or Personal Independence Payments, with average weekly payments of around £86 (OBR, 2019). Additionally, the Carer's Allowance provides a cash payment payable to adults who have low (less than £120 per week) earnings, are not in full-time education, and spends at least 35 hours a week caring for a person who receives disability benefits.

Individuals that do not qualify for local authority (or NHS) funded LTC must either receive care informally or pay out-of-pocket for that care. Furthermore, higher income people receiving local authority funded care often must make co-payments. As discussed previously, and shown in Table 3, most individuals have a significant proportion their wealth tied up in the value of their home. If this wealth is needed to fund care costs, this can involve selling the property. To help households keep their homes while still alive, a Deferred Payment Agreement can allow a user of local authority co-funded care to delay payment for the cost of their care until a later date (including the option of waiting until death) so that they can avoid selling their home in the meantime. Deferred Payment Agreements are only available to those receiving local authority

funded care, but similar 'equity release' products are available through private sector organisations; however, not much is known about how many individuals use equity release products to fund care.

Using evidence from the Personal Social Services Research Unit's CARESIM model, the Dilnot Commission (2011) estimates that the mean expected future lifetime cost of care for someone age 65 in 2011 is £25,000 for a man and £44,000 for a woman (in 2011 GBPs). However, they also estimate that around a quarter of those adults aged 65 in 2011 will face no significant care costs during the remainder of their life, but around one-in-twenty face costs of more than £150,000. For these individuals, even those with the median level of wealth could use 60-80% of their wealth to pay for these costs. Despite this risk, few individuals have private long-term care insurance, with only approximately 5,000 LTC insurance policies in force in the entire UK. Still, much of the cost of LTC is borne by government programs. Figure 4 shows how this expense is shared across various financing sources. Even without the existence of a true national long-term care insurance program, the public sector is the primary payer for long-term care. Figure 4 reports that the largest source of long-term care financing is the government, accounting for 65% of total spending, with most of the remainder (30%) (of care expenses) being paid out-of-pocket. Charities also contribute 5% to LTC, although this share is larger when the definition of care is expanded to include care for IADLs (social care).

Figure 5 reports the percentage of spending on home health care and residential LTC facilities (e.g., nursing homes) by source. Despite LTC being means tested, the vast majority (83%) of formal home health care in England is financed by government sources (i.e., through local authorities or the NHS Continuing Healthcare programme). The same is true for residential care, but to a lesser extent, with the government paying for 53% of the care. Note that for residential care almost 40% is paid out-of-pocket which means many households face significant financial risk.

Long-term care can be provided either at home or in institutional settings. Table 6 shows the share of people who receive any care either in a nursing home or at home in the form of formal or informal help. Overall, roughly 24% of people ages 65 or over receive some form of LTC, a fraction that rises to 59% of those 85+. Unsurprisingly, the likelihood of care rises in the number of limitations to ADLs and IADLs.

Figure 6 illustrates the breakdown of care type among those receiving care. It shows that for over 65s receiving some form of care, most individuals receive informal home care. Very few (6%) only receive formal home help. Figure 7 shows how the type of care received varies by the number of ADL-limitations. The number of ADLs strongly predicts the type of care received. Among those receiving care with two or

fewer ADLs, over 80% receive only informal care. However, the fraction in residential care (e.g., nursing homes) increases sharply for those with 3+ ADLs. In fact, for those who are 85+ year olds with 3+ ADLs, residential care is the most common type of care receipt.

Figures 6 and 7 show that the most used type of LTC is home care whether formal or informal (or both). There has been a push in recent years for older people to receive care in their own home; in 2018, 61% of age 65+ recipients of public LTC received this form of care (NHS Digital, 2019). Respondents in ELSA are asked whether they required any help in the past month because of any physical, mental, emotional or memory problems. If so, respondents are asked to list up to 35 "informal" (e.g., spouse, daughter) and "formal" helpers (e.g., home care worker, cleaner). Then for each helper, respondents list the number of hours of help provided each week in bands (e.g. "1-4 hours") up to a maximum of "100 hours or more". We take the mid-point of each time band (e.g., 2.5 hours for "1-4 hours") and cap the maximum numbers of hours of help of an individual helper at 100 hours per week. Table 7 shows the distribution of weekly hours of care received (by all helpers) for both formal and informal care, conditional on receiving help. The distribution of care received is skewed. The median number of hours of care received is 7, but the mean is 25 hours and 10 percent of this group receives over 92 hours. Care needs are only somewhat higher for the oldest old. The median number of hours of care for this group is 8, the mean is 29 and the top 10 percent of the distribution receives 100 or more hours of care. Most of the elderly receiving assistance rely, at least in part, on some form of informal care. Not only are the elderly much more likely to receive informal than formal care (as indicated by our discussion of the previous figures and by the sample sizes in Table 7) but those receiving informal care receive more total hours of care. For individuals 65 and over, those receiving formal care on average receive 13 hours per week, and half receive 3 or fewer hours per week, but for those receiving informal care these numbers are 24 hours and 7 hours respectively.

The evidence in this section makes it is clear that although most care recipients receive their care at home, most of the (formal) costs are incurred by those in residential LTC facilities. In the remainder of this section, we document residential LTC services and costs in more detail, before turning to issues of labour costs and labour market issues for care workers whether in the nursing home or formal homecare sector.

Table 8 shows the number of nursing homes (i.e. residential homes with nursing facilities), beds, and residents relative to the overall elderly population in England. Roughly 85% of available beds are occupied at any point in time. England has 0.021 beds per 65+ population, but 0.157 beds per 85+. However, these are not beds exclusively for the aged, and some will be used by the disabled under 65s. Table 9 compares the size of this nursing home sector to residential homes without nursing facilities. Although spending on

residential LTC facilities comprises a large share of GDP, most LTC facilities, housing half of all LTC residents, have no nursing facilities. In many dimensions (beds, residents, percentage of self-versus state funded residents, and size of workforce) the two sectors are similar, although residential homes without nursing facilities are smaller on average.

Figure 8 shows the types of staff for various types of care. In (formal) home care most workers are involved in direct care (e.g., a care worker) and almost none of these workers (1%) are in a regulated profession (e.g., nurses, social workers). The fraction of workers who are in a regulated profession is higher in residential care. However, they still only account for 6% of employment at these care homes and almost all of these are employed in residential homes with nursing facilities (where they represent 13% of employees).

The labour force providing LTC tends to be low skill and tend to receive low pay, although wages in the English labour market are all subject to the UK National Minimum Wage which is high relative to the minimum wage in most European and North American economies (see Giupponi and Machin, 2021, Appendix C1). Unlike in many European and North American countries there are no compulsory registration or qualifications for social care workers[3] although there are voluntary sets of standards (e.g. the Care Certificate launched by the Skills for Care charity in 2015). The UK has a points-based immigration system, which has a 'Skilled Workers' route for occupations listed on a Shortage Occupation List. Currently, social workers, registered nurses and occupational therapists are listed as skilled workers; however, 'care workers' more generally are not designated as such and are hence not eligible for the skilled workers route.

Table 10, which uses data collected by the Skills for Care charity, shows the distribution of skills and formal qualifications across the sector as a whole, split by provider type (panel i) and split by the location of care (panel ii). Almost half of workers in the sector have no formal qualifications, although this fraction is substantially lower in the (very small) part of the sector where care is delivered by a public sector provider. Table 11 shows the earnings of full-time workers in the LTC sector. In keeping with the low skills and qualifications of workers in the sector, the average direct care worker in residential care earns £8.52 per hour, which is only slightly more than the adult minimum wage (£8.21) and about half the economy-wide average wage (£16.99). Once again, consistent with the skills data in Table 10, employees working for public providers have considerably higher pay for all roles.

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[3] The Care Quality Commission (CQC) is the independent regulator of all health and social care services in England. It monitors, inspects, and regulates care homes.

Turning to the informal care 'workforce', Table 12 presents estimates of the total number of individuals providing help to elderly individuals each month at a national level, along with the number of such carers relative to the elderly population and to the population ages 18-64. We derive these measures from self-reports given by older recipients of care. Respondents in ELSA are asked about who their provides care for the individual receiving care, and are also asked to report the age of the carer. Using the sample weights in ELSA, we can use this to calculate the number of elderly carers in the aggregate. We estimate that over four million individuals in England provide care to the 65+ population, which is equal to 12% of the population ages 18-64. Around 76% of those helping someone over age 65 were informal caregivers, with the remainder being formal (paid) carers. The fraction of formal carers is higher when focusing on care to those 85 years old or older.

There are important differences between the set of formal carers and the set of informal carers, which are illustrated in Figure 9. The predominance of women among caregivers is particularly dramatic for formal care workers with 83% percent of formal home care workers being female in comparison to 58% of informal carers. Formal carers are predominantly working age, whereas informal carers much more likely to be older. The proportion of non-white minority ethnic groups employed in the formal care sector is three and a half times higher than that providing informal care. Many of these differences are a natural consequence of the informal care sector being provided within a family and even within a household context as opposed to in the paid labour market. Figure 10 shows the relationships between informal care givers and care recipients and highlights that spouses are the most common informal carer, accounting for 35%, followed by daughters who make up 25% of informal carers. Unsurprisingly, spouses or children account for three-quarters of informal caregivers for older care recipients.

