

Projections of Adult Social Care Demand and Expenditure in England, 2022 to 2042

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DISCLAIMER

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ABSTRACT

This paper presents updated projections prepared for the Department of Health and Social Care of demand for long-term care for older people and younger adults in England to 2042 and associated future expenditure. The projections were produced using updated versions of the Care Policy and Evaluation Centre's (CPEC) aggregate long-term care projections models and the CARESIM microsimulation model developed by Ruth Hancock. The projections cover publicly funded social care for both older people and younger adults and privately funded social care for older people.

The key findings of the research are:

- Public expenditure on social services for older people is projected to rise under the current funding system from £10.9 billion in 2022 to £21.4 billion in 2042 at constant 2022 prices and under a set of base case assumptions about trends in the drivers of long-term care demand and in the unit costs of care services.
- Public expenditure on social services for younger adults is projected to rise under the current funding system from £12.0 billion in 2022 to £18.2 billion in 2042 at constant 2022 prices and under a set of base case assumptions about trends in the drivers of long-term care demand and in the unit costs of care services.
- These base case projections for older people are sensitive to assumptions about future trends in mortality, disability rates, and availability of informal care.

These findings need to be treated with some caution. They are based on a set of assumptions about future socioeconomic and demographic trends. They relate to current patterns of care and the current funding system and do not take account of any of the funding reforms which have been proposed in recent years. They do not allow for the potential impact of rising expectations or other behavioural changes. Our estimates for the base year of 2022/23 take account of mortality during the COVID-19 pandemic years through use of 2022/23 data on service users and expenditure, but the projections do not take account of the potential future long-term impacts of the pandemic on excess deaths, numbers of service users, or social care expenditure.

INTRODUCTION

This paper presents updated projections of demand for social care for older people (aged 65 and over) and younger adults (aged 18 to 64) in England to 2042, along with the associated future expenditure. They cover publicly funded social care for both age groups and privately funded social care for older people. They encompass both community-based services and residential care.

The projections were produced using updated versions of the Care Policy and Evaluation Centre's (CPEC)¹ aggregate long-term care projections models and of the CARESIM microsimulation model developed by Ruth Hancock. The versions of the models used here have a base year of 2022/23 and incorporate the Office for National Statistics Office for National Statistics (2019) 2018-based principal population projections, data on the number of service users and on local authority expenditure on social care (NHS England, 2023) and Office for Budget Responsibility (Office for Budget Responsibility, 2023) economic assumptions that were available in November 2023. They do not take account of the unknown long-term impact of the COVID-19 pandemic on numbers of service users or social care expenditures.

DESCRIPTION OF MODELS

THE CPEC LONG-TERM CARE PROJECTIONS MODEL

The CPEC long-term care projections models aim to make projections of four key variables: the future numbers of disabled older people and younger adults, the likely level of demand for long-term care services and disability benefits, the costs associated with meeting this demand and the social care workforce required². The three CPEC models – for older people, for younger people with learning disabilities and for other younger adult groups – are cell-based (macro-simulation models) and take the form of Excel spread-sheets.

The models do not make forecasts about the future. They make projections on the basis of specific assumptions about trends in such variables as future mortality rates, disability rates and unit costs of care. The approach involves simulating the impact on demand for care and support of specified changes in demand drivers or specified changes in policy. It does not involve forecasting future policies or future patterns of care. This means that the projections reported in this paper should be treated as indications of likely future expenditures on care and support if policies are unchanged and drivers of demand follow the specified trends. In practice not only may drivers of demand not follow the assumptions, but also policies may change. Since the purpose of the projections is to inform policy development it would not be helpful to take account of views about possible policy changes.

The models are updated regularly as new data become available, in particular population projections, data on numbers of people in care homes and numbers of users of home care services, data on social care expenditure and estimates of the unit costs of care. The version of

¹ Formerly the Personal Social Services Research Unit (PSSRU).

² Workforce projections are not presented in this report.

the models that have been used to make the projections in this paper utilises official 2018-based population (Office for National Statistics, 2019) and indicative 2011-based marital status and living arrangements projections (Office for National Statistics, 2018), data from the Health Survey for England for 2011 to 2019 (NatCen Social Research, 2019), the 2005 PSSRU survey of older care home admissions (Darton et al., 2006), data on residential care and home-based care, expenditure data for 2022/23 and unit costs adjusted to 2022/23 prices (NHS England, 2023; Office for National Statistics, 2023). Data and methods are discussed further in the Annex.

THE CARESIM LONG-TERM CARE MODEL

CARESIM is a microsimulation model which uses a sample of people aged 65+ living in England from the UK Family Resources Survey (FRS) (Department for Work and Pensions, 2021) to simulate how much sample members would need to contribute to the costs of their care, should they need care, under the current or variant funding systems.

The CARESIM model as used here produces projected trends in:

- The proportion of older people by age group, gender and household composition who (a) own their home and (b) left full-time education aged 16+ years,
- The proportion of older service users, by type of care package, who are required to fund their own care privately under the provisions of the current means test,
- The proportion of the gross weekly costs of publicly funded care, by type of care package, which older service users are required to meet in user charges.

To produce these last two sets of proportions, projections of the number and characteristics (age, gender, marital status, home-ownership and educational level) of older service users from the CPEC model are used as weights so that the CARESIM sample of people aged 65+ is rendered representative of the projected population of older service users. The weights are applied to the sample drawn from the FRS in the base year. For future years, CARESIM ‘ages’ individual members of the FRS sample and then applies the weights from the CPEC model. Further details are given in the Annex.

BASE CASE ASSUMPTIONS

The models produce projections on the basis of specific assumptions about future trends in the key drivers of demand for long-term care. The main assumptions used in the base case are summarised in Box 1 and Box 2 below. The base case projections take account of changes in factors exogenous to long-term care policy, such as demographic trends. They hold constant factors endogenous to long-term care policy, such as patterns of care and the funding system. The base case is used as a point of comparison when the assumptions of the model are subsequently varied in alternative scenarios to assess their sensitivity.

There is ample scope to debate these base case assumptions. It could be argued for example that mortality rates in old age will fall more rapidly than official projections, disability rates may rise (or fall), the supply of unpaid care by adult children may not rise in line with needs,

the supply of residential care may not rise in line with severe disability and/or average earnings in the care sector may rise by more than the OBR assumption on productivity. We have conducted a wide range of sensitivity analyses on these issues in this and previous studies (for example Wittenberg et al. 2006, 2011, 2018). More recently we have conducted analysis of past trends in some of the key drivers of older people's demand for care which has informed our base case assumptions and the design of the sensitivity analysis (Hancock et al., 2025). Here we report sensitivity analysis for trends in disability in old age, availability of informal care as it links to rises in childlessness, and alternative population projections. For younger adults we report sensitivity to alternative population projections.

