Future Demand for Social Care, 2005 to 2041: Projections of Demand for Social Care and Disability Benefits for Younger People in England

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

Raphael Wittenberg, Juliette Malley, Adelina Comas-Herrera, José-Luis Fernández, Derek King, Tom Snell and Linda Pickard

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FUTURE DEMAND FOR SOCIAL CARE, 2005 TO 2041: PROJECTIONS OF DEMAND FOR SOCIAL CARE AND DISABILITY BENEFITS FOR YOUNGER ADULTS IN ENGLAND

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LSE HEALTH AND SOCIAL CARE
LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

FUTURE DEMAND FOR SOCIAL CARE, 2005 TO 2041: PROJECTIONS OF DEMAND FOR SOCIAL CARE AND DISABILITY BENEFITS FOR YOUNGER ADULTS IN ENGLAND

This paper presents projections of demand for social care and disability benefits for younger adults (aged 18 to 64) in England to 2041 and associated future expenditure. The projections were produced using a new projections model for younger adults developed by the Personal Social Services Research Unit (PSSRU) on the lines of their long-term care projections model for older people (Wittenberg et al, 2006). The model and projections were commissioned jointly by the Department of Health (DH) and the Strategy Unit (Cabinet Office) (SU).

The model covers publicly funded local authority social care and disability benefits. It does not cover supported housing because of lack of suitable data, nor does it cover health care which was not part of the remit. It also does not cover privately funded social care, on which there is no available evidence: private purchase of care by younger adults is expected to be limited.

The model produces projections of:

- numbers of disabled younger adults, by broad client group;
- numbers of assessments of younger adults;
- numbers of younger disabled adults receiving informal care support;
- numbers of users of residential and community-based social services;
- numbers of recipients of Disability Living Allowance (DLA) care component;
- numbers of recipients of Independent Living Fund (ILF) payments;
- public expenditure on social services for younger adults, gross and net of income from user charges, and on DLA care component and ILF;
- numbers of staff providing social care for younger adults.

The client group breakdown is:

- people with learning disabilities;
- people with physical or sensory impairments;
- other groups (such as people with mental health problems) combined.

The analyses focus on the first two of these groups, which account for around 75% of net expenditure on younger adult social services (Information Centre, 2007).

The first part of the paper describes the various data used in the modelling. The second part describes the projections model. The third part presents a set of base case assumptions and the projections obtained using those assumptions. The fourth part investigates the sensitivity of the projections to changes in those assumptions. A final section sets out some conclusions.

1. Data Sources

The model uses a range of data sources since no one data set could meet all the needs of the project. The modelling has been constrained by lack of data on some variables. The key sources are outlined briefly.

Office for National Statistics: 2005 mid-year population estimates for England by age and gender, 2006- population projections by age and gender, and 2003-based marital status and cohabitation projections are central to the first part of the model. Census 2001 data are used on numbers of younger adults in communal establishments, by age, gender and marital status.

Data on the prevalence of learning disability and on the socio-economic characteristics, severity of disability, use of services and receipt of benefits for young adults with learning difficulties was obtained from the survey “Adults with Learning Difficulties in England 2003/4” (Emerson et al., 2005). It should be noted that fewer adults with learning difficulties living in private households were identified in the survey than had been expected. The researchers felt that the wording of the questions asked in the survey to identify people with learning disabilities probably resulted in an under-estimate of the numbers with mild learning disabilities. The prevalence of learning disability drawn from this survey and used for modelling purposes is, therefore, likely to represent severe learning disability but to under-represent the total number of younger adults with a learning disability.

Family Resource Survey (FRS) data for 1996/7, including in particular data from the Disability Follow-up survey covering the following topics: prevalence, severity and types of disability; socio-demographic characteristics; economic activity; financial circumstances; use of social and health services; needs for assistance; and social participation. The FRS data was used to derive an estimate of the prevalence of physical disability among 18 to 64s in England, as well as to break down the young disabled population by age, gender marital status, living arrangements and level of disability. It was also used to estimate the likelihood of receipt of benefits and of formal and informal care in the community.