4. The cost of providing Long Term Care

In this section, we calculate the total cost of providing Long Term Care for the age 65+ population in England, pulling together various pieces of evidence on formal care spending (both at home and in institutional settings) and combining it with a measure of the opportunity cost of informal care provision. We are not the first to have done this for England, but our choices of measurement and methodology differ from previous studies since we set out to be internationally comparable with the other papers in this volume.

Table 13 displays the cost of formal care. Multiplying the number of users by the average yearly cost of that form of care reveals that residential care costs £12 billion and formal home health services cost £6.2 billion each year for the 65+ population in England. These amounts are lower than those reported in the

UK Health Accounts (presented in the final column of the table) for two reasons. Firstly, the Health Accounts are for the whole of the UK, not just England. England's population is around 84% of the UK and the age demographics are similar throughout the UK. Secondly, and much more importantly, the amount in the Health Accounts includes the disabled under 65s, who account for around 40% of all LTC spending. Taking these two factors into account our estimates for 65+ spending on formal care in England match the Health Accounts well. To put the £12bn and £6.2bn numbers into context, summing the two and comparing to an estimate of GDP for England (see footnote 5) suggests that this formal care costs around 0.9% of GDP. This number omits certain government payments such as the Carers Allowance which amounts to approximately 0.1% and of GDP, and Attendance Allowance which amounts to around 0.3% of GDP.[4]

Next, we estimate the cost of informal care. We do this in three different ways. The first approach values the time spent caregiving using the wage that the worker could have earned were they engaged in market activity. This approach requires that we have information on hourly wages of all caregivers, yet many caregivers in our survey data are not employed. Additionally, the set of care-givers who are also in paid work is a non-random set, and furthermore, their jobs and wages will presumably be affected, either directly or indirectly, by the constraints associated with, and consequences of, their caregiving. We therefore construct an imputed measure of wages for all informal caregivers. We use employment data from the 2018 Annual Survey of Household Earnings (ASHE) to calculate the probability that an individual is working and, if they are working, the expected wage, conditional on an individual's age (band) and sex. Thus, we estimate the probability that a person works and their wage were they to work for each age-sex cell. We can use these probabilities and predicted wages to impute the (typical) labour market earnings that are being given up when a carer chooses to supply an hour of informal care. Note that implicitly this method will take account of the likelihood that the individual would have been working had they not been caring, as well as the earnings that they might have accrued if they had worked. Using this approach an hour of informal care from an older retired individual will have a low 'cost' since the likelihood that they would have been working would have been low, even if their predicted wage was quite high. This has a substantive impact on our calculations since many of those providing informal care are retired (Figure 9 shows that 58% of informal carers are 65+). In this sense, by assuming that the only cost or 'value' of care is in market earnings foregone, our measure may understate the true cost or value of care received, and therefore should be seen as a lower bound.

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[4] In February 2019 there were 868,000 recipients of Carer's Allowance in Great Britain and the total expenditure in 2019-20 was forecast to be £2.98 billion (Kennedy and Gheera, 2020). In 2018/19 the UK government expenditure on Attendance Allowance was £5.7 billion (OBR, 2019).

In a second strategy we add some value to the hours of informal care where the carer is predicted not to have been working. Here we assume that carers get paid their expected wage for the predicted hours they would work (as in the first strategy) and get paid the average formal homecare market wage for the hours of care that we predict they would not be working in. The average care worker hourly pay is £8.62, which is only half of the expected pay of the carers (£16.03).

Finally, in a third strategy we make the same assumptions as the second strategy, but instead of assigning a value of the average care worker hourly pay we assign the cost that the recipient would need to pay to buy an hour of care in the paid formal homecare market. This cost has been estimated by Curtis and Burns (2018) to be £22.37 per hour (in 2019 GBPs). Note this full economic cost is much larger than the mean wage for workers in this sector (£8.62), since the cost of providing care takes into account paid vacation and sick leave, as well as other costs such as administration overheads, travel costs, payroll taxes and pension contributions. It is not obvious whether the wage or the full cost is the best measure to use for capturing the economic cost to families. Some of these costs, such as vacation and pension contributions, show that the true compensation paid to care workers is greater than the mean wage paid to these workers. For other costs, such as taxes and administration, represent transaction costs that need not be paid if provided by a family member.

The results of these three methods are illustrated in Table 14. We calculate that in 2018 a total of 2.49 billion hours of informal care were provided. The total cost of this informal care in 2018 is estimated to be between £13.4bn and £48.7bn depending on the valuation method used. To put these sums into context they equate to an estimate that informal care for the elderly cost the English economy a sum equivalent to between 0.7% and 2.5% of English GDP.[5]

Table 15 aggregates the estimates from the previous two tables — expenditures on formal care and implicit expenditures on informal care—to provide a national estimate of total long-term care spending, and provides an additional breakdown by public and private. Our estimates of the total cost of care for English adults aged 65 and over in 2018 range between £32 billion and £67 billion, which is a sum equivalent to between 1.6% and 3.5% of English GDP. Within this total, the costs and value of informal care are at least

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[5] The Office for National Statistics does not produce GDP data broken down by nations within the UK so English GDP data are not available. ONS statistics on Gross Value Added suggest that 86% of UK Gross Value Added in 2018 is produced in England, (see ONS 2022) so we estimate English GDP by applying this ratio to UK GDP data for 2018 (£2,218bn) prior to converting to 2019 GBPs.

equal to the costs and value of formal care provided, and potentially up to much larger – making up between 42% and 73% of the total depending on which basis is used.

Our strategy costs out all care provided for the 65+ population. However, we should note that there is some ambiguity in the distinction between public and private care. We have categorized all informal care as private care but some of this care is publicly subsidized through the Carer's Allowance. Expenditure from the government benefit Carer's Allowance, which compensates informal carers, and amounts to £2.98bn per annum, is not included in this table. In this table, hours of those providing informal care and receiving the Carer's Allowance are valued using the three different approaches listed in the table. That care is counted as private informal care. Since their hours (and the implicit value of that care) are captured in the table, we do not include the Carer's Allowance so as to not double count these informal care hours. This means that the 'private' component of costs might be overstated, although even in our most conservative estimate of informal care Carer's Allowance would account for only a modest proportion of the cost. The broad message, however is not dependent on this assumption. Once one includes informal care in the total costs of calculations it becomes clear that by far the lion's share of the costs of care – between 60% and 81% of the total – are borne by private individuals as opposed to by government.

5. Conclusions

This paper brings together evidence on the current state of demand and supply of LTC in England using both new and existing data sources. We show that ADLs and IADLs measures which capture the need for care, are decreasing in wealth and increasing in age, and conditional on ADLs and IADLs the demand for, and use of LTC, is increasing in age. On the supply side the formal system (taking residential and formal home care together) is organised locally, supplied by private providers but with a mix of roughly two thirds public funding and one third private funding. The overall size of the formal care sector for those aged 65+ (at around one percent of GDP) is small compared to the implicit size of the informal care services which are provided by (predominantly) families to help meet the care needs of their elderly and more dependent members, which we estimate to be between 0.7% and 2.5% of GDP.

In many ways England is similar to most other developed economies in Europe and Northern America. And as such the underlying policy pressures and policy debates are also similar. There are three particular issues driving the need for policy change that have been focussed on in the English LTC debate. The first is the affordability of even the current system in the face of demographic trends. This has been exacerbated in recent years by the decade of low economic growth and fiscal austerity from 2010 through to the start of the Covid-19 pandemic which saw cuts in LTC care spending, with real spending lower in 2019 than in

2011. This fiscal austerity led to reductions in the fees paid by local authorities to providers and falling number residential home beds per older person in the population, with supply struggling to match the growing needs of the population over the past decade. Looking forward, the increasing size of the 65+ population is well known, and we are already well into the period where these numbers are increasing. What hasn't happened yet, but is approaching rapidly, is the rapidly increasing numbers of 85+ individuals that is forecast to occur from 2030 to 2050 which, given our data on the age-profile of ADL limitations, will have acute effects on the demand for LTC.

The second issue driving the narrative surrounding the need for policy change is the fact that, as quantified by our estimates in section 4 of this paper, the current system already places a high (and often unmeasured) burden of informal care on many families and/or exposes individuals to potentially very high out-of-pocket LTC costs. This burden will only rise rapidly with the ongoing ageing of the population and forecast increase in the fraction in the 85+ groups going forwards, and particularly so if the formal LTC system is not reformed to allow it to keep up with increasing demographic needs.

The third issue in the policy debate relates more to distributional issues, as opposed to the aggregate issues which been the focus of most of the discussion in this paper. The current system offers limited protection to anyone other than the least wealthy in society. Whilst the wealthiest in society may be able to provide privately for any formal LTC needs, the large and uncertain costs associated with potentially long stays in nursing homes mean that this care may be financially well beyond those in the middle of the wealth distribution.

Given the funding of LTC, individuals must exhaust their personal savings (and other assets) before they receive much in the way of public assistance. Economists generally see it as socially optimal to pool financial risk to insure those who face the risk of costs. The current system pools risk, but provides incentives to run down their wealth which economists do not see as socially optimal. Evidence from the United States looking at Medicaid, which has many similarities to the LTC system in the England, shows that most individuals (even the wealthy) value these systems more than they cost due to the risk pooling that is provided (De Nardi et al, 2016). However, there currently is little systematic analysis all the possible funding options.