BOX 1: BASE CASE ASSUMPTIONS AFFECTING ALL GROUPS

- The number of people by age and gender changes in line with the Office for National Statistics (ONS) 2018-based principal population projections.
- The proportions of people receiving unpaid care, formal community care services, residential care services and disability benefits remain constant for each sub-group by age, disability and other needs-related characteristics.
- Health and social care unit costs rise in real terms in line with Office for Budget Responsibility (OBR 2023) assumptions for future trends in productivity, except that non-labour non-capital costs (assumed £140 per week in care homes and 15% of weekly cost for community care) remain constant in real terms (Homecare Association, 2021; Laing, 2023) and an uplift in unit costs is included for the years to 2024 to take account of the planned rises in the national living wage (NLW), which is assumed to affect 62.5% of the care bill based on analyses of data in the State of the Adult Social Care Sector and Workforce in England 2022 report (Skills for Care, 2022).
- The current social care funding system (i.e., the structure of the means testing rules) will remain unchanged, although thresholds for means testing are updated in the projection years (see below)
- Real Gross Domestic Product rises in line with Office for Budgetary Responsibility projections published in November 2023 (OBR 2023).
- The supply of formal care will adjust to match demand, and demand will be no more constrained by supply in the future than in the base year.
- Monetary values are expressed in base year (i.e., 2022/23) prices using known or forecast movements in the GDP deflator.

BOX 2: BASE CASE ASSUMPTIONS AFFECTING SPECIFIC GROUPS

Assumptions affecting older people

- Marital status rates change in line with the ONS (2018) ad hoc 2011-based marital status and living arrangements projections.
- There is a constant ratio of single people living alone to single people living with their children or with others and of married people living with partner only to married people living with partner and others.
- Prevalence rates of disability in old age by age group (65-69, 70-74, 75-79, 80-84, 85+) and gender remain unchanged, as reported in the Health Survey for England 2011 to 2019.
- Home-ownership rates and educational rates for older people change in line with projections produced by the CARESIM model. These generally involve continuing increases in owner-occupation rates, at least for the first 15 years of the projection and for the oldest age groups, but rates vary according to age, gender and living arrangements. See Hancock et al. (2006) for projection methodology and previous results. The projections also suggest consistent and substantial increases in the proportion of older people leaving full-time education after age 15.³
- The proportion of older care recipients whose care is privately funded varies in line with projections from the CARESIM model. These projections are for small rises in this proportion across the projection period for all care types. See Wittenberg et al. (2002, appendix Table 3.3) for previous results^{Error! Bookmark not defined.}.
- The proportion of the costs of publicly funded care met by older service users through user charges also changes in line with projections from the CARESIM model.
- Beyond announced values, monetary parameters within the long-term care and social security systems are assumed to maintain their values relative to known or forecast movements in the CPI except:
 - capital thresholds are held at their 2022/23 levels for 2023/24 and linked to CPI growth thereafter.
 - the new State Pension for those reaching state pension age from April 2016 and Basic State Pension for others are uprated by the 'triple lock' (the highest of CPI inflation, average earnings growth or 2.5%).
 - the Guarantee Credit level within Pension Credit, and other means-tested pensioner benefits are linked to average earnings growth.
 - the NHS contribution to nursing care in nursing homes is linked to productivity growth.
 - once it has fallen to the level of the Guarantee Credit, the income threshold in the home care means test is linked to average earnings, as is the Personal Expenses Allowance in residential care from that point.

Assumptions affecting younger adult groups

- The proportions of younger adults by age and gender who receive care services remain constant over time for the physical disability and mental health conditions groups.
- The national prevalence of learning disability (LD) by age and severity is as in the Sheffield Learning Disability Register and changes over time accounting for children with LD reaching age 18 years and mortality among adults with LD.
- A higher proportion of people with profound and multiple LD than with severe LD receive residential care and a higher proportion of people with severe LD than with moderate LD receive community care.

³ Current results can be made available on request.

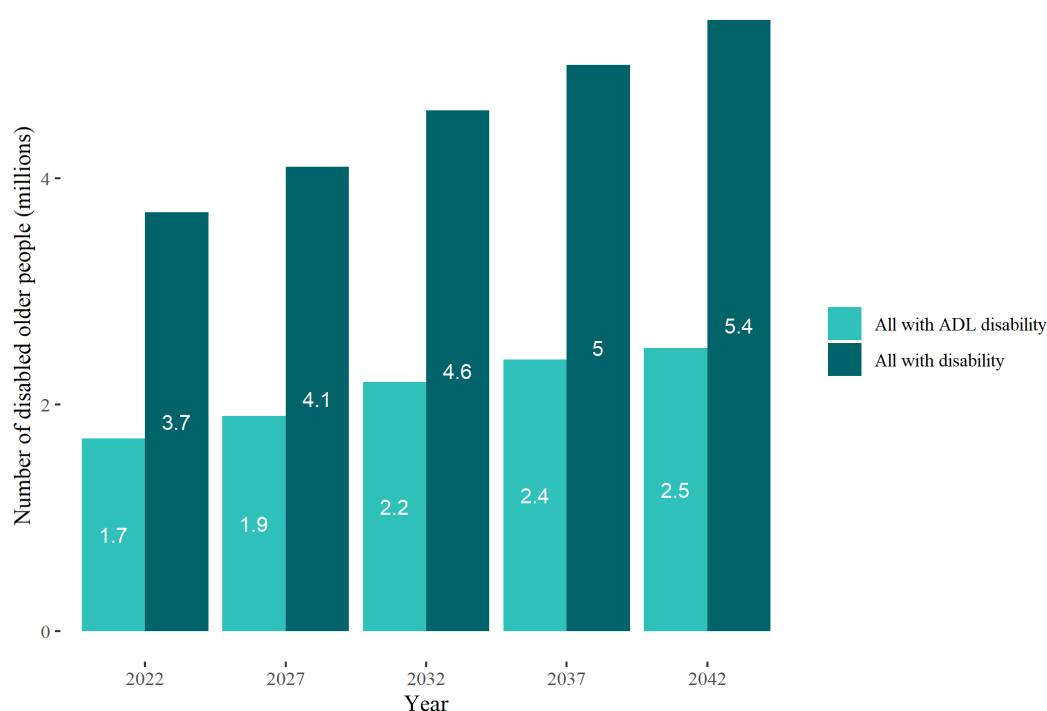
PROJECTIONS UNDER BASE CASE ASSUMPTIONS

PROJECTIONS FOR OLDER PEOPLE

The ONS 2018-based principal population projections for England project that the overall older population of England aged 65 and over will rise from 10.8 million in 2022 to 14.7 million 2042 (rise of 35%). The population aged 85 and over is projected to rise much more rapidly, from 1.5 million in 2022 to 2.5 million in 2042 (rise of 69%).

