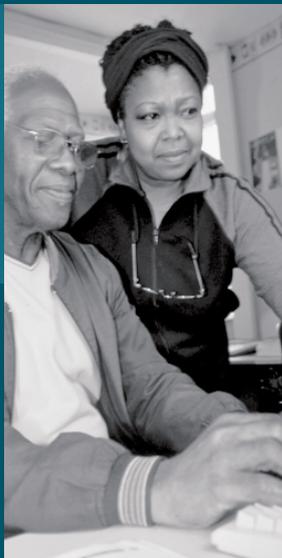wanless
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Expenditure on Social Care for Older People to 2026

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EXPENDITURE ON SOCIAL CARE FOR OLDER PEOPLE TO 2026

PROJECTED FINANCIAL IMPLICATIONS OF THE WANLESS REPORT

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Acknowledgements

Introduction

As part of the Wanless review of social care for older people, the King's Fund commissioned the Personal Social Services Research Unit (PSSRU) at the London School of Economics and the University of Essex to make projections of expenditure on social services for older people. This paper presents the results of the research. It reports on projections to 2026 of demand for social services for older people and associated expenditure in England.

The approach taken by the Wanless review team is described in detail in its report, *Securing Good Care for Older People: Taking a long-term view* (Wanless 2006) and can be characterised as 'normative'; projections are based on various assumptions about how, in the view of the Wanless review team, services *should* be allocated to achieve stated outcomes. This represents a departure from the 'positive' approach taken by the PSSRU long-term care team, where projections are based on analyses of how services are *currently* allocated. A separate version of the PSSRU long-term care finance model has been developed to produce the analysis commissioned by the Wanless review team. The structure and basis of the Wanless review version of the model draw, however, on existing work carried out by the PSSRU long-term care team and established links with the CARESIM model at the University of Essex.

It should be emphasised that the estimates provided by this report are not forecasts about the future; they are projections made on the basis of specific assumptions about future trends. This is of particular importance to the Wanless review version of the model because it assumes a completely different pattern of services, based on explicitly stated outcomes that, in the view of the Wanless review team, should be delivered by social services. We can never know with any degree of certainty how people will react to changes in a system, especially one as complex as social services; we can only extrapolate how they might behave according to past behaviour.

The paper has five sections. A description of the models used to produce the projections in this report is given in the second section. The third discusses the main projections. Three different scenarios are presented that model the two possible future service models commended by the Wanless review team and a further scenario reflecting existing patterns of care. In the fourth section we explore the sensitivity of these projections to changes in key assumptions and the final section concludes the paper with a brief discussion.

Description of models

In this section we describe the models used to produce the projections reported in this paper. The Personal Social Services Research Unit (PSSRU) Wanless review model is described first because this model was used to produce the projections of numbers of service users and overall expenditure; the CARESIM model is then described. The models have been used together with other studies in order to address the question of how costs would be divided between public and private sources of finance under different charging systems. In effect, the models work together by examining the effect of changing the charging system on the split between sources of funding. Several different scenarios have been developed over a series of papers (Wittenberg *et al* 2002, Hancock *et al* 2003, 2006). For the purposes of this report we have considered only two of the scenarios: how expenditure would be broken down by source under the current funding system and under a policy of 'free' personal care; a detailed discussion of how changes to the charging system would alter the balance between public and private contributions to financing social services is found in Hancock *et al* (2006). Figure 1 opposite provides an overview of the PSSRU Wanless review model and linkages between the models and sets out the sources of data.

PSSRU Wanless review model

The PSSRU long-term care finance model is a cell-based (or macro-simulation) model and takes the form of an Excel spreadsheet. It is described in detail by Wittenberg and colleagues (2006). It was designed to make projections of the likely demand for long-term care in England to 2041 under different scenarios. For the purposes of the study reported in this paper, an adapted version of the model was developed, the PSSRU social care projections model for the Wanless review, which makes projections of demand for social services for older people in England to 2026.

The adapted version is outlined in Figure 1 overleaf, with sources of data shown. It consists of five main parts. The first part estimates the numbers of older people with different degrees of functional disability by age group, gender, household type, receipt of informal care and housing tenure. The second part estimates the level of demand for services within the population. The third part covers total social services expenditure, and the fourth part allocates the expenditure to the various sources of funding. The final part estimates the workforce providing social services for older people.

The principal difference between the PSSRU model for social care projections for the Wanless review (referred to as the PSSRU Wanless model) and that for long-term care finance (referred to as the standard model) is in the way that service receipt is treated (second part). The standard model starts by asking what services older people receive under current patterns of care. Data on service receipt taken from Department of Health

STRUCTURE OF THE PSSRU WANLESS MODEL

England's population aged 65+, by age group, gender and marital status

Sources: Government Actuary's Department 2005; Office for National Statistics 2005

Allocation of older people to sub-groups according to functional disability, household type and housing tenure

Source: Office for National Statistics 2001

Projected numbers of older people, by age group, gender, functional disability, household type and housing tenure

Assignment of informal care, by source of care (children, spouse and other), to sub-groups of functionally disabled older people

Source: Office for National Statistics 2001

Projected numbers of functionally disabled people in receipt of informal help, by household composition and functional disability

Functions assigning demand for services, by input type, to the older population according to functional disability, and household composition or receipt of informal care

Source: Wanless analysis

Projected numbers of *potential* recipients of formal institutional and community-based social services

Subtraction of those who decline services according to functional disability, and household composition or receipt of informal care

Source: Wanless analysis

Projected numbers of *actual* recipients of formal institutional and community-based social services

Intensity of use of community-based formal care services and informal care

Source: Wanless analysis

Projected level of demand for formal institutional and community-based social services

Unit cost of formal care services

Sources: Curtis and Netten 2004; Laing & Buisson 2004

Projected real expenditure on formal care services

Distribution of costs to funding sources

Source: CARESIM microsimulation model

Projected expenditure on formal services by source of finance: social services and service users

statistical bulletins and the 2001/2 General Household Survey (GHS) are used to estimate the numbers of older users of services by age, gender, degree of disability, household composition, receipt of informal care and housing tenure.