In England, as in the United States, the market for private LTC insurance is tiny. There is an active literature that attempts to disentangle the reasons for the small LTC market (Braun et al., 2019). Some have argued that the presence of public insurance may crowd out the private insurance market – as those who may have otherwise got private insurance instead opt for the public insurance (Brown and Finkelstein, 2007) and

because of the difficulties of operating private insurance markets in situations with the possibility of catastrophic costs.

Better insurance against catastrophic costs is not the only reason to bring in reforms. Advocates argue that a more generous LTC system may reduce healthcare costs for the NHS.[6] This is because when LTC is lacking, it can result in more frequent, and potentially longer, hospital visits. And the burden of informal care, which has to substitute for the lack of formal care, tends to fall disproportionately on women which has distributional and welfare implications, as well as potentially resulting in aggregate productivity losses through the misallocation of talent and skills in the economy.

For all the above reasons there has been much debate around reforms of LTC in England over previous decades, but little action until recently. The main proposals stem from the 2011 Dilnot commission, which recommended a fixed lifetime cap on social care charges and a more generous means test. The current proposal, initially planned to take effect from October 2023[7], is for a lifetime cap of £86,000 and an increase in the upper asset limit above which individuals are not eligible for local authority support towards their care costs (the means test) from £23,250 to £100,000. This reform will help to insure against the risk of catastrophic costs and, it is hoped, will create the right conditions for a private LTC insurance market to exist (to insure costs below the cap). But the proposed changes will not fully insure against catastrophic costs as 'hotel costs' (for example, food and accommodation) of nursing and other residential homes – which tend to be very large – are not included in the cap. Furthermore, by reducing the effective cost of residential home care, it may increase use of that care, further increasing the cost of the program (although then potentially reducing the costs, and burden, of informal care).

The full medium and long run fiscal implications of this need to be worked through, but even then, the current fragmented nature of LTC on the supply side due to variation across local authorities, coupled with the lack of any systematic national level data on the various local authorities specific arrangements for eligibility, pricing and means testing, presents difficult challenges for those wanting to undertake any detailed analysis of the aggregate or distributional consequences of this (or any other LTC) reform. One major policy agenda for England, and the UK more generally, should be the assembly and release of better

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[6] Evidence on this is mixed. For example, Crawford et al. (2021) estimate the impacts of cuts to LTC spending in England, and find only modest impacts on NHS hospital spending. However, Martin et al. (2021) find evidence of impacts on mortality.

[7] This was to be funded by an additional Health and Social Care levy of 1.25% on National Insurance contributions which the Conservative government briefly led by Liz Truss subsequently announced would be repealed. The levy was projected to raise £12bn, and the consequences of its repeal was that in the Autumn Statement of November 2022 the next Conservative government, led by Rishi Sunak, postponed the implementation of the Dilnot review proposals for a further two years until October 2025.

data on geographical differences in the funding and supply of formal LTC, such that any analysis of future reform options can be as informed as is possible in other areas of equal economic importance, such as pensions and healthcare. At present the microeconomics and macroeconomics of LTC in England are relatively understudied in any detailed granular way and this is going to become an increasingly significant gap in the evidence base as the importance of LTC provision grows.

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Figure 1: Percentage of population ages 65 or older, England and UK, 1960-2060
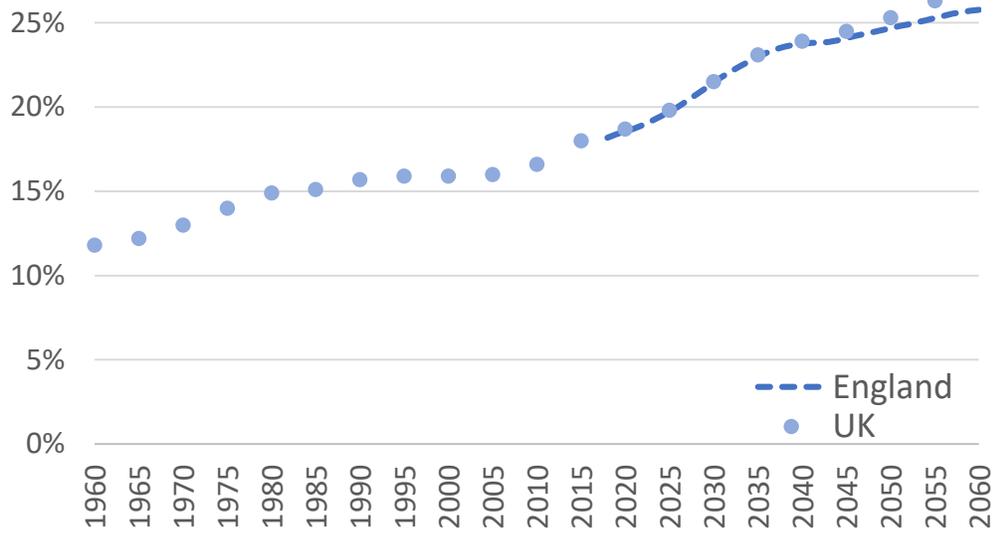
Source: UK Data (Historic and projected) from World Population Prospects (2019). England data projections from ONS Population Projections,
https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/bulletins/nationalpopulationprojections/2018based

Figure 2: Percentage of 65+ population that is age 85 or older, England, 1960-2060

Table 1: Share with ADLs/IADLs by Age, England, 2018

	65+	85+
0 ADLs & 0 IADLs	0.712	0.385
0 ADLs & 1+ IADLs	0.045	0.105
1 ADL	0.102	0.140
2 ADLs	0.047	0.096
3 ADLs	0.031	0.081
4 ADLs	0.021	0.048
5 ADLs	0.018	0.045
6 ADLs	0.025	0.101
Any ADLs	0.243	0.511
Any IADLs	0.185	0.510
Any ADLS or IADLs	0.288	0.615
Observations	*4,947*	*540*

Source: Data are from ELSA Wave 9 (2018). Weights are used so that the proportion of individuals in nursing homes match national aggregates (see Appendix A). ADLs include walking across room, dressing, bathing, eating, going to bed, and using the toilet. IADLs include using a telephone, managing money, taking medications as prescribed, shopping for groceries, and cooking a hot meal.

Table 2: Distribution of Limitations with Specific ADLs/IADLs, England, 2018

	65+ All	65+ Conditional	85+ All	85+ Conditional
i) IADLs:				
IADL – Use a Phone	0.068	0.370	0.250	0.488
IADL – Manage Money	0.083	0.446	0.309	0.605
IADL – Take Meds as Prescr.	0.071	0.382	0.249	0.486
IADL – Shop for Groceries	0.148	0.799	0.435	0.850
IADL – Prepare a Meal	0.097	0.522	0.316	0.618
Observations	4,943	747	538	237
ii) ADLs:				
ADL – Use the Toilet	0.072	0.295	0.205	0.401
ADL – Get Dressed	0.182	0.749	0.404	0.789
ADL – Take a Bath	0.141	0.579	0.389	0.759
ADL – Walk Across a Room	0.070	0.286	0.225	0.440
ADL – Eat	0.049	0.203	0.148	0.289
ADL – Get In/Out of Bed	0.095	0.392	0.231	0.450
Observations	4,943	1,051	538	242

Source: Data are from ELSA Wave 9 (2018). Weights are used so that the proportion of individuals in nursing homes match national aggregates (see Appendix A). Column 1 shows the share of the sample that report having difficulty with each activity, while Column 2 shows the share of people with at least 1 IADL (panel i) or at least 1 ADL (panel ii) who report having difficulty with each activity.

Table 3: Well-Being for those 65+ and 85+ by ADL Limitations, England. 2018

	65+	65+ with 3+ Limitations	85+	85+ with 3+ Limitations
Reports good or better health status	0.703	0.225	0.582	0.310
Satisfied with life	0.659	0.376	0.608	0.398
Very satisfied with life	0.161	0.086	0.144	0.093
Depressed Much of Time	0.118	0.301	0.176	0.241
Observations	4,708	429	473	121

Source: Data are from ELSA Wave 9 (2018). Weights are used so that the proportion of individuals in nursing homes match national aggregates (see Appendix A). This table is directly comparable to US Table 3, however as ELSA does not contain a question about retirement satisfaction, instead we report 'life satisfaction'.

Table 4: Income and Wealth Distribution, England, 2018

	Income		Wealth		Wealth (Excl. Housing)	
	65+	85+	65+	85+	65+	85+
5th Percentile	8,360	7,328	559	1,524	0	136
10th Percentile	9,727	8,620	5,390	7,119	814	1,302
25th Percentile	13,039	11,419	113,563	58,019	7,051	7,119
50th Percentile	17,860	15,253	246,109	201,362	37,222	20,340
75th Percentile	25,716	20,752	436,285	358,701	132,208	71,189
90th Percentile	36,268	29,213	738,328	553,611	347,292	187,045
95th Percentile	44,729	35,772	1,019,107	777,991	558,662	358,701
Mean	22,089	18,422	351,463	265,257	139,594	87,198
Observations	*4,907*	*539*	*4,907*	*539*	*4,907*	*539*

Source: Data are from ELSA Wave 9 (2018). Weights are used so that the proportion of individuals in nursing homes match national aggregates (see Appendix A). Income is net of taxes. Wealth is total net (non-pension) wealth and includes housing. All amounts are normalized using the OECD-modified equivalence scale and reported in 2019 GBPs.