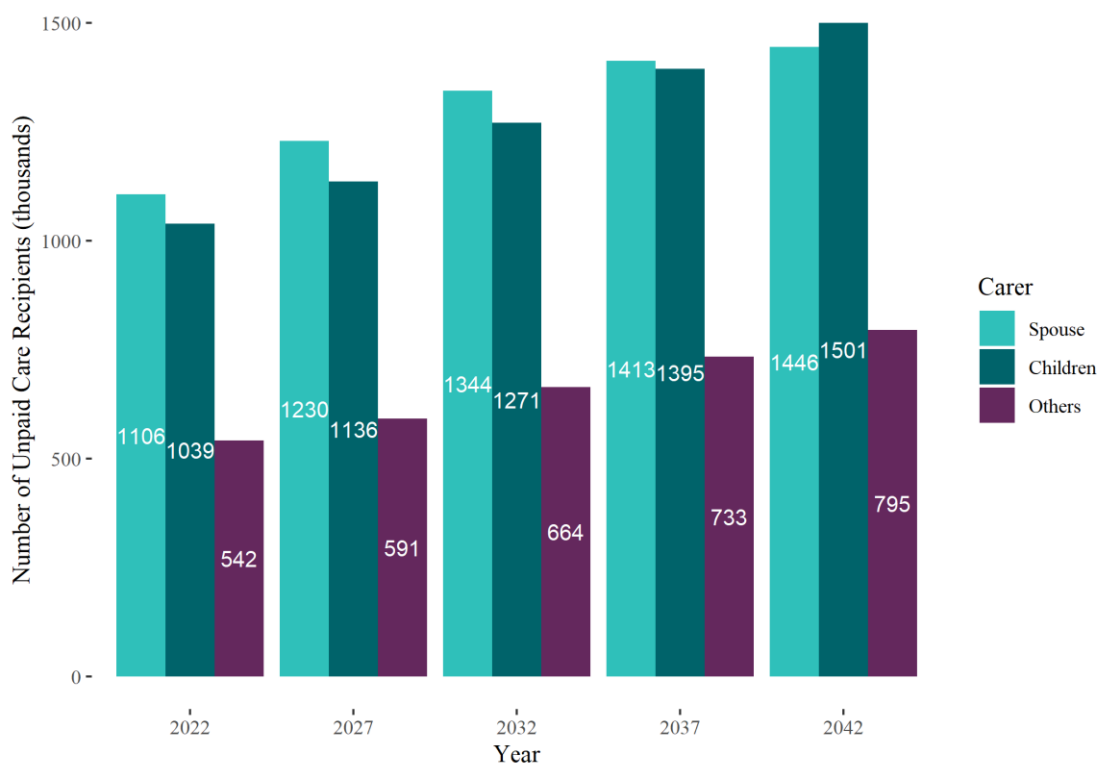
Under the base case assumptions, the numbers of disabled older people, defined as those unable to perform at least one instrumental activity of daily living (IADL) or having difficulty performing or inability to perform without help at least one activity of daily living (ADL), would rise by 44%, from 3.7 million in 2022 to 5.4 million in 2042. The number of older people with more severe disability, that is, unable to perform without help (or at all) one or more ADL tasks, would increase by 52% between 2022 and 2042 (Figure 1), from 1.7 million to 2.5 million.

Figure 1 Projected number of disabled older people (millions) in England, 2022-2042



The number of disabled older people receiving care from a spouse or partner is projected to increase by 31%, from 1.1 million in 2022 to 1.4 million in 2042. The number of people receiving care from an adult child is projected to increase by 44% from 1.0 million in 2022 to 1.5 million in 2042 (Figure 2). These projections are based on the base case assumptions that the proportion of older people receiving care from their children is to remain the same by age, gender and other characteristics as it is today. Whether the supply of care by children will actually rise in line with need is very uncertain (Pickard et al., 2007, 2012).

Figure 2 Projected number of unpaid care recipients (thousand persons) by carer type



The number of older users of local authority funded home care services or direct payments is projected to rise from 228,310 in 2022 to 386,320 in 2042 (an increase of 69%), to keep pace with demographic pressures (Figure 3). The number of users of privately funded home care is projected to rise by 77% between 2022 and 2042. The number of older people in local authority funded residential care (including care in nursing homes) will need to rise by 37%, from 141,740 in 2022 to 193,900 in 2042 to keep pace with demographic changes. The number of privately funded residents is projected to rise by 74% over this period (Figure 3). The main reason for this difference in projections between publicly and privately funded residents is the projected rise in the proportion of older people who own their own home and so are generally not eligible for local authority support.

Figure 3 Projected number of older service users (thousands), 2022-2042, by type of care and funding source



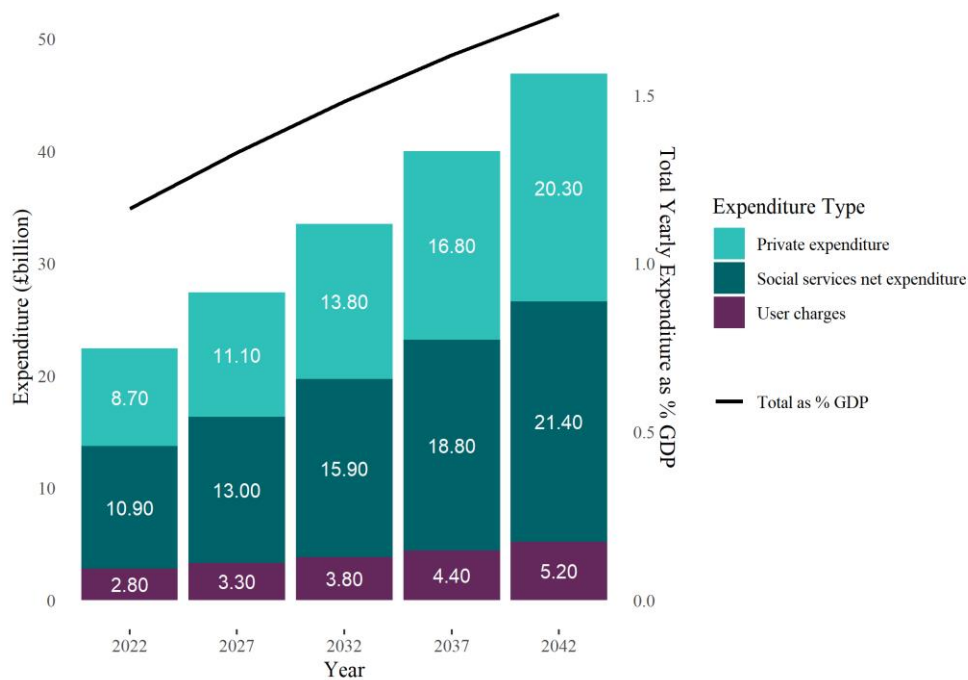
Public net expenditure on social services for older people (i.e., public expenditure net of user charges) is projected to almost double (an increase of 96%) under the current funding system from around £10.9 billion (0.57% of GDP) in 2022 to £21.4 billion (0.79% of GDP) in 2042 at constant 2022 prices (Figure 4). Net public expenditure on community-based care is projected to rise more rapidly than net public expenditure on residential care (126% as against 78%) over the period 2022 to 2042 (Figure 4).

Private expenditure is projected to rise from £8.7 billion in 2022 to £20.3 billion in 2042, an increase of 132%. Total expenditure on social services for older people is projected to rise by 109%, from £22.4 billion (1.16% of GDP) in 2022 to £46.9 billion (1.74% of GDP) in 2042 at constant 2022 prices (Figure 5). It should be noted that the figures for base year private expenditure are estimates drawn from various sources on the numbers of privately funded care home residents, the numbers of privately funded home care users and the weekly costs of privately funded care. This means that the projections for private expenditure should be treated with caution.