The PSSRU Wanless model starts from a different position. It asks first who should receive services and then what services they should receive, on the basis of desired outcomes (as determined by the Wanless review team) and the costs of achieving those outcomes.

Development of the PSSRU Wanless model has been conducted together with the Wanless review team and draws on their analyses (reported in Chapter 10 of their report) of need and demand for services in 2002. The picture produced from these analyses is used to populate the base year of the PSSRU Wanless model, 2002, from which all subsequent years are derived. The technical details of the model are described in more detail below.

Projected numbers of older people by disability and household type/informal care

As in the standard model, the PSSRU Wanless model uses the 2004-based population projections of the Government Actuary's Department (GAD 2005) as the basis for the numbers of people by age band and sex in each year under consideration until 2026. The GAD also produces a number of variant projections because of uncertainty about changing mortality and migration rates. Such uncertainty is not explored in this report; however, it has been shown in previous reports by the long-term care finance team that the GAD variants do not have a substantial impact on demand for and expenditure on services to 2026. The first part of the model splits the older population according to a number of characteristics, such as the level of functional disability (measured in terms of activities of daily living or ADLs), marital status, whether living alone, with a partner or children, housing tenure, and receipt of informal care (by spouses, children or others). These are all relevant to the use of services but two of the breakdowns are of special relevance in this version of the model: functional disability and household type/receipt of informal care.

Following the method used in the standard model, 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 from social services, because it is disability rather than age that influences need for care. For this reason it is an important driving force in determining receipt of services in the PSSRU social care projections model. Previous studies have shown that projections of long-term care expenditure are sensitive to assumptions about future rates of disability among older people (Nuttall *et al* 1994; House of Commons Health Committee 1996; Lagergren and Batljan 2000; Wittenberg *et al* 2001, 2006; Rothgang *et al* 2003; Karlsson *et al* 2005). The model uses as a measure of disability the ability to perform ADLs and instrumental activities of daily living (IADLs). Data from the 2001/2 GHS is used to break the older population into five categories of disability (*see* box opposite), ranging from no disability to inability to perform two or more ADLs without help.

Disability groups used in the PSSRU Wanless model

Another key factor in the receipt of long-term care is household type (Arber *et al* 1988; Davies *et al* 1990; McNamee *et al* 1999). In general, older people who live alone are more likely to receive formal services than those living with others (Evandrou 2005), whereas those living with others are more likely to receive informal care (Pickard *et al* 2000). As a result of the close relationship between household type and informal care, there is a single classification in the standard model for household type/informal care, and the PSSRU Wanless model utilises this classification to separate the population into further groupings.

The household type/informal care classification in the standard 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. The two marital status groups, those who are *de facto* married and those who are *de facto* single, are broken down into five household types using official national statistics for 2002 and the 2001/2 GHS. The propensity within marital status groups to live alone, with children or with others, is based on multivariate (logit) analysis of the GHS data and is assumed to remain constant in the projections (Wittenberg *et al* 2006). The following five household type categories are distinguished: single alone, single with children, single with others, couple alone and couple with others.

The five groups of household type are further broken down by receipt of informal care to produce an eightfold classification by household type and informal care (*see* box below). Informal care in the model is based on analyses of receipt of unpaid help with domestic tasks by disabled older people using the 2001/2 GHS (Wittenberg *et al* 2006). The propensity within household type groups to receive informal care is based on multivariate (logit) analysis of the GHS data and is assumed to remain constant in the projections (Wittenberg *et al* 2006). For the purpose of the Wanless model, the eightfold classification of household type/informal care is collapsed into four categories: alone with help, alone without help, not alone with help and not alone without help.

Household type/informal care classification used in the PSSRU model

The model includes a simple breakdown by housing tenure between those living in owner-occupied tenure and those in rented accommodation. This variable is an important link between the PSSRU model and the CARESIM model and is included because it is relevant, in

the case of older people living alone, to the division between those who fund their own residential care and those who are funded by their local authority. The current means test for public support in residential care generally takes account of the value of the person's home (unless it is occupied by the person's spouse or an older or disabled relative). This means that older homeowners who live alone generally need to fund their residential or nursing home care privately, whereas older tenants and older homeowners living with their spouse are often eligible for public funding. This variable is not used to project demand for services.

The rates of home ownership, by age, sex and marital status, for 2002 are from the Family Resources Survey. Projected rates for future years to 2022 are from projections that are derived from the CARESIM model (Hancock *et al* 2006). Home ownership rates are then assumed to remain constant to 2026.

The older population is broken down into about 1,000 cells by age, sex, disability, household type/informal care and tenure. However, for most purposes in the PSSRU Wanless model, these are combined to form just 20 cells, comprising five levels of disability, according to ability to perform various IADL and ADL tasks, by four household type/informal care categories.

Projecting demand for informal care

Demand for informal care is modelled after the method used in the standard model (*see* Wittenberg *et al* 2006), based on the analyses described above. The projections of household type/informal care in the PSSRU Wanless model assume that marital status rates remain constant into the projection years.

In modelling receipt of informal care in future years, it is important to distinguish between informal care by spouses/partners and informal care by (adult) children (Pickard *et al* 2006). Whereas care by partners is likely to increase in future years, care by children may decrease (Allen and Perkins 1995; Evandrou and Falkingham 2000; Pickard *et al* 2000). The PSSRU standard model now distinguishes between different sources of informal care for disabled older people, using additional data supplied for the first time with the 2001/2 GHS (Pickard *et al* 2006). Three principal sources of informal care are identified using data from the 2001/2 GHS: from children, partners and others. The projections assume a steady state with regard to the propensity, within household type/informal care groups, to receive care from a partner, child, partner and child, or others.

The numbers of disabled older people receiving informal care in the PSSRU Wanless model are almost the same as in the standard PSSRU model. The volume of informal care, in terms of hours per week, is not modelled on the standard PSSRU model (because data on hours of informal care are not available in the 2000/1 GHS). The PSSRU Wanless model does, however, model hours of informal personal care based on analyses performed by the Wanless review team, shown in Chapter 10 (Table 44) of their report (Wanless 2006) and replicated here in Table 1 opposite for clarity. The average hours of informal help received per week vary by household type, with those living alone receiving fewer hours of care provision than those living with others. The projections assume that hours of informal care received per week remain constant by household type and disability category into the future. Implicit to this assumption is the understanding that the supply of informal help will rise to meet the volume demanded. The effect of relaxing this assumption is considered in the fourth section (*see* pp 40–43).

