



Future Trends in Disability in Old Age

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Short Report

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Background

In this report we present updated projections of trends in disability, and disability-free life expectancy (DFLE), at older ages, and associated social care expenditure with a range of variant projections. The variant projections are produced in two ways: firstly by using the published low and high LE variant population projections; and secondly by applying scenarios of changing transitions to dependence, for example a 10% reduction in the incidence of low dependency (needs help less than daily). Additionally, we assess changes in DFLE against the UK government's Ageing Society Grand Challenge,¹ of increasing healthy, independent life years by five years by 2035, the latter amounting to an increase of 8% for both male and female DFLE. It is important to note that the projections presented in this report should not be treated as forecasts.

Methods

We used two linked projections models, which we developed in previous studies: the Population Ageing and Care Simulation (PACSim) model and the Care Policy and Evaluation Centre (CPEC) long-term care projections model.²⁻⁴ Full details of the two models and their assumptions are provided in the full report but brief details of each are provided here.

PACSim is a discrete time dynamic microsimulation model that simulates characteristics (sociodemographic, health behaviours, chronic diseases, geriatric conditions and dependency) of individuals aged 35 and over from three longitudinal studies: Understanding Society, the English Longitudinal Study of Ageing, and the Cognitive Function and Ageing Study II.⁵ Dependency was measured by the 'interval of need' (IoN),⁶ which categorises individuals according to the frequency with which they need care: high dependency (needs 24-hour care), medium dependency (needs help at regular times daily), low dependency (needs help less than daily), independent (free from care). Further details of the IoN classification, and how it was operationalised in the surveys, as well as harmonisation of other variables and imputation of missing values, are available online.⁷ For the current estimates we used the 2018-based England principal population projections⁸ and the survival probabilities underlying them. Projections of the prevalence of cognitive impairment by severity and level of need for care, separately by age group, gender and years of education from PACSim then form inputs to the CPEC long-term care projections model.

The **CPEC long-term care projections model** makes projections of five key variables: the future numbers of disabled older people; the likely level of demand for unpaid care; long-term care services and disability benefits; the public and private costs associated with meeting this demand; and the social care workforce required. It draws on a number of data sources, including ONS 2018-based population projections, Health Survey for England data for 2015 to 2017, and NHS Digital data on numbers of local authority funded older users of adult social care and expenditure on social care for older people in 2018/9. The projections presented here are based on a number of assumptions set out in the full report. They 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.

Variant projections

We examined two sets of variant projections. The first set used the high and low life expectancy variants from ONS rather than the principal projections. The second set of scenarios explored transitions to different levels of dependency, implemented in PACSim as follows:

- Scenario A: reductions in transitions from independent to mild dependency;
- Scenario B: reductions in transitions from mild to moderate dependency and increases in transitions from mild dependency to independence;
- Scenario C: reductions in all worsening transitions (independent to mild, mild to moderate, moderate to high) and increases in recovering transitions (mild to independent, moderate to mild) (we assume recovery from high dependency to moderate dependency is negligible);
- Scenario D: the opposite of scenario C with increases in all worsening transitions and reductions in all recovery transitions (apart from recovery from high dependency);
- Scenario E: Scenario D but under the assumption of mortality rates as per the low LE variant.

For scenarios A and B we examine 'optimistic' changes in transition probabilities of 10% and 20% per year, that is decreases of 10% and 20% in transition probabilities to more severe states and increases of 10% and 20% to less severe states; for scenario C, and the 'pessimistic' scenarios D and E we examine changes of 10% only. We assume the reductions/increases begin in 2020 and in age group 65 and over only. Two studies examining the effect of obesity and physical activity on the risk of disability informed the magnitude of change in transition probabilities of 10% and 20% per year,^{9,10} though it should be noted that other interventions might have greater or lesser effects on transition probabilities.