Figure 4 Projected local authority net expenditure on social care for older people, 2022-2042, £billion at 2022 prices and as proportion of GDP, by type of expenditure (residential, community, other)



Figure 5 Projected expenditure on social care for older people, 2022-2042, £billion at 2022 prices, by expenditure type (private, net public, user charges) and as a proportion of GDP



PROJECTIONS FOR YOUNGER ADULTS

According to ONS 2018-based principal population projections for England, the total number of people aged 18 to 64 will rise by 2.2% between 2022 and 2042, from 34.2 million in 2022 to 35.0 million in 2042, but the projected change varies by age group. For the physical disability and mental health groups our projections are based on these ONS population projections but for learning disability we use a different approach.

The learning disability (LD) model produces projections of the number of adults with LD in England from 2022 to 2042 in a few key stages. The model estimates the future annual ‘inflow’ into adulthood at age 18 of children with LD, using data from the National Pupil Database (NPD). The prevalent number of adults with LD in England by age and severity of LD is estimated using data from the Sheffield Case Register. The national prevalence of LD, by age and severity, is assumed to be the same as in Sheffield. The future annual ‘outflow’ of adults is estimated based on mortality rates by age and severity using English Learning Disability Mortality Review (LeDeR) data from the University of Bristol. Further details about this model are in the Annex.

The younger adults’ long-term care model projects two key variables: the future numbers of younger adult service users, by care setting and primary support need – physical disability and mental health conditions - and the costs to local authorities of care for them. This model is a cell-based model which is similar to the older people’s cell-based model but much simpler since considerably less data are available for younger adult people with care needs. The absence of data on the prevalence of care needs among this group means that the younger adults model does not produce projections of numbers of physically disabled younger adults or of younger adults with mental health conditions.

For younger adults, the numbers of learning disabled users of local authority home care services or direct payments are projected to rise by 17% between 2022 and 2042, from 105,210 in 2022 to 122,910 in 2042 (Figure 6). The numbers of physically disabled users of local authority home care services or direct payment would need to rise by 1.6% between 2022 and 2042, from 68,660 in 2022 to 69,780 in 2042. The numbers of users of home care services and direct payment with mental health difficulties would need to rise by 1.2% between 2022 and 2042, from 39,670 in 2022 to 40,160 in 2042.

The number of learning disabled younger adults in local authority funded residential care is projected to rise by 20% between 2022 and 2042, from 20,570 in 2022 to 24,740 in 2042 (Figure 6). The number of physically disabled younger adults in local authority funded residential care would need to rise by 1.5% between 2022 and 2042, from 7,330 in 2022 to 7,430 in 2042. The number of younger adults with mental health needs in supported residential and nursing care is projected to increase by 1.7% between 2022 and 2042, from 10,380 in 2022 to 10,550 in 2042.

Figure 6 Projected number of younger adults receiving adult social care services (thousands), 2022-2042



Public expenditure on social care services for younger adults (net of user charges) is projected to rise by 51%, from £12.0 billion (0.62% of GDP) in 2022 to £18.2 billion (0.68% of GDP) in 2042 at constant 2022 prices (Figure 7). Public expenditure on community-based care is projected to rise by 50%, from £7.3 billion in 2022 to £10.9 billion in 2042. Public expenditure on residential care is projected to rise by 55%, from £3.7 billion in 2018 to £5.7 billion in 2042 (Figure 7).

Figure 7 Projected local authority net expenditure on social care for younger adults in England, 2022-2042, £billion at 2022 prices and as proportion of GDP



SENSITIVITY ANALYSES

We assume in our base case analyses that the total population will change in line with the ONS 2018-based principal population projections. If we instead assume that the total population will change in line with the ONS 2021-based interim population projections, projected public expenditure on care for older people will be £20.6 billion in 2042 as opposed to £21.4 billion in the base case scenario (Figure 8), and projected public expenditure on care for younger adults will be £18.5 billion as opposed to £18.2 billion in 2042 (Figure 9).

There are different views about whether age-specific disability rates can be expected to rise, fall or remain broadly constant in the future (Wittenberg et al. 2018). Our own analysis of recent past trends in disability amongst older people shows no clear pattern (Hancock et al. 2025). Constant age-specific disability rates may thus be regarded as a neutral assumption and this is our base case. If, instead, the prevalence of 2+ ADL limitations among older people aged between 65 and 74 falls by 1% per year for 10 years after 2022 and then remains constant until 2042, public expenditure is projected to be £21.2 billion in 2042, as opposed to £21.4 billion in the base case scenario. If the prevalence of 2+ ADL limitations among people aged 85 and over increases by 2% per year for 10 years after 2022 and then remains constant until 2042, public expenditure is projected to be £22.4 billion in 2042 (Figure 8).

Analysis of English Longitudinal Study of Ageing (ELSA) wave 9 data shows that the rate of childlessness is higher among people aged 50 to 69 years than among those aged 70 years and

over. We estimate based on this ELSA finding that the proportion of single older people aged 75 and over who have children can be expected to decrease by a factor of 0.982 and that of married older people aged 75 and over who have children can be expected to decrease by a factor of 0.990 between 2032 and 2037. This increase in childlessness will lead to a decrease in the supply of unpaid care provided by adult children, which may in turn lead to an increase in demand for formal care. We project that under this scenario public expenditure on social care for older people will be £21.418 billion in 2042, which is £0.019 billion higher than in the base case scenario (Figure 8). The impact on projected expenditure is small partly because the reduction in unpaid care for older people with high care needs will be small and partly because not all older people without unpaid care receive formal care services.

Figure 8 Sensitivity analyses of projected public expenditure of social care for older people, 2022-2042 (£billion)