TABLE 1: PROVISION OF INFORMAL PERSONAL CARE (HOURS PER WEEK), BY LEVEL OF DISABILITY AND LIVING ARRANGEMENT

Level of disability	Living situation of person cared for	
	Alone	**Not alone**
No impairment	2.8	9.5
1 IADL/bathing difficulty	2.8	9.8
IADL + ADL difficulty (other than bathing)	2.8	9.7
1 ADL	3.0	10.1
2+ ADLs	3.2	10.4

Source: Wanless model estimates

Projecting the demand for services

The demand for services can be distinguished from the need for services, which in turn can be distinguished from the need for care. Although the need for care is determined purely, in this context, by the person's degree of disability, the need for services depends also on the individual's personal circumstances, such as the availability of equipment and adaptations that allow the person to continue living independently (Wittenberg *et al* 1998). (These factors may also be considered as factors affecting the demand for services, because they might also affect the likelihood that a person comes forward to receive services. However, for the purposes of the modelling they have been considered as factors affecting the need for services.) The demand for services, however, depends on many different factors, for example, ability to pay for services that are means tested or personal characteristics that stop a person from wanting to take up services. There is a complex relationship between need and demand for services, which the Wanless review version of the model seeks to address in projecting demand for services. (It should be emphasised that the modelling of service receipt described in this section relates to the Wanless review version of the model. The modelling of service receipt under the standard PSSRU model is based on current patterns of service receipt, as described in Wittenberg *et al* 2006.)

The relationship between need and demand for services is modelled by the Wanless review team and the output from their work is used in the PSSRU Wanless model (*see* Chapter 10 of the Wanless report). The Wanless review team's model provides three types of data for incorporation into the PSSRU Wanless model.

- The probability of the need for a service (the potential population in demand of services) for each service specified in the model for each sub-group of the older population.
- The probability of each sub-group of the older population declining to take up formal services. Subtracting this proportion from the potential population leaves the actual population in demand of services.
- The intensity of service receipt for all community-based services and informal help for each sub-group of the older population.

The Wanless review team makes the link between the need for care and the demand for services through focusing on the outcomes that, in the view of the Wanless review team, social services should provide and users want. The need for a service is determined broadly according to a person's need for care and the person's capacity to benefit from the

services. Clearly a person's capacity to benefit from services is not independent of the outcome(s) that the person seeks to achieve. The Wanless review team distinguished different types of outcomes that could, in its view, be realised by social services: personal care outcomes (including nutrition), safety, well-being and reduction of carer stress. These outcomes for people are achieved with personal care inputs, supervision support for people and measures that promote people's well-being. (The inputs required to meet the fourth outcome of freeing carers from undue stress are equivalent to those required to meet the first three outcomes; achievement of this outcome is modelled through identifying those people who are receiving a high level of informal care and supplying carer-break services to relieve them of their caring duties.) An older person may be in need of more than one of these inputs and may require a service to achieve several outcomes. The intensity and mix of the care inputs are determined for each disability group in the population. The numbers from the review team's model that correspond to the intensity and mix of care inputs are passed to the PSSRU long-term care team and are incorporated directly into the PSSRU Wanless model. All formal services are allocated in a similar way in the model to sub-groups of the older population and are discussed together.

Three types of formal services are considered in the Wanless model. The formal services are defined as care-with-housing (or institutional) services, community-based care services and community-based other-care services. These three categories include, respectively, nursing home care, home care and day care, and for modelling purposes these exemplars of the category are used to describe the entire category. In the future, these service categories are likely to develop and will encompass a range of specific service types and variants (*see* Chapter 10 of the Wanless report). Each service provides certain of the inputs described above and helps to achieve one or more of the outcomes described.

In brief, care-with-housing services are allocated to those people who require high levels of supervision as well as personal care, driven by the incidence of severe dementia in the population, or by people with substantial personal care needs only who choose housing-based care options. The proportions of people that fall into this category are shown in Table 2 below. Community-based services are allocated to people requiring personal care inputs. The intensity – number of hours of care per week – with which these services are delivered to people in the community are set at economically justified 'benchmark' levels

TABLE 2: ESTIMATED PROPORTION OF PEOPLE WITHIN THE OLDER POPULATION RECEIVING CARE-WITH-HOUSING SERVICES, BY LEVEL OF DISABILITY AND LIVING ARRANGEMENT

Level of disability	Living situation of person cared for	
	Alone	Not alone
No impairment	0.0	0.0
1 IADL/bathing difficulty	0.0	0.0
IADL + ADL difficulty (other than bathing)	0.0	0.0
1 ADL	0.2	0.2
2+ ADLs	0.4	0.2

Source: Wanless model estimates

where the value of the extra outcomes that they produce for recipients is balanced against the cost that society is willing to support. These benchmark service levels are determined by the Wanless review team's model. Other community-based services are allocated to people either to provide their informal carers with a break or to achieve well-being outcomes. Most people require either or both types of community-based services. As services are allocated to the older population by type of input required, it is therefore possible to determine the size of the potential population in demand of services for each input type for each service.

Total demand for care in the population is a combination of the numbers of people taking up services and the intensity of care that they use. The amount of time services spend caring for their clients, the intensity of service receipt, will vary from person to person, depending on needs, by receipt of informal care and so on. As noted above, intensity of service receipt is estimated by the Wanless review. For community-based care services the estimate is in hours per week and for other community-based services in sessions per week. For institutional services intensity is not a relevant concept because volume is equivalent to the number of clients. The intensity of service receipt is multiplied by the size of the population in demand of services, for each service individually, to provide a weekly volume of demand for services.