Table 5: Income and Wealth Distribution by Limitations for 65+ Population, England, 2018

|	0 ADLs & 0 IADLs	0 ADLs & 1+ IADLs	1 ADL	2 ADLs	3+ ADLs	Total
Panel 1: Income						
<50% Median HH Income	0.065	0.118	0.101	0.113	0.069	0.073
50-100% Median HH Income	0.393	0.520	0.492	0.495	0.527	0.426
100-150% Median HH Income	0.285	0.252	0.252	0.278	0.228	0.274
150-200% Median HH Income	0.135	0.064	0.092	0.071	0.111	0.122
200%+ Median HH Income	0.123	0.045	0.064	0.042	0.064	0.104
Panel 2: Wealth						
<50% Median HH Wealth	0.207	0.393	0.347	0.492	0.444	0.265
50-100% Median HH Wealth	0.230	0.273	0.228	0.234	0.257	0.234
100-150% Median HH Wealth	0.189	0.183	0.171	0.159	0.157	0.183
150-200% Median HH Wealth	0.124	0.063	0.102	0.030	0.051	0.107
200%+ Median HH Wealth	0.251	0.088	0.153	0.086	0.091	0.211
Total	0.712	0.045	0.102	0.047	0.095	
Observations	*3665*	*203*	*488*	*212*	*339*	*4907*

Source: Data are from ELSA Wave 9 (2018). Weights are used so that the proportion of individuals in nursing homes match national aggregates (see Appendix A). ADLs include walking across room, dressing, bathing, eating, going to bed, and using the toilet. IADLs include using a telephone, managing money, taking medications as prescribed, shopping for groceries, and cooking a hot meal. Each cell reports the share of respondents in the respective ADL category who are in that row's income group. The median household income and wealth are for the 65+ population, calculated in the ELSA. If individuals did not have their income/wealth reported in wave 9, their last reported values were used. The median, normalized using the OECD-modified equivalence scale and reported in 2019 GBPs, is roughly £17,900 per year for income and £246,000 for wealth.

Figure 3: Share of GDP spent on long-term care, UK, 2013-2018
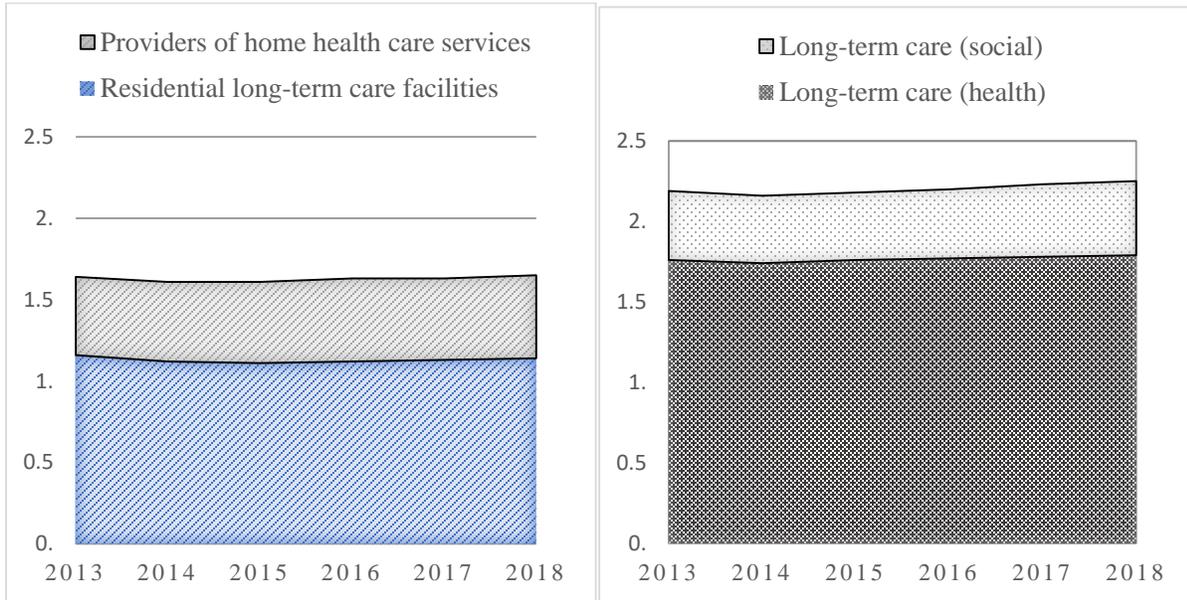
Source: Eurostat. Statistics are for whole of UK and include all ages, not just those age 65+. Residential long-term facilities are categorised as healthcare providers under code HP2. Providers of home health care services are categorised as healthcare providers under code HP35. Health-related LTC (HC3) relates to services where care ordinarily includes help with activities such as bathing, dressing, and walking. Social LTC (HCR1) refers to assistance-based services, such as shopping, cooking, and managing finances.

Figure 4: Percent of LTC Financing by Source, UK, 2018

Total LTC (Health only)

- Out-of-pocket
- Non-profit institutions serving households (NPISH)
- Government schemes

30%

5%

65%

Total LTC (Health and Social)

- Out-of-pocket
- Non-profit institutions serving households (NPISH)
- Government schemes

26%

10%

64%
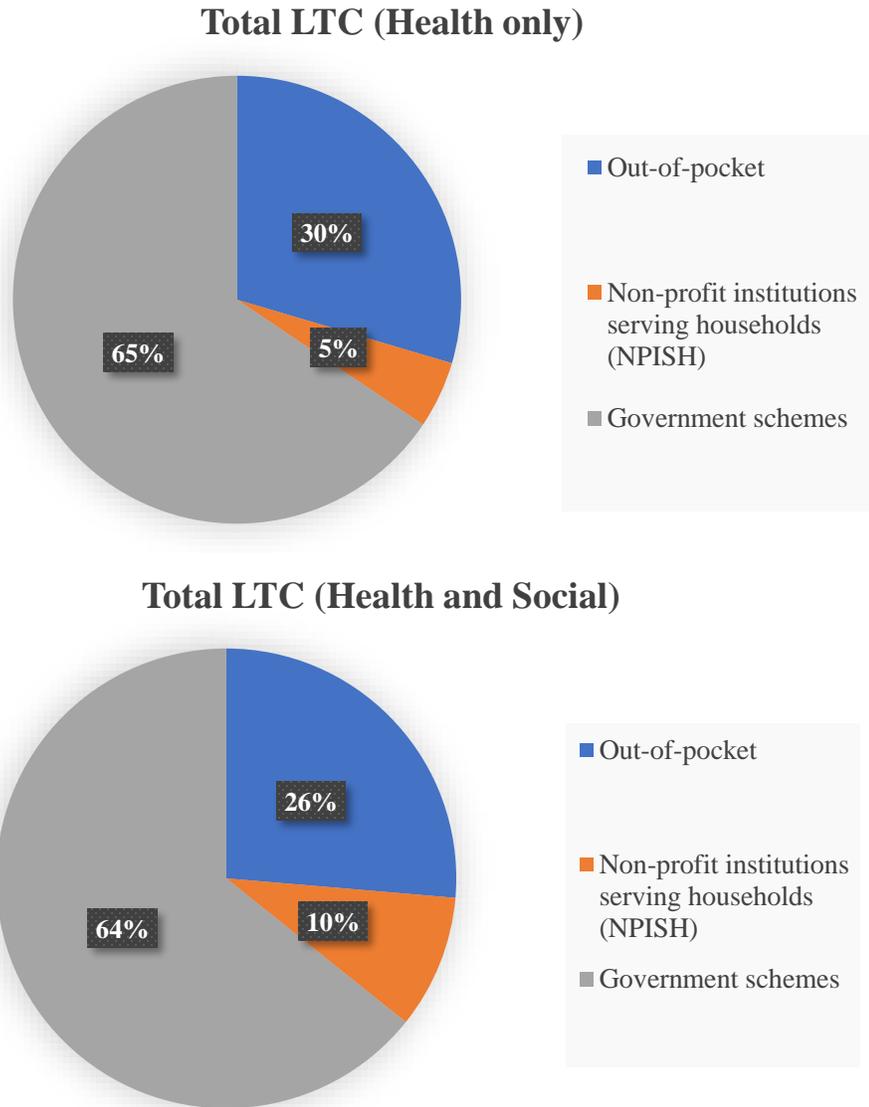
Notes: UK Health Accounts, 2018. Statistics are for whole of UK and include all ages, not just those age 65+. Health-related LTC (HC3) relates to services where care ordinarily includes help with ADLs such as bathing, dressing, and walking. Social LTC (HCR1) refers to assistance-based services for IADLS, such as shopping, cooking, and managing finances. Non-profit institutions serving households (NPISH) includes grants from government health bodies and local governments.