Tribal Secta data from their 2005 study, which were provided by DH, have been used on the age and gender distribution of recipients of residential and community-based services (other than for people with learning disability). These data were collected as part of a study funded by DH to review the resource allocation formula used to distribute social care resources for younger adult groups equitably between local authorities in England.

Health and Social Care Information Centre:

- Supported Residents (SR1) data on the numbers of supported residents in care homes on 31 March 2006;
- Referrals, Assessments and Packages (RAP) data on the number of assessments during 2005/6 and of users of community-based services on 31 March 2006;

- PSS expenditure (EX1) data on the unit costs of services, the average intensity of community-based services and gross and net expenditure on services in 2005/6;
- SSD001 for September 2005 on the numbers of staff working in the local authority sector.

Data collected by PSSRU at Kent as part of the user experience survey for younger adults with physical and sensory impairments receiving service to support them to live in their own homes, have been used to investigate the age and gender distribution of recipients of community-based services for a wider range of services than those covered in the Tribal Secta dataset. These data have only been used for those with physical and sensory impairments.

Department for Work and Pensions (DWP) data on the numbers of recipients of Disability Living allowance (DLA) care component by age, gender and condition in November 2005.

Independent Living Fund (ILF) data on numbers of recipients by age and gender and on expenditure in 2005/6.

Estimates from Eborall (2005) of the numbers of staff in social care in the independent sector in 2004 (these are the most recent figures publicly available).

2. Description of the PSSRU projections model

The PSSRU projections model aims to make projections of four key variables: the future numbers of disabled younger adults, the likely level of demand for social services and disability benefits for younger adults, 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. It does not involve forecasting future policies or future patterns of care.

The model is cell-based (a macro-simulation model) and takes the form of a spreadsheet. It consists of four main parts. The first part estimates the numbers of younger people with different types and levels of disability by age group, gender and household composition. The second part estimates the levels of informal care, social services and disability benefits required, by attaching a probability of receiving services to each cell. The third part of the model estimates total gross and net social services expenditure and expenditure on disability benefits. Finally, a fourth part relates to the social care workforce.

Projected numbers of disabled younger adults

The first part of the model divides the younger adult population according to a number of characteristics relevant to the receipt of social services and disability benefits, such as disability, marital status and whether living alone. The model uses the Government Actuary's Department (GAD, 2007) 2006-based population projections as the basis for the numbers of people by age band and gender in each year under consideration until 2041.

The younger adult population by age and gender are divided, using data from the 2001 Census, into those living in private households, in care homes or other care establishments (such as hospitals) and in other communal establishments (such as prisons). The final group are omitted from the rest of the modelling: their numbers are assumed to remain a constant proportion of the younger adult population by age and gender

The numbers in care homes are divided between the client groups and between local authority funded residents and others (who would be NHS or privately funded residents, for whom there are no separate data) using data from local authority Supported Residents SR1 returns. For this purpose the SR1 totals for younger adults by client group are divided by age and gender using data from the Emerson study for learning disabilities and from the Secta study for other client groups. The proportions in local authority funded residential care are assumed to remain constant by age, gender and household composition. The proportions in non-local authority supported residential care are similarly held constant.

The household population are first divided into those with and without learning disabilities. The definition of learning disability is that used in the Emerson study (Emerson et al. 2005), as explained above, and the prevalence rates of learning disability by age and gender are derived from the Emerson study. The learning disabled group are then divided by whether or not living in supported accommodation, marital status/household composition and severity of disability (whether or not experiencing difficulty with activities of daily living, ADLs) using the Emerson data.