As well as variation between sub-groups of the older population in the benchmark intensity of service receipt, intensity can also vary within a sub-group of the population. In particular, in the Wanless review team model, those sub-groups receiving informal care are likely to require quite different numbers of hours of formal services. Within each sub-group of the population receiving informal care, the Wanless model estimates that there are some people who receive all the hours of care that they need from their informal carers. This situation is modelled by subtracting these people from the total number in need of formal community-based services, using proportions supplied by the Wanless review team. The number of people falling into this category varies according to whether or not the person lives alone and also to the level of disability. Analyses produced by the Wanless review team show an inverse relationship between level of disability and number of people receiving all their hours of care from informal sources. The proportions are shown in Chapter 10 in the Wanless (2006) report.

In the view of the Wanless review team, the willingness of society to support people with needs can be at odds with what the individuals themselves are willing to pay, in charges, for services. In particular, people with low preferences for receipt of care might be

TABLE 3: ESTIMATED PROPORTION OF PEOPLE WITHIN THE OLDER POPULATION WHO DECLINE TO TAKE UP COMMUNITY-BASED SERVICES, BY LEVEL OF DISABILITY

Level of disability	Proportion declining services
No impairment	0.00
1 IADL/bathing difficulty	0.34
IADL + ADL difficulty (other than bathing)	0.18
1 ADL	0.18
2+ ADLs	0.16

Source: Wanless model estimates

unwilling to pay for any charge that is made for services even if that charge is less than the cost of care offered. As a result, there will be variability within each sub-group as to demand for services. Further analysis by the Wanless review team was used to estimate take-up of services by each sub-group of the older people's population – in other words, to determine the proportion of each sub-group of the older population who would turn down the offer of services. These estimated proportions are shown in Table 3 (*see* p 9)and further details of how these figures were obtained are given in the Wanless report. The proportions shown in Table 3 enable two figures for demand for services to be produced: the *potential* demand for services, or need for services, which provides a figure corresponding to the number of people who, under normative assumptions, need services (the volume of services reported under the potential demand does exclude those people who receive all their care from informal sources) and the *actual* demand for services, which excludes all those identified as needing services, under normative assumptions, but declining to take them up.

In summary, in accordance with the normative approach adopted by the Wanless review team, demand for services is estimated in the PSSRU Wanless review model in the following way.

- A cost-effective package of care is posited for each sub-group of the older population by degree of disability and household composition, as explained in the Wanless report.
- For a minority of disabled older people, the package comprises care with housing; for the majority it comprises a set number of hours of community-based care, which may be provided by formal services, informal carers or a combination of both.
- Those requiring formal community-based care are assumed to use the benchmark number of hours of care minus the number of hours (if any) supplied by informal carers. A proportion of those people with informal carers will receive all their care needs from this source and are therefore subtracted from the total requiring community-based services. This leaves the *potential* population in demand of services.
- A proportion of those requiring formal community-based services are assumed either not to seek or to decline services. This leaves the *actual* population in demand of services.
- Demand for services, in terms of number of recipients (SERNO) for each service *(j)* can be summarised formulaically as:

$$SERNO_j = \sum_{i=1}^{20} p_{ij}.n_i - \sum_{i=1}^{20} q_{ij}.n_i - \sum_{i=1}^{20} r_{ij}.n_i$$

where p_{ij} is the probability of a person in cell i (i = 1–20) receiving service j (j = 1–3); q_{ij} is the probability of a person in cell i not receiving service j as a result of receiving all the hours of care from informal sources; r_{ij} is the probability of a person in cell i not receiving service j because he or she declines the service; and n_i is the number of older people in cell i.

Assessment and care management

The number of assessments and the number of clients receiving care management are also included in the model. The standard model assumes that the number of assessments rises in line with the projected number of disabled older people starting from a base figure, taken from 2002/3 Department of Health Referrals, Assessments and Packages of Care (RAP) data (Department of Health 2004), of 900,000 in 2002. As the PSSRU Wanless

model assumes a different system, these data based on the current system cannot be used. For the purposes of the PSSRU Wanless model we have assumed that all *potential* recipients of formal care services are assessed – in other words, everyone who is estimated to require care is assessed. Therefore, the number of assessments rises in line with the projected number of potential recipients of services. All recipients of formal care 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 long-term care services

A 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. It is assumed that the costs for community-based care services are equivalent to the average cost of publicly funded home care services; those for other community-based services are equivalent to publicly funded day care services; and those in care-with-housing services are equivalent to publicly funded nursing home services (excluding the nursing care component of the cost that is paid for through NHS funds). All unit costs for community-based services are sourced from the PSSRU Unit Costs of Health and Social Care Report 2004 (Curtis and Netten 2004) and all care-with-housing unit costs are sourced from the Laing & Buisson (2004) Market Survey and are deflated to 2002/3 prices, using Department of Health service-specific deflators. Cost assumptions for the base year, 2002, are shown in detail in the box below.

ASSUMPTIONS ABOUT COST OF SERVICES

All *care-with-housing services* are assumed to be equivalent to the cost of nursing home services for publicly supported residents, minus the nursing element of £83.60, which is paid for by the NHS. The cost is £369.40 per week.

Community-based services are costed as equivalent to local authority-supported home care services. The cost of home care services is £11.58 per hour.

Other community-based services are assumed to be equivalent to local authority-supported day care services, which cost £25 per attendance.

Costs for *assessment* are estimated at £250 per assessment and those for *care management* are estimated to cost £600 per client-year (*see* Wittenberg *et al* 2006 for assumptions underlying these costs).

In summary, the model estimates total expenditure on social services *(E$_t$)*, for each year *(t)*, as the sum across all formal social services considered, *j (j = 1–3)* of the following: projected number of service recipients in year *t (SERNO$_{jt}$)* multiplied by the intensity of service receipt in terms of hours per week *(int$_j$)* and the unit cost of care inflated to the year to which the projection year relates *(c$_{jt}$)*. This can be shown as:

$$E_t = \sum_{j=1}^{3} SERNO_{jt} \cdot int_j \cdot c_{jt}$$

Projected breakdown of expenditure by funding source

The fourth part of the model breaks down projected aggregate expenditure by source of funding: social services and service users (either as private purchase or through user charges). The proportion of service users who are publicly and privately funded are provided by the CARESIM model and are applied to three community-based packages of care and care-with-housing care separately (the derivation of the packages of care are described in more detail on page 13).