Figure 5. Percent spent on home health care and nursing care facilities, by source of funds, England, 2018

Home health services

- Out-of-pocket
- Non-profit institutions serving households (NPISH)
- Government schemes
- Voluntary health insurance

14%
1%
2%
83%

Residential LTC Facilities

- Out-of-pocket
- Government schemes
- Non-profit institutions serving households (NPISH)

7%
40%
53%
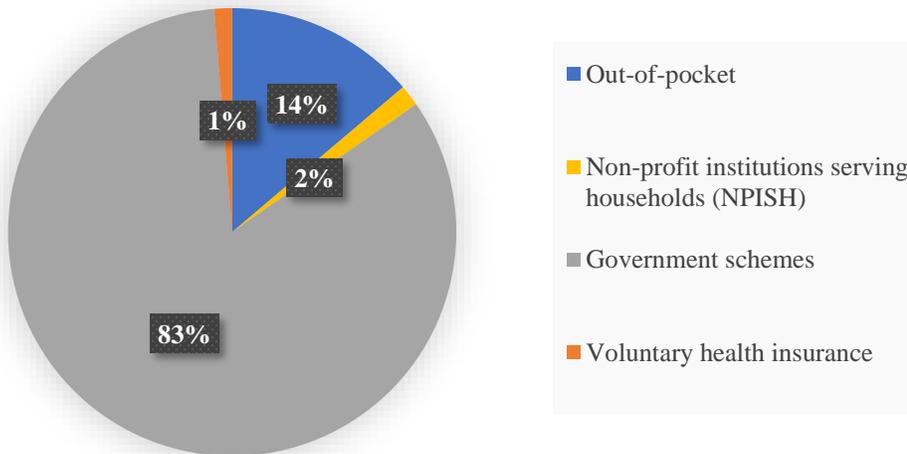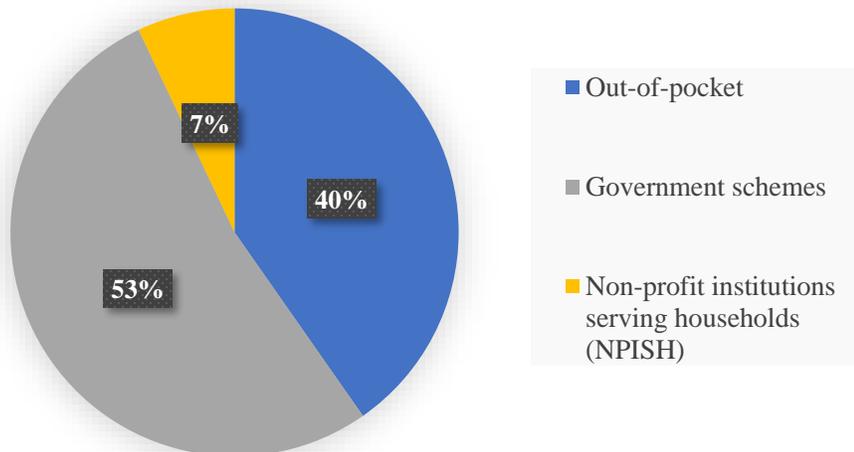
*Note: Data are for the year 2018. Health Care Accounts Data. Non-profit institutions serving households (NPISH) includes grants from government health bodies and local governments. Residential long-term facilities are categorised as healthcare providers under code HP2. Providers of home health care services are categorised as healthcare providers under code HP35. This figure is directly comparable to US Figure 6.*

Table 6: Any Care by Age and ADL, England, 2018

	65+	85+
Full Sample	0.24	0.59
0 ADLs, 1+ IADL	0.67	0.82
1 ADL	0.48	0.71
2 ADL	0.67	0.78
3+ ADL	0.89	0.94
Observations	*4,947*	*540*

Source: Data are from ELSA Wave 9 (2018). Weights are used so that individuals in nursing homes match national aggregates. The care variable is defined as either being in a nursing home or having received either formal or informal home help. Respondents in ELSA are asked the number of hours of help in the past month the required due to any physical, mental, emotional or memory problems. Sample includes only respondents who reported receiving help. This table is directly comparable to US Table 10.

Figure 6: Type of Care Received by Age, England, 2018
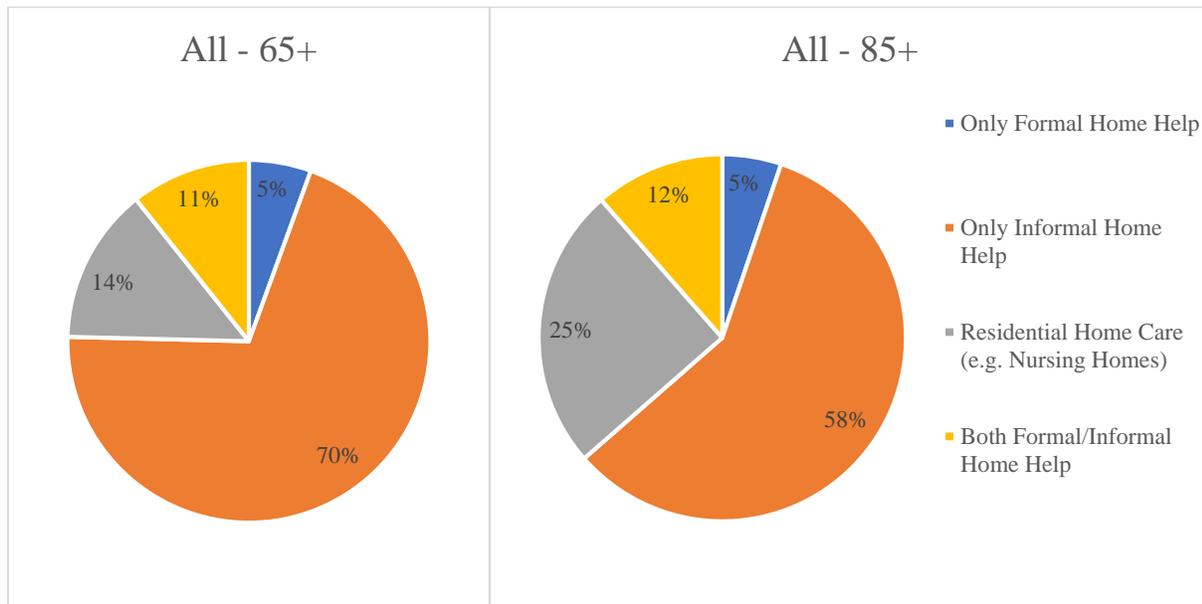
Source: Data are from ELSA Wave 9 (2018). Weights are used so that individuals in nursing homes match national aggregates. Sample is restricted to respondents in a nursing home or having received either formal or informal home help. Respondents in ELSA are asked the number of hours of help in the past month the required due to any physical, mental, emotional or memory problems. Sample includes only respondents who reported receiving help. This figure is directly comparable to US Figure 7.

Figure 7: Type of Care Received by Age and Limitations, England, 2018

Type of Care by Limitations - 65+

Legend:
- Only Formal Home Help
- Only Informal Home Help
- Residential Home Care (e.g. Nursing Homes)
- Both Formal/Informal Home Help

X-axis: 1 IADLs, 0 ADLs | 1 ADL | 2 ADL | 3+ ADLs

Type of Care by Limitations - 85+

Legend:
- Only Formal Home Help
- Only Informal Home Help
- Residential Home Care (e.g. Nursing Homes)
- Both Formal/Informal Home Help

X-axis: 1 IADLs, 0 ADLs | 1 ADL | 2 ADL | 3+ ADLs
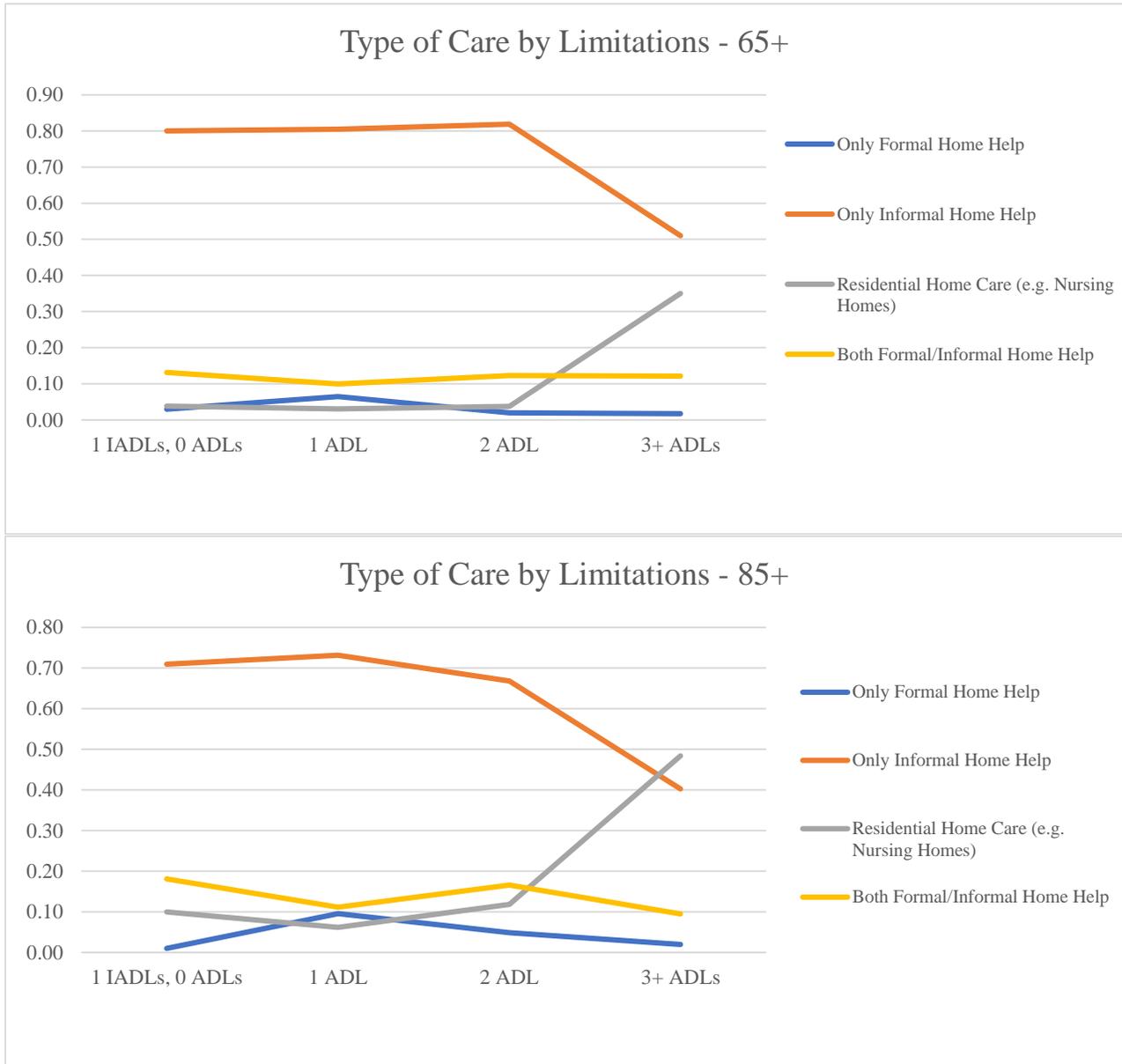
Source: Data are from ELSA Wave 9 (2018). Nursing home care refers to any residential care homes. Weights are used so that individuals in nursing homes match national aggregates. Sample is restricted to respondents in a nursing home or having received either formal or informal home help. Respondents in ELSA are asked the number of hours of help in the past month the required due to any physical, mental, emotional or memory problems. Sample includes only respondents who reported receiving help. This figure is directly comparable to US Figure 8.

