Future Demand for Social Care, 2005 to 2041: Projections of Demand for Social Care for Older People in England

Report to the Strategy Unit (Cabinet Office) and the Department of Health

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FUTURE DEMAND FOR SOCIAL CARE AND SUPPORT, 2005 TO 2041: PROJECTIONS OF DEMAND FOR SOCIAL CARE AND DISABILITY BENEFITS FOR OLDER PEOPLE IN ENGLAND

This paper presents projections of demand for social care and disability benefits for older people (aged 65 and over) in England to 2041 and associated future expenditure. The projections were produced using an updated and expanded version of the Personal Social Services Research Unit's (PSSRU) long-term care projections model. The version of the model used here has a base year of 2005 and incorporates the 2006-based official population projections. This set of projections was commissioned jointly by the Department of Health (DH) and the Strategy Unit (Cabinet Office) (SU).

The projections presented in this paper are an updated version of those discussed in Wittenberg et al (2006). They cover publicly and privately funded social care – assessments, community-based services and residential care. They also cover disability benefits relevant for care – attendance allowance (AA) and disability living allowance (DLA) care component. They do not cover supported housing because of lack of suitable data, nor do the projections reported here cover health care which was not part of the remit.

1. Description of the PSSRU long-term care projections model

The PSSRU 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 free personal care. It does not involve forecasting future policies or future patterns of care.

The model is updated regularly as new data become available, in particular new versions of the General Household Survey, population projections, data on numbers of older people in care homes and on numbers of users of home care services and estimates of the unit costs of care. The version of the model that has been used to make the projections in this paper utilises data from the 2001/2 General Household Survey, the 2005 PSSRU survey of older care home admissions, official 2006-based population projections, March 2006 data on residential care and home-based care, expenditure data for 2005/6 and unit costs adjusted to 2005/6 prices.

Data and methods are discussed in detail in Wittenberg et al (2006).

2. Base case assumptions and projections

The PSSRU model produces 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 of the model are summarised in box 1 below. The base case projections take account of expected changes in factors exogenous to long-term care policy, such as demographic trends. The base case projections 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.

Box 1

KEY ASSUMPTIONS OF THE BASE CASE OF THE PSSRU MODEL

- **The number of people by age and gender changes in line with the Government Actuary's Department 2006-based population projections (GAD, 2007).**
- **Marital status changes in line with GAD 2003-based marital status and cohabitation projections (ONS, 2005): as these projections run to 2032, the 2031 marital status rates are applied to 2041.**
- **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 by age and gender remain unchanged, as reported in the 2001/2 General Household Survey (GHS) for Great Britain.**
- **Home-ownership rates, as reported in the 2001/2 Family Resources Survey (FRS), change in line with projections produced by the University of Essex (Hancock, 2005).**
- **The proportions of older people receiving informal 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 by 2% per year in real terms (but non-revenue staff costs remain constant in real terms). Real Gross Domestic Product rises in line with HM Treasury assumptions (HM Treasury, 2007).**
- **The supply of formal care will adjust to match demand[1] and demand will be no more constrained by supply in the future than in the base year.**

The GAD/ONS 2006-based principal population projections for England project that between 2005 and 2041 the numbers of people aged 65 or over will rise by 83%. The numbers of those aged 85 or more are projected to rise faster during this period, by over 220%, from almost 1 million in 2005 to around 3.2 million in 2041. Much of this increase is a result of a projected rise in male life expectancy.

[1] The model effectively assumes that the assumed real rise in care costs will be sufficient to ensure that supply will rise to meet projected demand.

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 problems with at least one activity of daily living (ADL), would grow by 108% between 2005 and 2041, from around 2.4 million to around 4.95 million. The number of older people with moderate or severe disability, that is needing help with one or more ADL tasks, would increase by 122% from around 950,000 to around 2.1 million.

The numbers of disabled older people in households receiving informal care are projected to increase by 102%, from approximately 1.75 million in 2005 to over 3.5 million in 2041. The numbers of disabled older people receiving care from a spouse or partner are projected to increase faster than the numbers receiving care from an adult child, under base case assumptions. Yet care by children will still need to increase by approximately 90% over the next 35 years, if the proportion of disabled older people (by age, gender and marital status) receiving care from their children is to remain the same as it is today.

The numbers of users of non-residential formal services would need to rise by 102%, from 1.5 million to 3.1 million, to keep pace with demographic pressures; and the numbers of older people in care homes (and long-stay hospital care) would need to rise by 139%, from 345,000 to 825,000.

Projected public expenditure on social care and disability benefits would grow by 226%, from £13.1 billion in 2005 to over £42.7 billion in 2041 in constant 2005 prices. If Gross Domestic Product rose in line with HM Treasury assumptions**,** long-term care expenditure would grow from 1.2% of GDP in 2005 to 2.0% in 2041. Within these totals, public expenditure on social care, net of income from user charges, is projected to rise by 329% from £6.6 billion in 2005 to £28.4 billion in 2041. Public expenditure on disability benefits is projected to rise by 121% from £6.5 billion in 2005 to £14.3 billion in 2041. The reason for the different projected growth rates is that, while the real unit costs of care are assumed to rise by 2% per year, the real unit costs of disability benefits are assumed to remain constant.

3. Sensitivity analysis: the effect of changes in the key assumptions

This section investigates the sensitivity of the projections to changes in the base case assumptions, in particular to changes in the assumptions about life expectancy, disability rates and the unit costs of care.

Assumptions about increases in life expectancy

Mortality rates in old age are the key factor affecting the projected number of older people (Murphy, 1995). The base case of this version of the model uses the Government Actuary's Department (GAD) 2006-based principal population projection (GAD, 2007). The sensitivity analysis uses GAD's higher and lower life expectancy variants to their principal population projections.