Local authority gross expenditure on care-with-housing and community-based care services for publicly funded service users is divided between local authority social services and users, according to the rules of the funding arrangement under consideration as estimated by the CARESIM model. The full costs of privately funded care-with-housing care and community-based care, and a proportion of the costs of publicly funded social services, are thus assigned to users.

Social care workforce

A fifth part of the model makes projections of the numbers of social care staff required to provide the projected volume of social services, for different categories of staff. Included in the model are social workers, occupational therapists, home helps/care assistants, managers and support staff. Estimates of the ratio of staff to volume of services provided have been calculated using Department of Health estimates of whole-time equivalent (WTE) staff numbers by category of staff and service for 2002. For care staff, it is assumed that the ratio of staff to service volume remains constant to 2026. For administrative and managerial staff, it is assumed that the ratio of such staff to care staff remains constant over the projection years.

CARESIM model description

CARESIM uses data from the British Family Resources Survey (FRS) to simulate what each older participant in the survey would have to pay towards care-with-housing fees or the cost of care provided in his or her own home, should he or she need such care. The model performs simulations for single people currently aged 65 and over, and for the older partner in couples where at least one partner is aged at least 65 years. The simulations are performed for a base year and for future years. Simulations for future years involve: ageing the sample of those currently aged 65 and over, allowing for deaths and the consequent effects of widowhood; modelling the evolution of their incomes and capital under certain assumptions; and making assumptions about future costs of care and the care charging, social security benefit and income tax regimes that will be in place for the year of interest. As it is more difficult to predict the future incomes of people who are not yet retired than it is for those who are already drawing pensions, the base-year sample is not 'refreshed' as it is aged. This restricts the years and age ranges for which the model can produce projections. For the base year (2002) simulations are performed for people aged 65 and over. By 2022 the simulations are representative only of people aged 85 and over. However, it is at these oldest ages that the need for care is highest and institutionalisation rates rise sharply, so this restriction is not as limiting as it might seem. Details of how the sample is aged and how the evolution of income and capital is modelled can be found in Hancock (2000).

In the analysis reported here the model uses data from the 1999/2000, 2000/1 and 2001/2 FRS with money values uprated to the price levels prevailing in 2002. In the base year, simulations are performed for 21,334 older people. Separate simulations are performed for care-with-housing care and for three packages of community-based care (including other community-based services) corresponding to low-, medium- and high-intensity care. The model starts by simulating what each older person would have to pay, per week, on starting to receive care in each of these four categories. The current means-testing arrangements, as set out in Department of Health guidance for councils with social service responsibilities (Department of Health 2003), are used for this purpose. Most of those having to meet the full costs of care with housing will need to draw on their capital, so over time their capital will fall. Once capital has fallen to the upper capital limit, they may be eligible for local authority help with the fees. Each older person is randomly assigned an uncompleted length of stay in care with housing. His or her contribution to care costs is calculated for that point. In this respect the model can be thought of as mimicking a cross-sectional survey of care home residents. Community-based care clients may also have to draw on their capital to meet charges, although this is less likely under the base-charging regime than for residents in care homes. As there are no data on uncompleted periods of receipt of community-based care we assume that the mean length of time for which recipients of community-based care have been receiving services is 18 months and their contributions to charges calculated for that period.

Linkages between the CARESIM and PSSRU model

The CARESIM model provides projections of two variables for incorporation in the PSSRU Wanless model:

- the proportion of care home residents and community-based care clients eligible for local authority support under the current or an alternative charging regime.
- the proportion of gross costs met by users, in the case of those eligible for local authority support.

The technical detail of the linkage between the CARESIM model and the PSSRU model, and the rationale for the process, are described in detail by Hancock and colleagues (2006). Two main revisions to the models have been made to accommodate each other. First, the eight different packages of community-based care (including other community-based services) in the PSSRU Wanless model are reduced to three packages of varying intensity (low, medium and high). (The low package corresponds to less than 7 hours of combined community-based and/or other community-based services; the medium package to between 7 and 14 hours; and the high package to over 14 hours.) Second, the figures of demand for these four packages (including the care-with-housing population), broken down by age, gender, marital status and housing tenure, are passed to the CARESIM model for each projection year. These data are used to weight the representative sample that forms the base of the CARESIM model. The contribution of each person towards the costs of care-with-housing or community-based care can then be calculated using the CARESIM model.

Key projections

The Personal Social Services Research Unit (PSSRU) Wanless model produces projections based on specific assumptions about what services are required to deliver specified outcomes and about future trends in the key factors affecting demand for and expenditure on social services, for example demographic trends or the funding system. The Wanless review has specified three base scenarios that, in their own words, 'capture the degree to which these sets of outcomes are to be achieved in the future'. Two of the scenarios, referred to as the Wanless review scenarios, are modelled using the PSSRU Wanless model, described in the preceding section. The first scenario, describing the current service model, is modelled using the PSSRU long-term care finance model (*see* Wittenberg *et al* (2006) for details of this model and its assumptions). A description of the scenarios is provided in the box for clarity.

THE BASE-CASE SCENARIOS

- *Scenario 1 (current service model)*: the rolling forward of the (implicit) outcomes embodied in the current social care system. This scenario is used as a baseline for comparison. It is chosen because it would give essentially the same configuration of services to people in the future. What would then change are mainly the demographic and supply-side factors.
- *Scenario 2 (core business)*: the achievement of highest levels of personal care and safety outcomes that can be justified, given their cost. This scenario focuses on what might be considered to be the core business of the social care system.
- *Scenario 3 (well-being)*: as scenario 2 but where well-being outcomes for older people are also improved, including being able to participate socially, achieving a sense of self-esteem, and so on.

Source: adapted from Chapter 10, Wanless report.

The projections under the base-case scenarios take account of expected changes in key factors affecting demand for and expenditure on social services. The main assumptions used in the base case of the PSSRU Wanless model are summarised in the box opposite. The base case is used as a point of comparison when the assumptions of the model are subsequently varied in alternative scenarios.