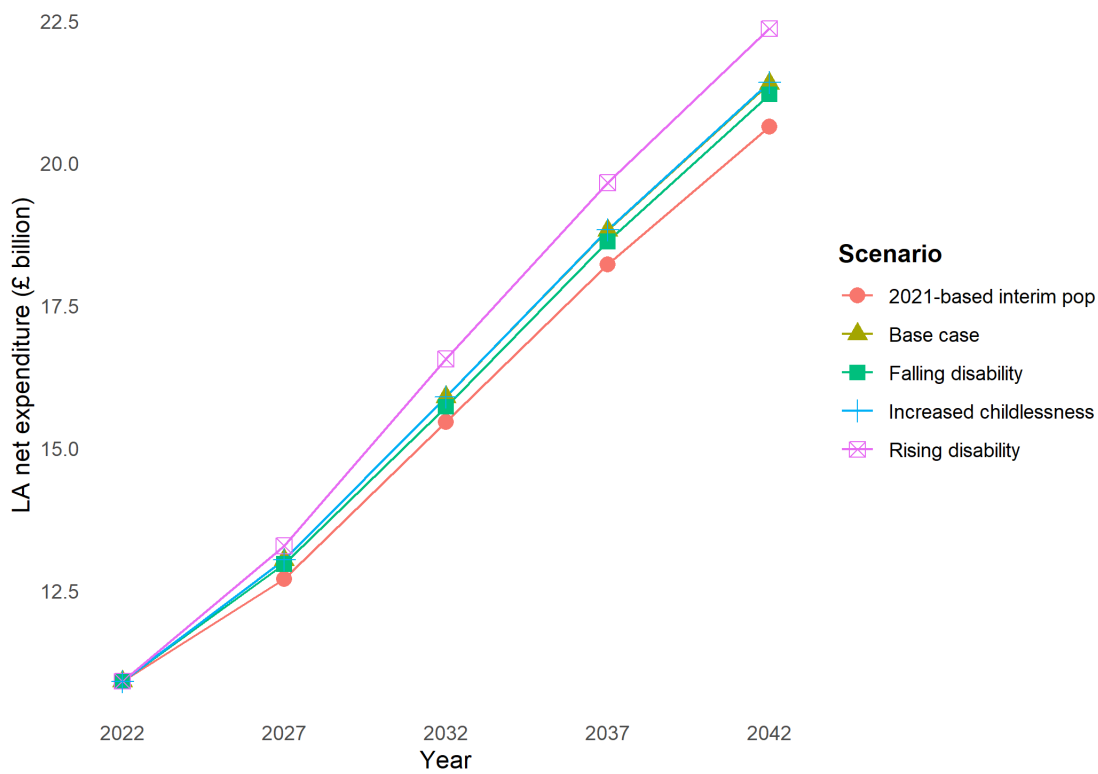
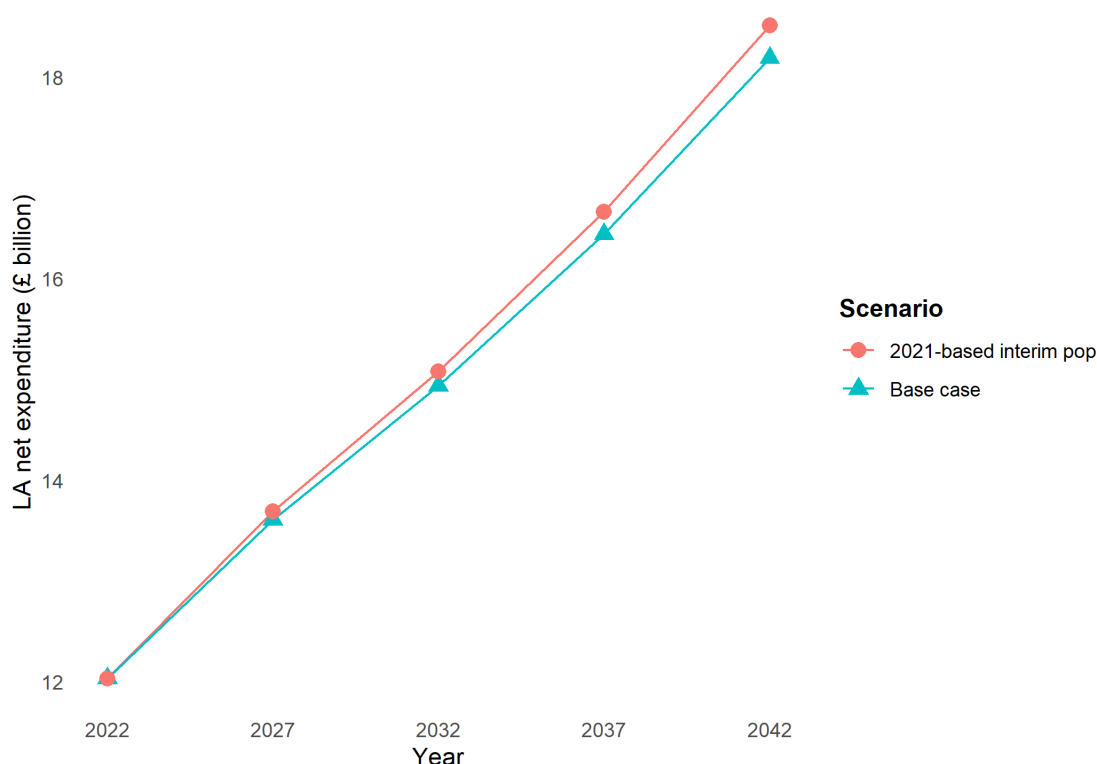


Figure 9 Sensitivity analyses of projected public expenditure of social care for younger adults, 2022-2042 (£billion)



CONCLUSIONS

Public expenditure on social services for older people, net of user charges, is projected to rise by 96% under the current funding system from £10.9 billion (0.57% of GDP) in 2022 to £21.4 billion (0.79% of GDP) in 2042 at constant 2022 prices and under a set of base case assumptions about trends in the drivers of long-term care demand and in the unit costs of care services. The equivalent for social services for younger adults is a projected rise by 51%, from £12.0 billion (0.62% of GDP) in 2022 to £18.2 billion (0.68% of GDP) in 2042 at constant 2022 prices. Total public expenditure on social services for older people and younger adults is projected to rise by 73% under the current funding system from around £22.9 billion (1.19% of GDP) in 2022 to £39.6 billion (1.47% of GDP) in 2042 at constant 2022 prices.

Due to population ageing and projected real rises in social care pay rates, social care expenditure will continue to rise rapidly in the following decades. The findings in this report illustrate the importance of promoting healthy ageing and other measures which seek to ensure that the prevalence rates of diseases do not follow recent trends or at least that their disabling effects are mitigated (Kingston et al., 2017; World Health Organisation, 2017). The existing literature stresses that the prevention of chronic illness, disability and dependency plays a crucial role in the improvement of older people's quality of life and subjective well-being (Gobbens & Van Assen, 2014). Our analyses show that there is also a strong economic case for the prevention of disability and dependency: a reduction in the future prevalence of

disability leads to a parallel decrease in care needs, which helps to address the financial challenges in the social care sector.

The analysis shows that the number of disabled older people receiving unpaid care is projected to rise by nearly 40% over the next 20 years if the probability of receiving unpaid care remains constant. It is not clear however that the supply of unpaid care will rise to meet this demand (Pickard et al., 2007, 2012). Unpaid care, particularly by the adult children of disabled older people, may not increase so rapidly in future, as a result of such factors as an increase in childlessness (Brimblecombe et al., 2018). If the supply of unpaid care does not increase to meet demand, the demand for formal services would rise faster than under the base case, as we have shown in the sensitivity analyses.

The analysis assumes that the unit costs of care, such as the labour and capital costs of an hour's home care, will rise in line with OBR projections for rises in productivity (subject to an adjustment in 2024 for the increase in the national living wage (NLW)). There is scope for debate about whether wages in the care sector will rise in line with average earnings, and we have conducted sensitivity analyses on this assumption in previous studies (Hu et al., 2020; Wittenberg et al., 2018) .

The social care sector is closely linked to the rest of the economy. Changes in economic and social policies may have profound consequences for the sector, which amplifies the uncertainties relating to future care costs. Therefore, it is crucially important to regularly and closely monitor the changes in the demographic and economic contexts and evaluate their consequences for the social care sector so that policy makers will be better prepared to address the economic implications of population ageing and rising demand for long-term care.