The residual household population, that is excluding those with learning disabilities, are then divided by age and gender into those with and without physical or sensory impairment using data from the 1996/7 FRS. The physically disabled group are then divided by marital status/household composition and severity of disability (numbers of instrumental activities of daily living, IADLs) using the FRS data.

The estimate of prevalence of physical disability is based on the OPCS list of physical problems on the grounds of activity and self-care. Individuals were counted as disabled if they experienced any of the physically related problems listed in Tables 9 and 10 in the Appendix attached. In order to avoid overlap between user groups, the indicator of physical disability excluded individuals with a learning disability (defined in the FRS survey as having a mental handicap or other severe learning difficult) regardless of their physical disabilities. It should be noted that some of those who are disabled in the FRS under the OPCS definition have no IADL limitations and some have mental health problems.

A significant number of individuals in the FRS survey who stated to be in receipt of DLA were not classified as having a physical disability as defined above (it is likely that a significant proportion of these individuals would have mental health problems). This group of individuals was therefore modelled separately in the analysis.

This means that the first part of the model divides the population by age, gender and whether learning or physically disabled, and, if disabled, by severity of disability and by marital status/household composition. Note that the model does not include a breakdown by whether or not having mental illness, substance abuse or other conditions.

Projected numbers receiving informal care, formal services and disability benefits

The second part of the model projects the volumes of informal care, formal services and disability benefits demanded, by combining the output of the first part of the model (the projected numbers of younger adults by disability, household composition and other characteristics) with functions that assign receipt of informal care, formal services and benefits to each sub-group of the younger adult population.

Receipt of informal care by younger adults with learning or physical disabilities living in the community is based on analyses of the Emerson data for learning disability and the FRS data for physical disability. The analyses consider the probability of receiving informal care by age, gender, severity of disability and household composition. A breakdown by source of informal care or intensity of informal care has not proved feasible partly because of time constraints and partly because of data limitations. Unlike in the projections model for older people, receipt of formal care is not linked with receipt of informal care in the model for younger adults. This means that in the model, changes in levels of formal services do not affect levels of informal support, and vice versa.

Younger adults with disabilities (all client groups) living in the community are assigned receipt of local authority community-based services. The total numbers of recipients of local authority services by client group are based on Referrals, Assessments and Packages of Care (RAP) data for 31 March 2006. Analyses of the Emerson data for learning disability and the FRS data for physical disability were conducted to breakdown the RAP totals by age, gender, severity of disability and household composition. Analyses of the Secta data were used to breakdown the RAP totals for mental health and other conditions by age and gender. These were supplemented by data from the user experience survey for those with physical and sensory impairments. It should be noted that the breakdown by client group in the RAP data is based on councils’ decisions on the service user’s primary condition.

A similar approach was used for receipt of DLA care. Total numbers of recipients by age, gender and condition are based on DWP data for November 2005. Analyses of the Emerson data for learning disability and the FRS data for physical disability were conducted to breakdown the DWP totals by severity of disability and household composition. For the ILF, data were used on receipt of payments by age, gender and client group.

The estimates of numbers of service recipients were multiplied by estimates of the average intensity of service receipt, i.e. the average number of home help hours or day care sessions per recipient week. Information on intensity of service receipt by client group is based on PSS EX1 unit costs data (by dividing cost per client week by cost per hour or session).

The number of assessments and the number of clients receiving care management are also included in the model. The number of assessments is based on RAP data for 2005/6 and is assumed to rise in line with the projected number of disabled younger adults. All recipients of local authority funded community-based services are assumed to receive care management. This means that the number of clients receiving care management is assumed to rise in line with the projected number of recipients of these services.

Projected aggregate expenditure on services and benefits

The third part of the model projects total expenditure on the formal services and benefits demanded, by applying unit costs to the volume of services and benefits projected in the second part of the model.

Expenditure on local authority funded services is divided between local authority social services and users on the basis of 2005/6 PSS EX1 data on the proportion of gross costs of social services met by user charges. The average weekly amounts met by users are held constant in real terms for future years. This assumptions reflects the fact that the majority of service users rely on benefits as their main source of income, and benefits are not expected to grow above the rate of inflation.