The Government Actuary's Department (GAD) 2004-based principal population projections for England are that, between 2002 and 2026, the numbers of people aged 65 and over will rise by about 47 per cent (*see* Table 4, p 16). The numbers of those aged 85 and over is expected to rise much faster during the same period from 956,000 to 1,775,000, an

increase of about 85 per cent. This means that, by 2026, not only will the numbers of oldest old (those over 85) increase but the proportion of older people defined as oldest old will also increase. Much of this increase is a result of a rise in male life expectancy. The numbers of men aged 85 years and over is projected to increase by almost 170 per cent between 2002 and 2026 compared with 54 per cent for women. The changing structure of the older population has the potential to have a large impact on demand for and expenditure on social services as the PSSRU long-term care finance team and others have shown (Wittenberg *et al* 2006).

Disability is an important driver of need for services and is correlated with age as shown in the 2001/2 General Household Survey (GHS). Under base case assumptions of constant

TABLE 4: PROJECTED OLDER POPULATION SIZE, BY AGE, ENGLAND, 2002 TO 2026

Age group	Older population (thousands)						% change 2002–26
	2002	**2007**	**2012**	**2017**	**2022**	**2026**	
65–69	2,176	2,245	2,762	2,843	2,760	3,033	39
70–74	1,954	1,972	2,070	2,565	2,651	2,550	30
75–79	1,625	1,647	1,712	1,829	2,290	2,474	52
80–84	1,180	1,220	1,282	1,382	1,508	1,758	49
85+	956	1,085	1,215	1,370	1,577	1,775	86
All	**7,891**	**8,169**	**9,040**[1]	**9,989**	**10,787**[1]	**11,589**[1]	**47**

Source: GAD 2004-based population projections
[1] Discrepancies due to rounding.

TABLE 5: PROJECTED DISABLED POPULATION SIZE, BY LEVEL OF DISABILITY, ENGLAND, 2002 TO 2026

Level of disability	Older population (thousands)						% change 2002–26
	2002	**2007**	**2012**	**2017**	**2022**	**2026**	
No disability	5,550	5,720	6,370	7,040	7,520	8,020	44
1 IADL	600	620	680	760	830	910	51
Bathing difficulty	280	290	320	360	390	420	49
ADL difficulty (other than bathing)	530	550	600	670	740	810	51
1 ADL without help	370	390	430	480	530	580	56
2+ ADLs without help	550	580	630	690	770	850	54
All	**2,340**	**2,450**	**2,670**	**2,950**	**3,270**	**3,560**	**53**

Source: PSSRU Wanless model and PSSRU long-term care finance model estimates

age-specific prevalence rates for disability, the number of disabled people (defined as having problems with at least one instrumental activity of daily living (IADL) or one activity of daily living (ADL) is projected to grow by over 50 per cent between 2002 and 2026 (*see* Table 5 above). Over the same period, the number with more severe functional impairments (defined as those who cannot perform one or more ADLs) is projected to increase by about 55 per cent. As constant prevalence rates of functional impairment by age are assumed, the growth in the size of this population can be explained by the increased number of people living to older ages, particularly the more significant increase in the size of the population aged 85 and over.

Patterns of care

The concept of 'patterns of care' is used to refer to variations in service models or, put more simply, variations in who gets what amount of what type of service or care. The source of such variation is multifarious; for example it can be the result of specific policies around eligibility or policies that set funding levels. It is of special relevance to this discussion because each of the base cases represents, in effect, a different service model engendering a different pattern of care. Whereas scenario 1 is based on current patterns of

care, scenarios 2 and 3 are based on patterns of care that the Wanless review team commend as more cost-effective than the current pattern of care.

The service/care mix for the base year, 2002, and beyond, for each of the base scenarios, is shown in Table 6 below. As Table 6 demonstrates, the difference in mix is considerable between scenario 1, which represents the current system, and the Wanless review scenarios (scenarios 2 and 3), which represent alternative systems developed by the Wanless review team. Some key differences are as follows.

- Although there are currently around 340,000 older people in residential care (about 4.2 per cent of the older population), including some 20,000 fully funded by the NHS, the Wanless review scenarios have only 250,000 older people (3.1 per cent of the total) receiving care-with-housing services.
- Around 85 per cent of disabled older people receive informal care under the current system and under the Wanless review scenarios: the numbers receiving informal care under the latter are higher than those under the former because of the lower use of residential care. In all scenarios the overwhelming majority of care is provided by informal sources.

TABLE 6: PROJECTED NUMBERS OF OLDER PEOPLE RECEIVING FORMAL SOCIAL SERVICES AND INFORMAL CARE, UNDER BASE CASE ASSUMPTIONS, ENGLAND, 2002 TO 2026

Type of services/care	Older people (thousands)						% change 2002–26
	2002	2007	2012	2017	2022	2026	
Scenario 1							
Informal help	1,720	1,800	1,960	2,180	2,400	2,600	51
Institutional care[1]	320	340	360	400	450	500	56
Local authority-funded home help	340	360	380	420	470	520	53
Private home help	390	420	450	510	570	630	62
Day centre services[2]	120	120	130	150	160	180	51
Meals	260	270	290	320	360	400	50
Scenario 2							
Informal help	1,780	1,860	2,030	2,250	2,480	2,700	51
Institutional care	250	270	290	320	360	390	55
Community-based services	910	950	1,030	1,140	1,270	1,390	53
Other community-based services							
for personal care	270	280	310	340	380	410	52
for supervision	60	60	70	70	80	90	53
for well-being	–	–	–	–	–	–	–
Scenario 3							
Informal help	1,780	1,860	2,030	2,250	2,480	2,700	51
Institutional care	250	270	290	320	360	390	55
Community-based services	910	950	1,030	1,140	1,270	1,390	53
Other community-based services							
for personal care	270	280	310	340	380	410	52
for supervision	60	60	70	70	80	90	53
for well-being	490	500	550	600	660	720	47

Source: PSSRU long-term care finance model (scenario 1) and PSSRU Wanless model (scenarios 2 and 3) estimates
[1] Excludes all those in nursing homes or hospitals whose care is paid for by the NHS.
[2] Does not include day care services funded through the NHS.