These findings need to be treated with some caution. First, the models produce projections of future public expenditure on social care for older people and younger adults based on a specified set of base case assumptions. This set of assumptions seems plausible but is clearly not the only possible set. This means that the projections should not be regarded as forecasts of the future. Second, they do not constitute the total costs to society of long-term care. That would require the inclusion of the costs of a wider range of services to a wider range of public agencies and service users and the opportunity costs of unpaid care. Finally, it should also be stressed that no allowance has been made here for changes in public expectations about the quality, range or level of care. The long-term impact of the COVID-19 pandemic also remains uncertain. Despite these caveats, the projections are valuable for government spending reviews and may assist the newly announced inquiry on social care.

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ANNEX

Older people's macrosimulation projection model

The CPEC long-term care projections model aims to make projections of four key variables: the future numbers of disabled older people, the likely level of demand for long-term care services and disability benefits for older people, the costs associated with meeting this demand and the social care workforce required. The model does not make forecasts about the future. It makes projections on the basis of specific assumptions about future trends. The approach involves simulating the impact on demand of specified changes in demand drivers, such as demographic pressures, or specified changes in policy, such as the introduction of a lifetime cap on care costs. It does not involve forecasting future policies or future patterns of care.

The model is cell-based (a macrosimulation model) and takes the form of an Excel spreadsheet. It consists of five main parts. The first part estimates the numbers of older people with different levels of disability by age group, gender, household type, education and housing tenure. The second part estimates the levels of long term care services required, by attaching a probability of receiving health and social care services to each cell. The third part of the model estimates total health and social services expenditure, and, in the fourth part, total expenditure is allocated to the various sources of funding. Finally, a fifth part relates to the social care workforce.

The first part of the model divides the older population according to a number of characteristics relevant to the use of services, such as the level of functional disability, marital status, whether living alone, with a partner or children, education and housing tenure. The model uses the Office for National Statistics 2018-based population projections as the basis for the numbers of people by age band and gender in each year under consideration until 2038. The projected older population by age band and gender are separated into disability groups. Disability is a crucial factor in considering need for long-term care, as it is disability rather than age which influences need for care. The model uses as a measure of disability the ability to perform activities of daily living (ADLs) and instrumental activities of daily living (IADLs). The section on disability in the model uses data from the Health Survey for England (HSE) 2011 to 2019. It includes six categories of functional disability, ranging from no disability to inability to perform three or more activities of daily living (ADL) without help.

The older population by age, gender and disability is then further broken down by marital status and household composition. The marital status classification in the model is based, in the first instance, on de facto marital status. Older people who are married or cohabiting are distinguished from those who are single, separated, divorced or widowed. Married older people are further broken down into couples living alone or couples living with others. For older people who are single, separated, divorced or widowed, they are broken down into those living alone, living with children, or living with other people. The section on marital status and household composition uses data from the indicative 2011-based marital status and living arrangements projections published by the Office for National Statistics (2018).

The model includes, for those living in private households, a simple breakdown by housing tenure, between those living in owner-occupied tenure and those living in rented accommodation. One reason for the inclusion of housing tenure is that it can be regarded as a simple proxy for socioeconomic groups. In addition, in the case of older people living alone, housing tenure can have an impact on their eligibility for receiving financial support from their local authority if they are admitted to a care home. The current means test for public support in care homes generally takes account of the value of the person's home (unless it is occupied by their spouse or an older or disabled relative). This means that older homeowners who live alone generally need to fund their residential care privately, while older tenants and older homeowners living with their spouse are often eligible for public funding.

The model also includes a breakdown by education, between those with less than 15 years of education and those with more than 16 years of education, as a further simple proxy for socio-economic groups. The rates of homeownership, by age, gender and marital status, and of education by age and gender are from the HSE 2011–2019 for the base year with projected rates for future years produced by the CARESIM microsimulation model, which uses the Family Resources Survey.

The second part of the model divides the older population between people receiving no care, unpaid care, formal community-based care, both unpaid and formal community-based care and residential care. The overall population with severe disability (three or more ADL limitations) is first divided between people living in the community and those living in care homes or (long-stay) hospitals. Data on the numbers of local authority funded care home residents are derived from NHS England statistics (NHS England, 2023); data on the number of privately funded are derived from ONS data (ONS, 2023) and NHS funded care home residents are estimated from Laing & Buisson market survey estimates (Laing & Buisson, 2023) and data on hospital residents by age and gender and on the breakdown of the care home population by age and gender are derived from the Census 2021 (ONS, 2021); and data on the proportion of care home residents who lived alone and on the proportion who owned their home before admission are derived from a PSSRU survey of care home admission (Darton et al. 2006).

The population living in the community are divided between the four categories – no care, unpaid care, formal community-based care, both unpaid and formal community-based care - on the basis of analyses of data from the HSE 2011–2019. Demand for non-residential services was calculated by using the fitted values from the bivariate probit regression models as the estimated probabilities of receipt of care by age band, disability and the other factors described above⁴.

⁴ The bivariate probit regression models are specified as follows:

$$Y1i = I(\sum_k(\beta_k \times Xki) + \alpha \times Y2i + e1i > 0) \quad (1)$$

$$Y2i = I(\sum_k(\beta_k \times Xki) + \sum_j(\gamma_j \times Zji) + e2i > 0) \quad (2)$$

where $I(\cdot)$ is an index function, with $I(\cdot)=1$, if the event in the bracket is true, and $I(\cdot)=0$, if otherwise. $Y1i$ denotes the dependent variable, $Y2i$ denotes the endogenous regressor, Xki denotes the exogenous regressors that appear in both equations, and Zji denotes the exogenous regressors that only appear in the second equation. α , β_k and γ_j are the coefficients on the respective independent variables. $e1$ and $e2$ are latent error terms and are assumed to be jointly normal.

The bivariate probit regression models account for the joint determination of formal community care and unpaid care. The fitted values derived from these models are the joint probability of the different types of care. These fitted values were then multiplied by the projected numbers of older people within each cell by age band and other needs-related circumstances to produce estimates of the numbers of care recipients. The estimated numbers of recipients of local authority home care were grossed to match official NHS England data.

Three principal sources of unpaid care are identified: care from children, from spouses and from others (other family members, friends or neighbours). The propensity to receive unpaid care from each of the three sources is the fitted values of multinomial or binary logit regression models calculated using the HSE 2011–2019 data. The projections assume a steady state regarding the propensity, within household type/unpaid care groups, to receive care from a spouse, child, spouse and child, or others.

Community care users are divided into three groups according to hours of care: low intensity (1–5 hours), medium intensity (6–10 hours), and high intensity (10+ hours) of care. The proportions in each of the three categories were calculated using the HSE 2011–2019 data and were assumed to remain the same in the projection years.

For care users in each intensity group, they are further divided into publicly-funded and privately-funded users of care. The proportions that were used to divide the care users in the base year were calculated using HSE 2011–2014 data. The model does not use data from HSE 2015–2019 because the questions regarding public and privately funded care in HSE 2015–2019 are different from those asked in HSE 2011–2014. The proportions in the projection years were informed by the analysis results from CARESIM model.