Estimated net and gross expenditure on local authority funded services plus expenditure on assessment and care management is grossed to match PSS EX1 expenditure data for 2005/6. The grossing factors estimated for 2005/6 are then applied to all projection years to 2041.

Expenditure on disability benefits and ILF payments are estimated separately, by multiplying the numbers of recipients by the weekly average amounts. Projected expenditure on disability benefits can be added to projected net public expenditure on services (net of user charges) to produce projected public expenditure on services and cash benefits. It cannot, however, be added to total gross expenditure on services. That would involve double-counting since an (unknown) proportion of disability benefit expenditure is used to meet user charges for local authority services

Social care workforce

A fourth part of the model makes projections of the numbers of social care staff required to provide the projected volume of social services, for different groups of social care staff. Department of Health estimates on staff numbers by category of staff and service have been used for 2005. Estimates of the size of the independent sector workforce and the distribution of staff by category and service have been obtained from Eborall (2005). EX1 data on the distribution of social services expenditure by client group (children, young adults and older adults) was used in order to allocate the local authority staff employed in generic services to each of the client groups. It was also used to divide the total numbers of staff in the independent sector by client group. For care staff, it is assumed that the ratio of staff to services (e.g. home care hours, day care sessions) remains constant to 2041. For administrative and managerial staff, it is assumed that the ratio of such staff to care staff remains constant over the projection years[1].

3. 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 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. 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.

Box 1

KEY ASSUMPTIONS OF THE BASE CASE OF THE PSSRU MODEL

- The number of younger adults by age and gender changes in line with the Government Actuary's Department 2006-based population projections (GAD, 2007).
- Marital status rates for physically disabled younger adults change (to 2032) in line with GAD 2003-based marital status and cohabitation projections (ONS, 2005), while those for learning disabled people remain constant.
- There is a constant ratio of single people living alone to single people living with others.
- Prevalence rates of learning disability by age and gender change in line with the projections by Emerson and Hatton (2004) and the prevalence rates of physical disability by age and gender remain unchanged as reported in the 1996/7 FRS.
- The proportions of younger adults receiving informal care, formal community care services, residential care services and disability benefits remain constant for each sub-group by age, gender, client group, disability and other needs-related characteristics.
- The real unit costs of social services and of ILF payments rise by 2% per year in real terms (but non-revenue staff costs remain constant in real terms); but DLA rates remain constant in real terms.
- Real Gross Domestic Product rises in line with HM Treasury assumptions (HM Treasury, 2007).

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[1] Due to lack of comprehensive data, staff working on the provision of supported housing, meals services and services purchased using direct payments were not included.

- The supply of formal care will adjust to match demand[2] and demand will be no more constrained by supply in the future than in the base year.

The GAD 2006-based principal population projections for England project that between 2005 and 2041 the numbers of people aged 18 to 64 will rise by 15.9%, from 31.3 million in 2005 to 36.3 million in 2041. There will be slight decline over this period in the numbers aged 35 to 44, with increases in the numbers aged 18 to 34 and those aged 45 to 64.

Under the base case assumptions, the numbers of learning disabled younger people, defined using the definition in the Emerson study, would rise by 20.6% between 2005 and 2041, from around 203,000 in 2005 to around 245,000 in 2041. This takes account of the projected changes in prevalence rates discussed in Emerson and Hatton (2004). Similarly, under the base case assumptions, the numbers of physically and sensorily impaired younger people, defined as discussed above, would rise by 17.4% between 2005 and 2041, from 2,755,000 to 3,235,000. This is on the basis of unchanged prevalence rates by age and gender. Projections have not been produced for numbers of younger adults with mental health problems or other conditions, as discussed above, but some of those with learning or physical disabilities may also have mental health problems.