- Although around 340,000 older people receive local authority home care and around 390,000 disabled older people receive private home care under the present system – a total of around 650,000 (about 8 per cent of the total older population), allowing for receipt of both types of home care by some older people – more than 900,000 older people (11 per cent of the older population) receive community-based services (assumed to be equivalent to home care) under the Wanless review scenarios.
- Although around 120,000 older people receive local authority day care under the present system, 270,000 older people receive other community-based services (based on day care services) under the Wanless review scenarios.

The differences between the systems are considered in more detail in the sections that follow.

Demand for informal care

The number of disabled older people receiving informal care is estimated in the same way under all three base-case scenarios. The estimates of informal care recipients are based on analyses of the 2001/2 GHS data, carried out as part of the development of the PSSRU long-term care finance model (Pickard *et al* 2006; Wittenberg *et al* 2006), as explained above on pages 6–7. Demand for informal care in future years is projected on the basis of constant probabilities of receiving informal care by age, sex, degree of disability and household type.

The greater level of demand for informal care in the base-case scenarios of the Wanless review team, compared with the PSSRU standard model base case, is a result of the larger proportion of people living in a community rather than a residential care setting in the former compared with the latter. The implication of the Wanless review team scenarios is that about 60,000 more disabled older people would have been receiving informal care in 2002 than did. By 2026, under the Wanless review base case scenarios, about 100,000 more older people would receive informal care than under the base case of the standard model (*see* Table 6, p 17).

The different base cases differ, however, in the way in which they allocate formal services to older people receiving informal care. Although the projections under the base-case scenarios of the Wanless review team anticipate a greater increase in the numbers of older people receiving informal care in future years, the Wanless team explicitly identifies, as an outcome of social services, the relief of some of the 'burden of caring' from carers, such that their quality of life is improved (*see* Chapter 10 of the Wanless report for further discussion of this outcome). Such an outcome is included in both scenarios 2 and 3 and is to be delivered through carer-support services, which are discussed in more detail on pages 24–25. (The support services have been modelled only to 'replace' personal care and supervision inputs. For this reason the projections for scenarios 2 and 3 are equivalent and are reported as one in this section.) As carer stress is related to the number of hours of care that a carer undertakes, modelling an outcome that seeks to reduce carer stress necessitates estimating the volume of informal care provided. This has been discussed on pages 6–7.

Potential demand for informal care, in the context of demand for all types of community-based care, both formal and informal, in future years is illustrated in Figure 2 opposite. (It should be noted that estimates of hours of informal help provided include only help

2 PROJECTED TOTAL WEEKLY HOURS OF COMMUNITY-BASED FORMAL AND INFORMAL CARE, BY SOURCE, FOR SCENARIO 2, UNDER BASE ASSUMPTIONS, ENGLAND, 2002 TO 2026
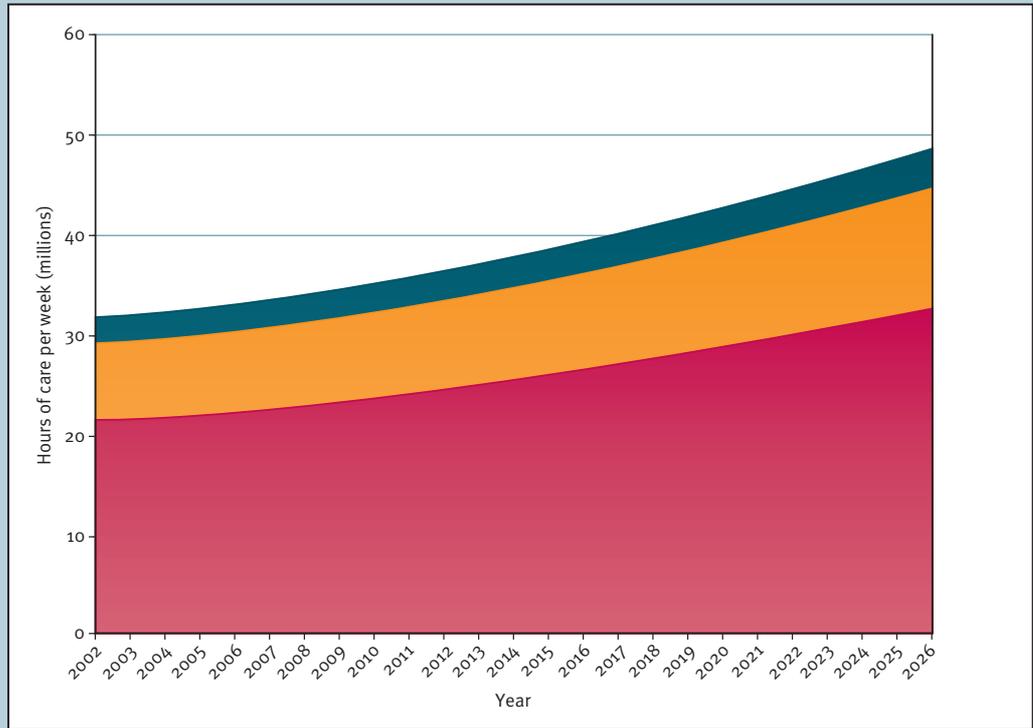
KEY

■ Other community-based services*

■ Community-based services

■ Informal care

Source: PSSRU Wanless model estimates
* Other community-based services, which are allocated as sessions per week, have been converted into home care hours per week using a conversion factor of 2.16. This is based on the average length of a session in hours.

provided for personal care and supervision inputs. If care for IADL tasks and companionship were included, the input in terms of hours would be much greater and the reliance on informal help accentuated further. Scenario 1 is not reported because the PSSRU long-term care finance model does not, at present, make any assumptions about hours of informal help provided. This is because data on hours of informal care received by older people are not included in the 2001/2 GHS.) Figure 2 shows projections to 2026 of the hours of care received by older people under scenario 2 of the Wanless review team; about 22 million hours of informal personal care/supervision would be received by older people in England in 2002 and this would rise to about 30 million hours by 2026.