Table 7: Distribution of Weekly Hours of Home Help Received by Type, England, 2018

	65+			85+		
	Any	Formal	Informal	Any	Formal	Informal
5th Percentile	1	1	1	1	1	1
10th Percentile	1	1	1	1	1	3
25th Percentile	3	1	3	3	1	3
50th Percentile	7	3	7	8	3	7
75th Percentile	27	15	27	36	17	30
90th Percentile	92	42	82	100	42	100
95th Percentile	103	75	100	113	75	105
Mean	25	13	24	29	15	27
% with:						
1 Hour per Day or Less	0.54	0.70	0.55	0.48	0.64	0.51
5 Hour per Day or More	0.22	0.07	0.20	0.25	0.09	0.19
Observations	*962*	*205*	*882*	*243*	*66*	*219*

Source: Data are from ELSA Wave 9 (2018). Sample is restricted to respondents who received either formal or informal home help. Respondents in ELSA are asked the number of hours of help in the past month the required due to any physical, mental, emotional or memory problems. This table is directly comparable to US Tables 6 and 11.

Table 8: Number of nursing homes, beds, and occupancy rate, England. 2020

|	England, 2020
Residential homes with nursing facilities	4,393
Beds	222,959
Pop 65+	10,505,000
Beds per pop 65+	0.021
Pop 85+	1,417,000
Beds per pop 85+	0.157
Nursing home residents	189,054
Occupancy rate	85%

Source: Population data from ONS. Number of residents from ONS, Care homes and estimating the self-funding population, England: 2019 to 2020, Table 11. Number of beds from Public Health England, https://fingertips.phe.org.uk/profile/end-of-life/data. Additional data from Skills for Care adult social care workforce estimates 2020/21. Estimates of beds and residents are pre-covid. Number nursing homes is from CQC directory (26 February 2020), with nursing homes being counted as having the service type "Nursing Home". This table is directly comparable to US Table 12.

Table 9: Residential Care, England, 2020

	England, 2020
Residential homes with nursing facilities	
Number	4,393
Beds	222,959
Residents	189,054
% Self-funded residents	35.9
% State funded residents	64.1
Residential homes without nursing facilities	
Number	11,140
Beds	234,336
Residents	202,873
% Self-funded residents	37.4
% State funded residents	62.6
Workforce size	
Residential homes with nursing facilities	295,000
Residential homes without nursing facilities	305,000
All Residential	675,000
% Direct Care	68
% Regulated profession (e.g., nurses)	6
% Managerial / supervisory	7
% Other	19

Source: Number of residents from ONS, Care homes and estimating the self-funding population, England: 2019 to 2020, Table 11. Number of beds from Public Health England, https://fingertips.phe.org.uk/profile/end-of-life/data. Additional data from Skills for Care adult social care workforce estimates 2020/21. Note, state funded means that some of the cost is paid by the state, but the resident may still have to make contributions. Estimates of beds and residents are pre-covid. Number of care and nursing homes is from CQC directory (26 February 2020), with nursing homes being counted as having the service type "Nursing Home" and care homes having the service type "Residential Home". Workforce size estimates are for 2018/19 and come from Skills for Care's adult social care workforce estimates 2018/19, Tables 2 and 3.1. Total job numbers in each column have been rounded to the nearest thousand. "All Residential" includes adult placement homes; care homes with nursing; care homes without nursing; sheltered housing; and other adult residential care services. In 2019 the size of total workforce aged 16 and over in England is estimated at 27.9 million based on LFS data.

Figure 8. Distribution of staff types at facilities, England, 2019
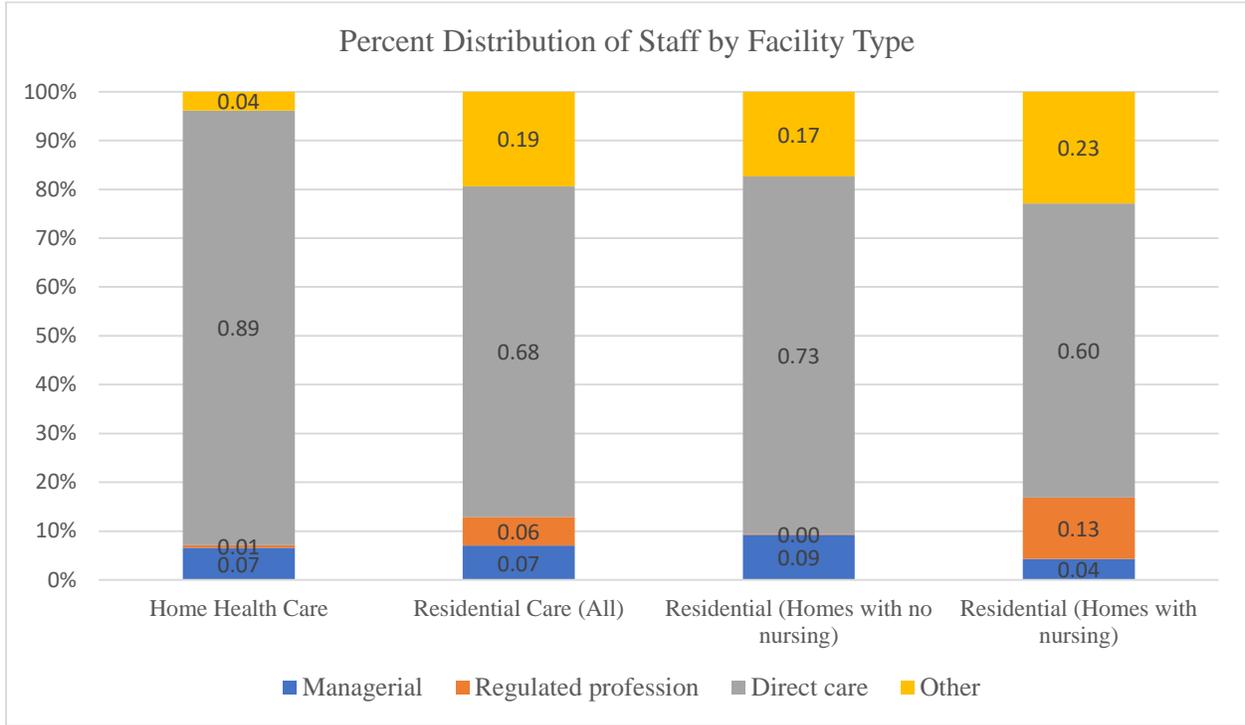
Percent Distribution of Staff by Facility Type

	Home Health Care	Residential Care (All)	Residential (Homes with no nursing)	Residential (Homes with nursing)
Other	0.04	0.19	0.17	0.23
Direct care	0.89	0.68	0.73	0.60
Regulated profession	0.01	0.06	0.00	0.13
Managerial	0.07	0.07	0.09	0.04

■ Managerial ■ Regulated profession ■ Direct care ■ Other

Managerial: middle- and first-line managers, registered managers, supervisors and managers and staff in care-related but not care-providing roles. *Regulated professions:* social workers, occupational therapists, registered nurses, allied health professionals and other regulated professions. *Direct care:* senior care workers, care workers, community support and support/outreach workers and other care-providers. *Other roles:* administrative or office staff not care-providing, ancillary staff not care-providing and other non-care-providing job roles. This figure is directly comparable to US Figure 9.