The third part of the model projects total expenditure on the formal services demanded, applying unit costs of formal care to the volume of services projected in the second part of the model. The unit costs are derived from local authority data.

The fourth part of the model breaks down projected expenditure on services by sources of funding: NHS, social services and service users. The costs of health services included are assigned to the NHS. The costs of social services are divided between local authority funding and service users. As there are no national data on privately funded non-residential care, the projections for privately funded non-residential care need to be treated with caution as it is not possible to verify that all privately funded care is captured by the model.

Residents of residential care and nursing homes and home care users are divided into privately and publicly funded residents through analyses using the CARESIM model. The breakdown for 2022 is based on the official data. Privately funded residents are assumed to meet their care home fees from their own funds (including disability benefits), except that the NHS meets nursing costs in nursing homes. Expenditure on local authority funded residential care and home care is divided between local authority social services and users on the basis of CARESIM modelling. The full costs of privately funded residential and nursing home care and private domestic care and a proportion of the costs of all other social services are thus assigned to service users. Estimated net and gross expenditure of local authority funded

services is grossed to match local authority expenditure data from the Adult Social Care Finance Return (ASC-FR) for 2022/23. The grossing factors estimated for 2022 are applied to all projection years.

The model also estimates separately expenditure on disability benefits. This involves multiplying the numbers of recipients by the weekly average amounts. This expenditure is split between sums used to fund care and sums not so used through CARESIM modelling. It should be noted that expenditure on disability benefits is not part of the public expenditure reported in this paper.

A fifth part of the model makes projections of the numbers of social care (but not NHS) staff required to provide the projected volume of social services, for different groups of social care staff. For care staff, it is assumed that the ratio of staff to volumes of care such as home care hours remains constant over time. For administrative and managerial staff, it is assumed that the ratio of such staff to care staff remains constant over time. It should be noted that this paper does not report projection results in this part of the model.

CARESIM microsimulation model of older people's care charges

CARESIM, is a microsimulation model for assessing the distributional effects of reforms to the care means tests and estimating the private-public split of care costs. It is based on a representative sample of the English older population (aged 65+ in the base year) drawn from the UK Family Resources Survey (FRS) (Department for Work and Pensions, 2021). Using information on the income, wealth and other relevant characteristics of sample members, CARESIM calculates what each sample member would be required to pay towards the cost of different types of care services, should they need such care, allowing for asset depletion during a randomly assigned time to date in receipt of care. In effect, this mimics the observation of a cross-section of care recipients, producing results which can be used with the older people's macrosimulation projection model. Interactions between the care means tests and social security benefits (e.g. eligibility for public care funding on receipt of disability benefits and of asset depletion on entitlement to means-tested benefits) are modelled. For future years, survival probabilities from official population projections by age and gender are used to determine via Monte Carlo simulation whether each sample member remains alive in the future year in question. CARESIM projects each surviving sample member's income (other than means-tested social security benefits) and wealth to that year, according to assumed or (e.g. for state pension) national policy-determined inflation adjustments. Inheritance of pension income and wealth by surviving partners from sample members deemed to have died is allowed for before simulating means-tested benefit entitlements and then care charges.

CARESIM does not predict which sample members will need care. Instead, it applies weights or grossing-up factors from the older people's macrosimulation model such that the sample is made representative in terms of demographic characteristics, of the population projected by that model to be receiving different types of care. CARESIM's projections of the private-public split of care costs by population sub-group are used in the macrosimulation model as described earlier.

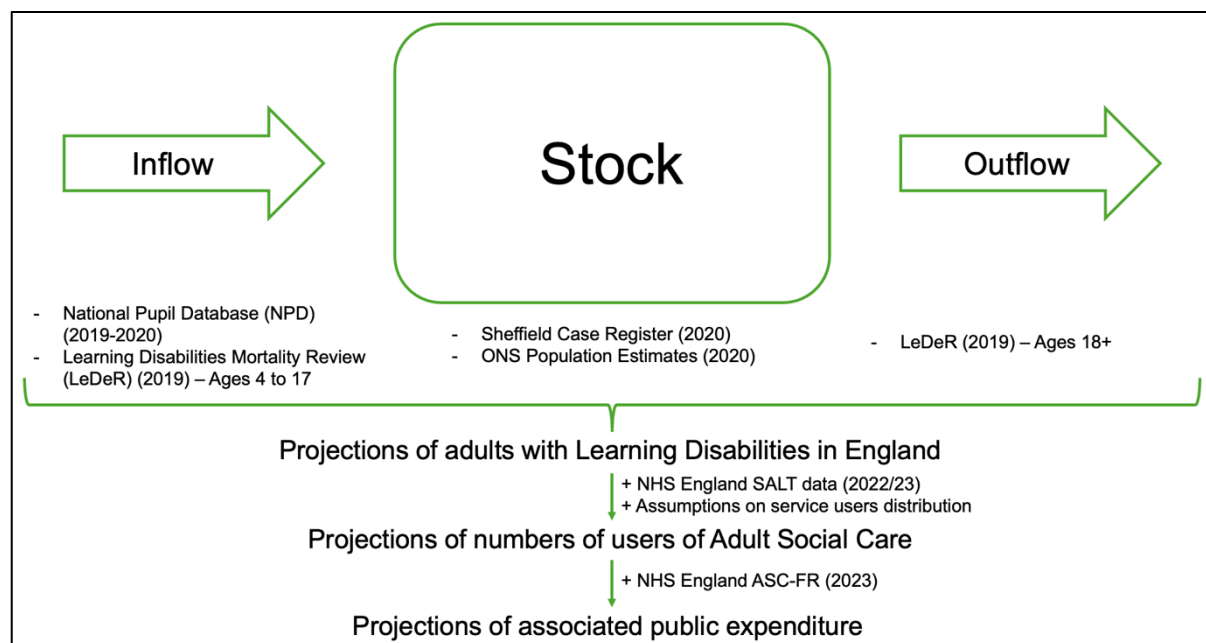
Younger Adults models

Learning Disability model

The learning disability (LD) projection model includes both younger adults (aged 18 to 64) and older people (aged 65 and over) with LD. This paper focuses on the projections for younger adults, since the older people’s model includes older people with LD.

This model produces projections of the number of adults with LD in England from 2022 to 2042 in a few key stages, including the number of users of adult social care (ASC) and the associated public expenditure (see Figure A1 for a summary overview of the model). First, the total ‘inflow’ into adulthood at age 18 of children with LD and potential need for ASC is estimated, using data from the National Pupil Database (NPD) (Office for National Statistics, 2020), with an adjustment for mortality before age 18. (The use of NPD data assumes that the criteria for recording children as having LD have remained constant over time). Second, the prevalent number of adults with LD in England for a base year, by age and severity of LD, is estimated using data from the Sheffield Case Register (Sheffield City Council, 2024). The national prevalence of LD, by age and severity, is assumed to be the same as in Sheffield; thus, the Sheffield prevalence rates are applied to the ONS population estimates for England in 2022. Third, the ‘outflow’ of adults is estimated based on mortality rates by age and severity using English Learning Disability Mortality Review (LeDeR) data from the University of Bristol (Heslop et al., 2020; Heslop et al., 2019).