Results

In England, between 2018 and 2038, the projections suggest:

- Independent life expectancy will increase by 14.7% (from 13.0 to 14.9 years) for men, thereby exceeding the 8% government target, but only 4.7% for women (from 11.1 to 11.6 years) for women, falling short of the government target.
- Compared to earlier projections, our new estimates accounting for the stalling of life expectancy result in 1.8% fewer older people aged ≥65 years who are independent, and 12-15% fewer with low, moderate and high dependency by 2038.
- The number of older people with ADL limitations will increase by 19.3% (from 1.7 to 2.0 million), users of community-based care by 44.9% (from 346,000 to 501,000), and older people living in care homes by 47.8% (from 318,000 to 470,000).
- Local authority social services expenditure will increase by 84.2% (from £8.4 to £15.4 billion), private expenditure on social care by 108.4% (from £7.8 to £16.3 billion), and total expenditure by 94.1% (from £18.3 billion or 0.87% of GDP, to £35.5 billion of 1.25% of GDP), in constant 2018 prices.
- Assuming low or high LE variant population projections, the percentage increase in the number of older people with ADL limitation ranged from 14.1% (low LE) to 22.1% (high LE), and the percentage increase in total expenditure on social care from 84.2% (low LE) to 96.7% (high LE).
- In comparison with the base case, the most optimistic scenario (Scenario C) will have the largest reduction in the number of people with ADL limitations, the lowest number of care recipients, and the lowest total expenditure (£33.8 billion in 2038, 1.19% of GDP) (Figure 1). Scenario C also resulted in increases in years spent independent over the period of 17.7% (men) and 11.2% (women), exceeding the 8% equivalent to the UK government's Ageing Society Grand Challenge.
- Our most pessimistic scenario (Scenario E) will have the highest number of care recipients and highest total expenditure (£37.0 billion in 2038, 1.30% of GDP – Figure 1) despite fewer numbers with ADL limitations compared to the base case.

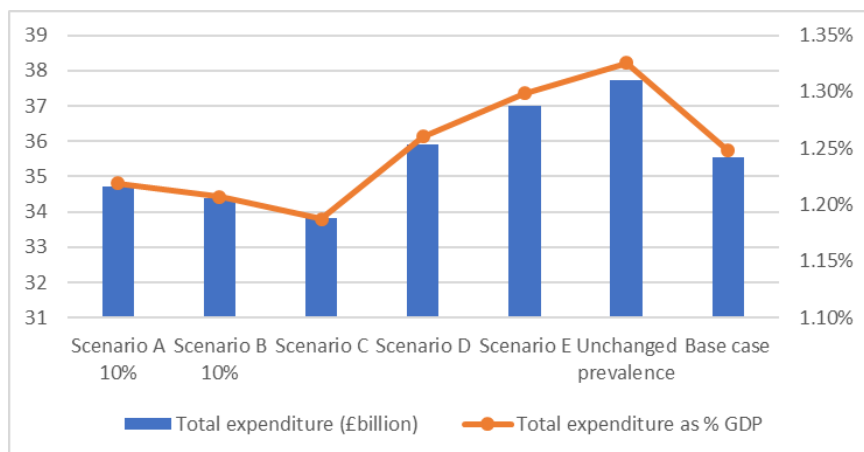


Figure 1: Projected expenditure on social care for older people in England in 2038 for different scenarios of change in transitions (£billion, 2018 prices, and % GDP)

Conclusions

Interventions that slow down onset of all levels of disability, as well as improving recovery, could significantly reduce the projected increase in numbers of older people with ADL limitations, numbers of care recipients and total expenditure on social care. Additionally, such interventions would result in increases in independent life expectancy exceeding the UK government's Ageing Society Grand Challenge, of increasing healthy, independent life years by five years by 2035. The more positive projections for men than women reflect the greater levels of disability that women experience compared to men, and that, for future cohorts, a lower proportion of women than men will be independent when they enter the older population.

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