Table 10: Qualifications held in Social Care by Sector

	All	*i) by provider type*			*ii) by location of care:*		
		Public	Private	Direct payment recipients	Residential	Home Help	Other
Total jobs	1,515,000	112,000	1,260,000	145,000	675,000	685,000	151,000
Care certificate status							
Achieved	19%	4%	19%	30%	13%	27%	12%
In progress	19%	7%	21%	5%	20%	20%	9%
Not started	62%	89%	59%	65%	67%	53%	80%
Highest relevant qualification:							
None	49%	33%	49%	61%	48%	52%	43%
Entry or level 1	1%	1%	1%	1%	1%	2%	1%
Level 2	21%	20%	23%	11%	22%	22%	15%
Level 3	18%	16%	19%	16%	20%	17%	17%
Level 4 or above	10%	29%	8%	10%	9%	7%	24%

Notes: There are no mandatory qualifications to work in the social care sector in England. Data from Skills for Care's adult social care workforce estimates 2018/19, Tables 7.1 and 7.2. Total job numbers in each column have been rounded to the nearest thousand. The Care Certificate is an agreed set of standards that define the knowledge, skills and behaviours expected of specific job roles in the health and social care sectors. Beyond the care certificate there are six qualifications for adult social care, ranging from Level 1 to Level 5. The information in the table refers to the adult social care sector as those 1.52 million jobs in local authorities, the private/independent sector and jobs working for direct payment recipients. The 'other' column in the location of care includes some forms of day care and other community-based services. Those working in the NHS are not included in these workforce estimates.

Table 11. Pay for full-time care workers at nursing facilities and in home health care, England, 2018/19

| Occupation titles	Mean hourly wage		
	Private	*Public*	*All*
i) Residential homes (with or without nursing)			
Managerial	13.97	16.37	14.06
Regulated profession	15.95	19.10	15.98
Direct care	8.47	10.22	8.52
Other	8.69	9.55	8.71
ii) Home Health Care Industry			
Managerial	13.48	16.65	13.63
Regulated profession	15.66	18.82	16.34
Direct care	8.74	10.36	8.80
Direct payment recipients	--	*9.43*	*9.43*
Other	9.55	11.44	9.66
iii) All care sector, by role:			
Senior management	17.53	42.24	18.60
Registered manager	16.15	20.57	16.31
Social worker	10.30	18.82	18.37
Occupational therapist	16.41	18.59	18.19
Registered nurse	16.07	18.90	16.09
Senior care worker	9.32	12.54	9.42
Care worker	8.55	10.30	8.62
Support and outreach	8.93	12.30	9.70
<u>*iv) All industries*</u>			
All employees	16.61	18.13	16.99
Men	17.95	20.42	18.39
Women	14.25	16.81	15.21
Minimum Wage (Age 25+)	8.21	8.21	8.21
Minimum Wage (Age 21-25)	7.70	7.70	7.70
Minimum Wage (Age 18-20)	6.15	6.15	6.15

Source: Hourly pay data for panels (i)-(iii) are from Skills for Care's weighted workforce estimates, 2018/19, Table 6.2. The 'All' column for these panels has been calculated as a weighted average of the hourly pay and number of jobs in each row. Direct payments are cash transfers from the local authority to the recipient of care, allowing them to choose and pay a carer directly. Data for hourly pay (gross) for all industries (panel iv) is from ASHE (2018) tables 14.5a and 13.5a. The Minimum Wage is from April 2019. Amounts are all in 2019 GBPs. Managerial: middle- and first-line managers, registered managers, supervisors and managers and staff in care-related but not care-providing roles. Regulated professions: social workers, occupational therapists, registered nurses, allied health professionals and other regulated professions. Direct care: senior care workers, care workers, community support and support/outreach workers and other care-providers. Other roles: administrative or office staff not care-providing, ancillary staff not care-providing and other non-care-providing job roles. This table is directly comparable to US Table 15.

Table 12: Home Care Provision – Population Estimates, England, 2018

	65 Plus	85 Plus
Formal Helpers - ADL/IADLs	973,216	408,562
Relative to 65+/85+ Population	0.10	0.34
Relative to 18-64 Population	0.03	0.01
Informal Helpers - ADL/IADLs	3,153,206	932,492
Relative to 65+/85+ Population	0.31	0.77
Relative to 18-64 Population	0.09	0.03
All Helpers - ADL/IADLs	4,126,422	1,341,054
Relative to 65+/85+ Population	0.41	1.11
Relative to 18-64 Population	0.12	0.04
Observations	4,895	501

Notes: Authors' calculations based on data are from ELSA Wave 9 (2018). Respondent weights are used for all calculations. Respondents in ELSA are asked the number of hours of help in the past month the required due to any physical, mental, emotional or memory problems. The estimates in this table are calculated by multiplying the mean number of helpers in each group by the population size from the ONS (i.e., the size of the non-care home for the 65+ and 85+ populations are 10,178,394 and 1,210,416, respectively). The 16-64 non-care home population is 35,149,297. This table is directly comparable to US Table 16.

Figure 9: Demographic composition comparison of Formal and Informal Caregivers. England, 2018
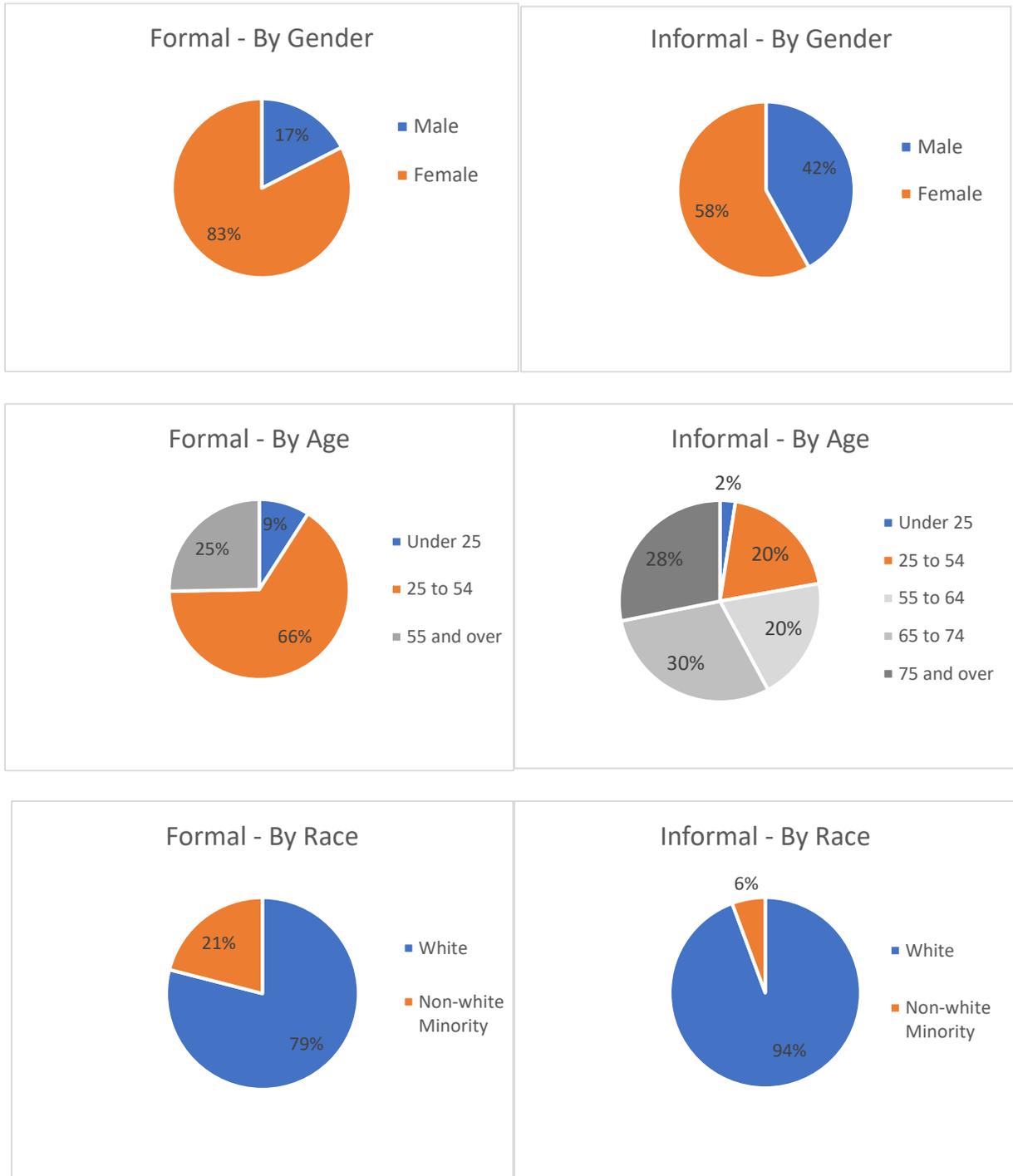
Figure 10: Informal Caregivers by Relationship to Care Recipient. England, 2018