The numbers of learning or physically disabled younger adults in households receiving informal care are projected to increase by 15.5%, from approximately 960,000 in 2005 to around 1,110,000 in 2041. This is on the basis that the probability of receipt of informal care remains constant by age, gender, household composition and severity of disability.

The numbers of assessments of younger adults (all client groups) are projected to rise by 17.7%, from 585,000 in 2005 to 685,000 in 2041. This is on the basis that the numbers of assessments rise in line with the projected numbers of disabled people (or service users in the case of mental health and other conditions).

The numbers of users of local authority home care services (all client groups) would need to rise by 18%, from 75,000 in 2005 to 90,000, in 2041 to keep pace with demographic pressures; and the numbers of users of day care services by 19%, from 95,000 in 2005 to over 110,000 in 2041. The number of younger adults in local authority funded residential care would need to rise by 21%, from just under 60,000 in 2041 to over 70,000 in 2041.

The numbers of recipients of DLA care (all groups including those without disability under OPCS definition) would need to rise by 17.6%, from 1,160,000 in 2005 to 1,365,000, in 2041 to keep pace with demographic pressures. This is on the basis that take-up remains constant by age, gender, household composition and type and severity of disability. This projection cannot be directly compared with DWP projections that assume rising take-up.

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[2] 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.

The number of social care staff caring for disabled younger adults is projected to rise from around 310,000 (headcount) in 2005 to around 370,000 (headcount) in 2041, an increase of 20.5%.

Gross public expenditure on social care is projected to rise by 140%, from £5.4 billion in 2005 to £12.9 billion in 2041 in constant 2005 prices. Net public expenditure on social care (net of user contributions) is projected to rise by 148%, from £5.0 billion in 2005 to £12.5 billion in 2041. This is on the basis that the real unit costs of care rise by 2% per year but that user contributions remain constant in real terms. If Gross Domestic Product rose in line with HM Treasury assumptions**,** net public expenditure on social services for younger adults would grow from 0.47% of GDP in 2005 to 0.59% in 2041.

Expenditure on DLA care is projected to rise by 17.5%, from £2.2 billion in 2005 to £2.6 billion in 2041, at constant 2005 prices. This is on the basis that weekly DLA care payments remain constant in real terms.

Net public expenditure on social care and benefits (DLA care and ILF) is projected to rise by 110%, from £7.4 billion in 2005 to £15.6 billion in 2041, at constant 2005 prices (Figure 1). If Gross Domestic Product rose in line with HM Treasury assumptions**,** net public expenditure on social services and disability benefits for younger adults would grow from 0.69% of GDP in 2005 to 0.74% in 2041.

4. Impact of changes in model assumptions

The analysis has explored the impact on the projections of changes in assumptions about three key factors:

- numbers in the population
- prevalence of disability
- unit costs of services

The impact on the projections of the range of scenarios explored is illustrated through line graphs, which interpolate linearly values for the years for which the model does not produce estimates directly.

Changes in population assumptions

In addition to the GAD principal population projections, the analysis explored the impact of the GAD low and high migration population scenarios on the model projections.

Changes in the projected size of the overall younger adult population inevitably affect most of the quantities estimated in the model, and particularly the number of disabled individuals, the number of people receiving care and benefits, and the levels of expenditure. An important caveat is that the modelling of the impact of the variant migration scenarios implicitly assumes that the prevalence of disabilities among migrants is the same as that of the general population. If prevalence rates of disability among migrants are lower than those for the rest of the population, the impact of the high migration scenario on demand for services and disability benefits would be less than projected by the model.

As explained above, population size, and its impact on demand for services, is not directly linked in the model to changes in the unit cost of services. It is therefore possible that the expenditure implications of the low and high migration scenarios could be somewhat larger than estimated in the model, if the impact on expenditure of changes in levels of demand for services were to be compounded by subsequent changes in the unit costs of services.