Figure 10 Projections of Adults with Learning Disabilities in England – Inflow/Stock/Outflow Model



Source: Authors’ own elaboration.

The model covers three severity categories of LD: moderate, severe and profound and multiple LD. Mild LD is not included since people with mild LD are unlikely to meet the eligibility

criteria for local authority (LA) funded care. Numbers of adults aged 18 to 64 are projected for five age groups: 18-24, 25-34, 35-44, 45-54, and 55-64.

The inflow of 18-year-olds with LD who may require ASC services in England is estimated primarily using the annual school census (Office for National Statistics, 2020). This includes information on the number of children (aged 4 to 17) with Special Education Needs (SEN) in primary and secondary schools. The model includes children with SEN statement or Education Health Care Plan (EHCP) for moderate, severe, or profound and multiple learning disabilities (PMLD) in state-funded primary, secondary, special, and non-maintained special schools. Due to adolescents leaving school, the number of sixteen- and seventeen-year-olds in the 2019-2020 census drops. To account for this, the analysis utilises the 2018-2019 and 2017-2018 censuses for these age groups, respectively. These data are then adjusted for the effects of mortality prior to age 18 to calculate the number of children with moderate LD who will reach 18 years of age between 2022 and 2027 for moderate LD and between 2022 and 2031 for severe and profound LD. Mortality rates for children are calculated for each year of age and severity using data from the LeDeR annual reports (Heslop et al., 2020; Heslop et al., 2019)

NPD data cannot be used for years beyond 2027 for moderate LD and for years beyond 2031 for severe and profound LD. People who will turn 18 in 2031 had not yet all reached compulsory school age by 2019. Moreover, moderate LD appears to be under-recorded in the NPD for children in the youngest school years. For these reasons, for the years 2028 to 2042 for moderate LD and for 2032 to 2042 for severe and profound LD, the average number expected to turn 18 in the three preceding years is used on a rolling basis for the remaining years.

The prevalence rate of adults with LD for each age band and severity category is calculated based on data extracts from the 2020 Sheffield LD case register. This yielded information for over 3,000 adults by age profile and LD severity in Sheffield. Using data from ONS (2020) on the population of Sheffield, the prevalence of adults with moderate, severe and PMLD in Sheffield is calculated. The prevalence rates are lower at higher age bands.

The estimated number of adults with LD is then adjusted in future years for the expected effects of mortality. Mortality rates for adults aged 18 to 64 are calculated for three age groups (18-24, 25-49, and 50-64) and the three LD severity categories using data from the LeDeR annual reports (Heslop et al., 2020; Heslop et al., 2019). The LeDeR 2020 report is not used due to Covid-19.

The base year (2022) analysis is rooted in NHS England SALT data on numbers of LA funded service users with LD aged 18 to 64 on 31 March 2023 by type of service. In the absence of data on the numbers of service users by severity of LD, the services are grouped into two categories – residential and community. The base case assumption is that most of those in the PMLD group receive residential care, most of those receiving no LA funded care are in the moderate group and most of those in the severe group receive community-based care (see Table A1 for a more detailed note of these assumptions).

Table A1: Assumed distribution of service users by severity

Two thirds of the PMLD group are in care homes
The rest of the PMLD group all received community care
Those rest of those in care homes have severe LD
The rest of the severe group all receive community care
The rest of those receiving community care have moderate LD
The rest of the moderate group receive no formal care

The base case projection makes the important assumption that the proportion of service users by severity of LD who receive each type of care – residential, community or no formal services - will remain constant over time throughout the 20-year projection period to 2042.

The base year analysis is also rooted in NHS England 2022/23 ASC-FR data on LA gross and net (of income from user charges) expenditure on social care for service users aged 18 to 64 by primary support reason and type of service. For the projections, gross weekly unit costs and weekly income from user charges per user are calculated using the SALT and ASC-FR data. While weekly income from charges is assumed to remain constant in real terms over future years, unit costs are assumed to rise in real terms in line with Office for Budget Responsibility (OBR) assumptions on future productivity rates. This is subject to a higher assumed real increase for years in which real increases in the National Living Wage (NLW) have been announced and to a small part of the unit cost, representing costs that are neither labour nor capital, remaining constant in real terms over time.

Projected gross expenditure is calculated by applying the unit costs to the projected number of users of each service in each projection year and summing across services. Projected net expenditure by LAs is calculated in the same way after subtracting from unit costs the contribution from user charges.

Physical disability and mental health models

The younger adults' long-term care projection model, developed by the Care Policy and Evaluation Centre (CPEC), provides a framework for projecting the demand for care services, associated local authority expenditures, and workforce requirements for younger adults aged 18 to 64 with physical disability (including sensory impairment) or with mental health conditions. CPEC has developed a separate projection model for younger adults with learning disability.

Model structure

The younger adults' long-term care model projects three key variables: the future numbers of disabled younger adults and younger adults with mental health conditions by care setting, the likely demand for long-term care services for these groups and the costs to local authorities associated with meeting this demand. The model is a cell-based model (macro-simulation model) and takes the form of an excel spreadsheet. Unlike a forecast, it does not predict the future but instead simulates outcomes under specified assumptions about demographic and socioeconomic trends.

The model takes as its starting point ONS 2018-based principal population projections by gender and age band (18-24 and then 5-year bands to 60-64). The model's social care projections are thus consistent with the ONS official population projections.

The base year (2022) analysis is rooted in NHS England SALT data on numbers of service users aged 18 to 64 on 31 March 2023 by primary support reason and type of service. The primary support reason categories are grouped into two broad categories: physical disability including sensory impairment and mental health conditions (with learning disability not covered by this model). Since there is no breakdown by age or gender in SALT for service users aged 18-64, a breakdown drawn from data provided by three local authorities is used to stratify the service users into cells based on the age bands and gender in the population projections.

The base case projection makes the important assumption that the proportion of service users in each cell, that is by age and gender, who receive each type of care will remain constant over time throughout the 20-year projection period to 2042. The services covered comprise nursing homes, residential care homes, community care, direct payments, and short-term support.

The base year analysis is also rooted in NHS England 2022/23 ASC-FR data on local authority gross and net (of income from user charges) expenditure on social care for service users aged 18 to 64 by primary support reason and type of service. For the projections, gross weekly unit costs and weekly income from user charges per user are calculated using the SALT and ASC-FR data. While weekly income from charges is assumed to remain constant in real terms over future years, unit costs are assumed to rise in real terms in line with Office for Budget Responsibility (OBR) assumptions on future productivity rates. This is subject to a higher assumed real increase for years in which real increases in the National Living Wage (NLW) had been announced when this modelling was conducted and to a small part of the unit cost, representing costs that are neither labour nor capital, remaining constant in real terms over time.

Projected gross expenditure is calculated by applying the unit costs to the projected number of users of each service in each projection year and summing across services. Projected net expenditure by local authorities is calculated in the same way after subtracting from unit costs the contribution from user charges.

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