Using the GAD low life expectancy variant public expenditure on social care and disability benefits for older people would rise by 193% between 2005 and 2041,

compared to 260% using the GAD high life expectancy variant and 226% under the base case. As a percentage of GDP, the GAD low life expectancy variant projects long-term care expenditure to increase from 1.2% in 2005 to over 1.8% in 2041. The GAD high expectancy variant projects public expenditure to be over 2.2% of GDP in 2041.

Assumptions about trends in functional disability

There are different views about whether age-specific disability rates can be expected to rise, fall or remain broadly constant in the future (Bone et al 1995 and Dunnell 1995). Constant age-specific disability rates may be regarded as a neutral assumption and this is our base case. Yet, if age-specific disability rates remain constant while life expectancy rises, the number of years with disability will rise as well as the number of years without disability.

A less pessimistic assumption for future disability would be to assume that, as life expectancy rises, the number of years without disability rise by the same amount and the number of years with disability remains constant. An assumption on these lines was developed by Wiener et al. (1994). This assumption (referred to as the 'Brookings assumption') involves moving the age-specific disability rate upward by one year for each one year increase in life expectancy. The 'half-Brookings' scenario assumes that, for one-year increases in life expectancy, disability rates would shift to people half a year older. In addition to these two scenarios, four more stylized scenarios were tested in which age-specific disability rates fall by 0.25% or 0.5% per year or rise by 0.25% or 0.5% per year.

Public expenditure on social care and disability benefits for older people is projected to increase by 107% between 2005 and 2041 under the Brookings assumption, by 170% under the half-Brookings assumption, by 177% under the 0.5% decline assumption or by 200% under the 0.25% decline assumption, compared to 226% with constant disability rates. As a percentage of GDP, public expenditure is projected to increase by 2041 to 1.3% of GPD under the Brookings scenario, 1.7% of GDP under the half-Brookings scenario or the 0.5% decline scenario and 1.9% of GDP under the 0.25% decline scenario, as compared with 2.0% of GDP under the base case.

Under more pessimistic scenarios, public expenditure on social care and disability benefits for older people is projected to increase by 285% between 2005 and 2041 under the 0.5% increase assumption or by 255% under the 0.25% increase assumption, compared to 226% with constant disability rates. As a percentage of GDP, public expenditure is projected to increase by 2041 to 2.4% of GPD under the 0.5% increase scenario or 2.2% of GDP under the 0.25% increase scenario, as compared with 2.0% of GDP under the base case.

These findings show that projections of demand for long-term care are highly sensitive to assumptions about trends in disability rates. Falling disability rates would off-set part of the impact of the rise in numbers of older people. If falling mortality rates are accompanied by falling disability rates, the impact of demographic pressures on demand for long-term care would be mitigated.

Assumptions about unit costs and economic growth

The base case of the model assumes that the real unit costs of care, such as the cost of an hour's home care, will rise by 2% per year, in line with HM Treasury's assumption for average earnings. Gross Domestic Product is also assumed to rise in line with the H M Treasury's assumption, which is also 2% per year in real terms over the long-term. Disability benefit rates, however, are assumed to remain constant in real terms.

The key driver of rises in the unit costs of care is rises in the earnings of staff providing long-term care. Home care and day care are clearly highly labour-intensive. Residential care is also labour intensive, with staff costs accounting for the majority of overall costs. For example, data from a UK study shows that, in public sector homes, staff costs accounted for 85% of the total unit cost (Netten et al., 1998). This suggests that it would be plausible to assume that the real unit costs of care will rise broadly in line with average earnings of care staff, or perhaps by somewhat less allowing for non-staff costs (Wittenberg and Comas-Herrera, 2003).

Two additional scenarios are examined here. The first assumes that there will be a 0.5% greater increase in unit costs of care than is modelled in the base case, that is unit costs would rise by 2.5% per year in real terms. The second assumes that unit costs of care will rise by 1.5% per year in real terms, 0.5% less than the base case. Modelling moderate increases and decreases in unit costs of care around the base case demonstrates the sensitivity of the model to changes in this variable over time.

Under the assumption that unit costs of care rise by 2.5%, public expenditure on social care and benefits would rise by 269% between 2005 and 2041, to £48.3 billion, compared to £42.7 billion under the base case. Overall public expenditure would represent 2.3% of GDP in 2041 under this variant assumption, compared to 2.0% under the base case. Were unit costs to rise by 1.5%, public expenditure on care and benefits would rise by 191% to £38.1 billion in 2041. This would represent 1.8% of GDP in 2041. These variants illustrate how sensitive projections of long-term care expenditure are to assumptions about rises in the real unit costs of care.

4. Conclusions

The model produces projections of future public expenditure on care and disability benefits based on a specified set of base case assumptions. This set of assumptions seems plausible but is clearly not the only possible set. As the sensitivity analysis demonstrates, the projections are sensitive to changes in those assumptions. This means that the projections should not be regarded as forecasts of the future.

The sensitivity analysis shows that projected future demand for social services and disability benefits for older people is sensitive to assumptions about future numbers of older people and about future prevalence rates of disability. Projected future public expenditure on care and disability benefits for older people is also sensitive to

assumptions about future rises in the real unit costs of services, such as the cost of an hour's home care.

The results show that the numbers of disabled older people receiving informal care are projected to approximately double over the next 35 years. It is not clear however that the supply of informal care will rise to meet this demand (Pickard *et al* 2007). Informal care, particularly by the adult children of disabled older people, may indeed decline in future, as a result of such factors as women's rising participation in the labour market.

These expenditure projections do not constitute the total costs to society of long-term care for older people. That would require 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 informal care. 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.

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