Overall, however, the results suggest that assuming either the low or high migration scenarios does not alter any of the projected quantities in the base scenario by more than 5% upwards or downwards by 2041 (the year where the effect would be the greatest).

Changes in assumptions about prevalence of disability

The analysis has explored four alternative physical disability prevalence scenarios, which assume decreases and increases of 0.5% and 0.25% per year (not percentage points) in the prevalence rates of physical disability.

A reduction of 0.5% per year in the prevalence rates of physical disability translates by 2041 into a reduction of approximately 534,000 in the number of young adults with physical disabilities, equivalent to 17% of the total number in the base case in 2041. An increase of 0.5% per year in the prevalence of physical disabilities yields an increase of approximately 636,000 disabled people (equivalent to a 20% increase).

The proportional impact of changes in the prevalence of physical disability on the number of service users and on levels of public expenditure mirrors the patterns for the numbers of physically disabled. Hence, a 0.5% increase and a 0.5% decrease in the prevalence rate yield an increase of 20% and a reduction of 17% in the projected levels of expenditure and number of recipients relative to the 2041 base case levels, respectively. As a result, the total public net spending on young adults with physical disabilities is projected to increase by £615 million relative to the base case, assuming a 0.5% increase in the prevalence of disability. A yearly reduction of 0.5% in the prevalence rate reduces the projected levels of net public spending (care and benefits) by £515 million.

The relative impact of changes in the prevalence of physical disability on the number of informal carers projected by the model is more modest, with 0.5% increase and reduction in the prevalence rate projected to increase and decrease the number receiving informal support by 9% and 8%, respectively.

In addition to exploring 0.25% and 0.5% increases and decreases in the prevalence of learning disability, the analysis has examined a scenario which keeps constant through time the age and gender-specific prevalence rates of learning disabilities.

Increasing the prevalence rates of learning disability by 0.5% per year results by 2041 in an increase in the projected number of people with learning disabilities of 37,000 people (equivalent to a 15% increase relative to the base case in 2041). An equivalent decrease in the prevalence rate is associated with a reduction of 48,000 disabled people (a 20% reduction relative to 2041 base case levels). The proportional effects of changes in the prevalence rate on the number of service recipients and levels of expenditure are very similar.

In absolute terms, the impact of changes in prevalence of learning disabilities on total public spending can be significant. Reducing or increasing by 0.5% per year the prevalence rate translates into a reduction or an increase in total net public spending of £1,400 million and £945 million, respectively.

Changes in assumptions about future unit costs

The analysis explored the impact on projected levels of expenditure of assuming 1.5% and 2.5% real annual increases in the unit cost of services (the base case assumes a 2% increase)[3]. Rates of DLA and income from charges continue to be held constant in real terms.

Overall, levels of expenditure appear to be most sensitive to proportional changes in unit costs of services. An increase of 0.5% in the rate of growth of unit costs (from 2% in the base case) is associated with an increase in total net public spending (services and benefits) of £2,550 million (a 16% increase relative to the 2041 base case level).

Assuming a 1.5% yearly rate of increase in unit costs reduces total net public spending by £2,150 million in 2041, a reduction of 14% relative to base case levels.

The largest effects in absolute terms are found for the learning disabled group, who experience an increase in projected net public spending of £1,330 million following an increase of 0.5% in the rate of unit cost growth.

5. Conclusions

The model produces projections of future public expenditure on care and disability benefits for younger adults based on a specified set of base case assumptions. This set of

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[3] Since the model does not incorporate demand effects, changes in the unit cost of services do not affect quantities other than expenditure.

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 younger adults is sensitive to assumptions about future numbers of younger adults and about future prevalence rates of disability. Projected future public expenditure on care and disability benefits 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.

These expenditure projections do not constitute the total costs to society of long-term care for younger adults. 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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Figure 1: Total net public expenditure (care and benefits) on younger adults in England - 2005 to 2041 - Base case