Informal - By Relationship

- Spouse — 35%
- Son — 15%
- Daughter — 25%
- Grandchild — 8%
- Other Relative — 5%
- Unpaid Non-Relative — 12%
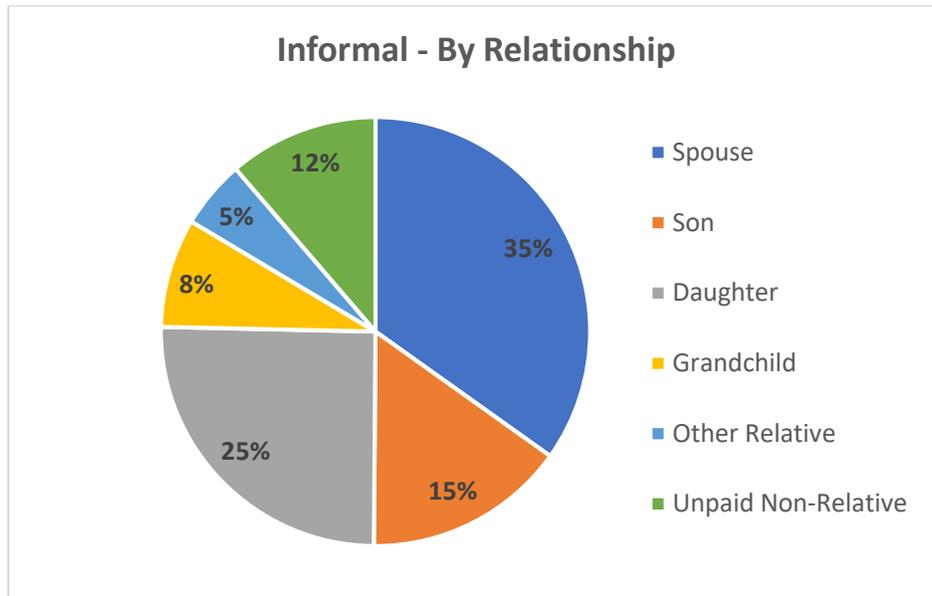
Notes: Informal care data comes from ELSA Wave 9 (2018). Respondent weights are used for all calculations., with respondent weights for the person being helped used in all calculations. Respondents are asked about their relationship to the helper. The total sample size of informal helpers is 1,306. This figure is directly comparable to US Figure 11.

Table 13: Formal care costs, annual, England, 2018

	Age 65+ Population, England			All ages, UK
	Number of users	Weekly Cost (£)	Total (£ bn)	Total Cost (£ bn)
Residential Care (Nursing homes)	348,832	661	12.0	24.9
Home health services (Formal)	406,904	291	6.2	11.1

Notes: Weekly cost of £661 for residential care taken from NHS Digital (2018). The number of over 65s in residential care is taken from aggregate statistics. Weekly costs of home health is calculated as £22.37 multiplied by an average of 13 hours help per week taken from ELSA. The number of users of formal home help is estimated from ELSA. Total Cost for all ages in the UK comes from the Health Accounts 2018. All amounts have been inflated from 2018 GBPs to 2019 GBPs. This table is directly comparable to US Table 17.

Table 14: Informal Care Valuation, England, 2018

	I	II	III
Valuation (billions, £)	13.37	27.00	48.73
Total Hours Informal Help (billions)	2.49	2.49	2.49
Probability of Working	0.37	0.37	0.37
Predicted Wage × Probability of Working (£)	5.37	5.37	5.37
Predicted Wage if Working (£)	15.79	15.79	15.79
Care Worker Hourly Pay (£)		8.62	
Care Worker Cost (£)			22.37
Observations	1,285	1,285	1,285

Notes: Total hours of informal help is calculated as the average number of informal hours of help per week for 65+ population from ELSA multiplied by the number of over 65 year olds (10.18million). Column I values predicted working hours using predicted wages and hours worked, given individuals' age and sex, and values non-working hours at £0. Column II is as column I, and values predicted working hours at the predicted wage, but values predicted non-working hours at the average care worker hourly pay of £8.62 (see Table 11). Column III is as column II but instead of care worker hourly pay it uses the care worker hourly cost of £22.37 (from the Unit Costs of Health and Social Care 2018, by PSSRU). This is made up of an average salary, salary oncosts, direct overheads and indirect overheads. Predicted wage if working is weighted by hours of informal care. Amounts have been adjusted to 2019 GBPs. This table is directly comparable to US Table 18.

Table 15: Total Costs by Type of Care and Source, England, 2018

Care Type	Source	Cost I		Cost II		Cost III	
		£ bn	% GDP	£ bn	% GDP	£ bn	% GDP
Residential Care	Public	7.2	0.4%	7.2	0.4%	7.2	0.4%
	Private	4.8	0.2%	4.8	0.2%	4.8	0.2%
	All	12	0.6%	12	0.6%	12	0.6%
Formal Home Care	Public	5.4	0.3%	5.4	0.3%	5.4	0.3%
	Private	0.8	0.0%	0.8	0.0%	0.8	0.0%
	All	6.2	0.3%	6.2	0.3%	6.2	0.3%
Informal Care	Private	13.4	0.7%	27.0	1.4%	48.7	2.5%
Total	Public	12.5	0.6%	12.5	0.6%	12.5	0.6%
	Private	19.0	1.0%	32.7	1.7%	54.4	2.8%
	All	**31.6**	**1.6%**	**45.2**	**2.3%**	**66.9**	**3.5%**

Notes: The costs for Residential and Formal Home care come from Table 13. Informal care costs come from Table 14. We use the percentage of spending that is private or public from the Health Accounts (2018), which is for the whole of the UK and includes the under 65s, so may overstate the percentage that is Public. We also include spending by charities in Public. Cost I values Informal Care at the predicted wages of the informal carers multiplied by the predicted hours they would have worked, and values predicted non-working hours at zero. Cost II is as Cost I, and values predicted working hours at the predicted wage, but values predicted non-working hours at the average care worker hourly pay. Cost III is as Cost II but instead of care worker hourly pay it uses the care worker hourly cost. GDP for England in 2018 is estimated at £1.9 trillion (see footnote 5). Amounts in the table have been adjusted to 2019 GBPs. This table is directly comparable to US Table 19.

Appendix A: reweighting the ELSA data to make it representative of the full 65+ population

In this appendix we describe our weighting scheme to address attrition problems that arise when individuals enter nursing or care homes. ELSA has high quality information on the non-institutionalized population (e.g., those outside of a nursing or care home) and is representative of this population in a number of dimensions. While attrition exists in ELSA, there is no statistically significant correlation between attrition and prior health or the SES indicators such as education, income and wealth (Banks et al. 2011). However, ELSA is not fully representative of the nursing and care home population. Individuals who enter these homes are often missed in the survey. For example, in ELSA we calculate the probability of being in a nursing or care home conditional on being age 65+ is 0.013, whereas the probability of being in a nursing or care home in the full population is estimated by the Office for National Statistics (based on the 2011 Census and other administrative data) is 0.033. Furthermore, ELSA does not create sample weights for those in nursing or care homes.

To address the under-sampling of the nursing home population we use the following procedure: For the non-institutionalized population, we use the Wave 9 cross-sectional weight. For institutionalized individuals (e.g. those in nursing/care homes) we use the cross-sectional weight from the last wave in which they were observed in the household sample. We recalibrate these weights to ensure the reweighted sample composition matches the institutionalized/non-institutionalized percentages from the full population based on age and gender. Implicitly, we are assuming that the probability of attrition from ELSA is a function of nursing home status, gender, and age, but nothing else.[8] That is, we assume the probability of attrition is independent of all variables once we have conditioned on age, gender and nursing/care home status.

Define the variables age, gender, and nursing home/care home status as z. We then calculate the objects: $\Pr(z)$, $\Pr(z \mid \text{Observed in ELSA})$. We then calculate the relative probability of an individual in group z (i.e., whether in a nursing home or not and of a given age and gender) relative to being observed in ELSA: $p(z)= \Pr(z)/ \Pr(z \mid \text{Observed in ELSA})$. We then reweight the data when presenting statistics in the main text, and thus for any variable (gender, income, age, etc.), we multiply the observed number of people in cell z by $p(z)$. We have three age groups (65-74, 75-84, 85+), for both men and women, and show the probabilities for each group that we use to construct $p(z)$. Consistent with previous findings, ELSA appears

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[8] Barczyk and Kredler (2019) make a similar assumption and estimate selection models to address the attrition problem. Instead, we use weighting, which is another popular approach to addressing this problem. See Solon et al. (2015) and Valliant and Dever (2019) for recent surveys on weighting.

representative of the full population not in a nursing home by age and gender, but significantly understates the share in a nursing home for men and women of all age groups.

	Men 65-74	Men 75-84	Men 85+	Women 65-74	Women 75-84	Women 85+	Total
Pr(NH=1)	0.0015	0.0034	0.0047	0.0016	0.0066	0.0153	0.0331
Pr(NH=1) if observed in ELSA	0.0005	0.0004	0.0028	0.0004	0.0013	0.0074	0.0128
Pr(NH=0)	0.2552	0.1478	0.0461	0.2752	0.1737	0.0689	0.9669
Pr(NH=0) if observed in ELSA	0.2610	0.1430	0.0472	0.2827	0.1743	0.0790	0.9872

Notes: *NH* is being in a nursing/care home. Individual cells in this table gives the joint probability of a given nursing home status and set of covariates, both in the population and in the ELSA data.

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