There is, however, scope for debate about the availability of any additional informal carers, either in the present or in the future. Indeed, there is concern that informal care, particularly care from the children of older people, may decline in future (Allen and Perkins 1995; Evandrou and Falkingham 2000; Organisation for Economic Co-operation and Development 2006; Pickard *et al* 2006). The future supply of informal care is examined below through a scenario that allows for a decline in receipt of informal care by disabled older people from their (adult) children.

Demand for and expenditure on services

Demand can be considered in terms of both numbers of people taking up services and volume of services provided. Estimates of demand for services are presented by service type in the following sections.

PROJECTED DEMAND FOR CARE-WITH-HOUSING SERVICES, UNDER BASE ASSUMPTIONS, ENGLAND, 2002 TO 2026
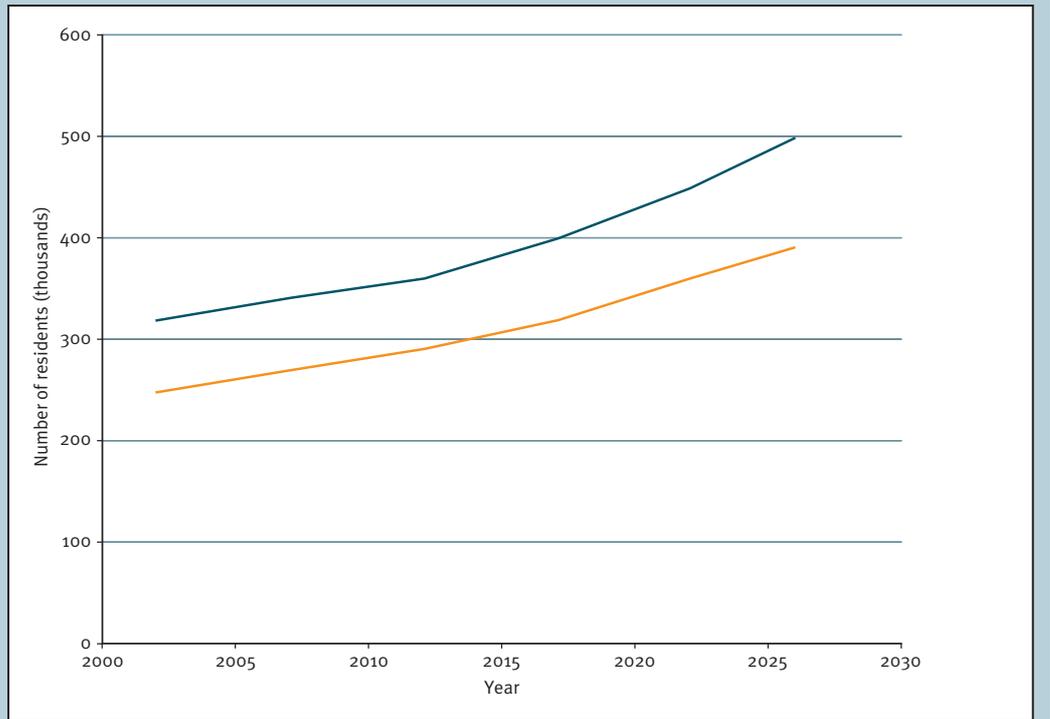
KEY
— Scenario 1
— Scenario 2 (and 3)

Source: PSSRU Wanless model estimates

CARE-WITH-HOUSING SERVICES

The Wanless scenarios assume that between 16 and 44 per cent of older people unable to perform one or more ADL without help receive care with housing. These proportions depend mainly on the prevalence of cognitive impairment and whether or not the individual lives alone. Most people receive care with housing because cognitive impairment requires levels of supervision as well as personal care that are very difficult for informal carers to provide at home. Figure 3 above shows how demand for care-with-housing services is projected to change under the base-case scenarios (scenarios 2 and 3 are considered together because the inclusion of well-being outcomes does not have an impact on the numbers of people needing care-with-housing services; for more details, *see* Chapter 10 of the Wanless report). It can be seen that a much lower level of care-with-housing services is required under the Wanless review scenarios than under scenario 1, which represents the current system (NHS-funded beds in hospitals and nursing homes have been excluded from the figures presented in scenario 1). This result occurs mainly because no individual without either substantial physical or cognitive impairment is in care-with-housing/institutional settings in scenarios 2 and 3.

Associated expenditure is reported in Table 7 opposite. Projected expenditure diverges more sharply between the scenarios than projected numbers of care-with-housing clients. This is because of different assumptions about the unit costs of institutional care. In the Wanless review scenarios, all care with housing is costed at £369.40 per resident week. Scenario 1, however, includes three different types of residential services – nursing homes, independent residential homes and local authority homes – all of which have different unit costs, and it also differentiates between privately funded and local authority-

TABLE 7: PROJECTED GROSS EXPENDITURE ON CARE-WITH-HOUSING/INSTITUTIONAL SERVICES, UNDER BASE CASE ASSUMPTIONS, ENGLAND, 2002 TO 2026

	Gross expenditure (£million)						% change 2002–26
	2002	**2007**	**2012**	**2017**	**2022**	**2026**	
Scenario 1	6,300	7,300	8,500	10,100	12,300	14,600	131
Scenario 2 (and 3)	4,900	5,600	6,600	8,000	9,700	11,400	134

Source: PSSRU Wanless model estimates

supported places, which also have different unit costs. For example, the cost of local authority homes is £560 per resident week, which is significantly higher than the unit cost assumed under the Wanless scenarios. This means that the comparison of projected expenditure between scenarios needs to be treated with caution. Nevertheless, to the extent that scenarios 2 and 3 are based on more cost-effective patterns of care, the comparison is informative.

COMMUNITY-BASED SERVICES

The Wanless review team has modelled community-based services on current home care services and have designated them as services to provide the outcomes associated with personal care (for more details, *see* Chapter 10 of the Wanless report). A comparison of the

4   **PROJECTED WEEKLY HOURS OF COMMUNITY-BASED SERVICES (OR EQUIVALENT) FOR ALL BASE SCENARIOS, UNDER BASE CASE ASSUMPTIONS, ENGLAND, 2002 TO 2026**

KEY
— Scenario 1
— Scenario 2 (and 3)

Source: PSSRU Wanless model estimates
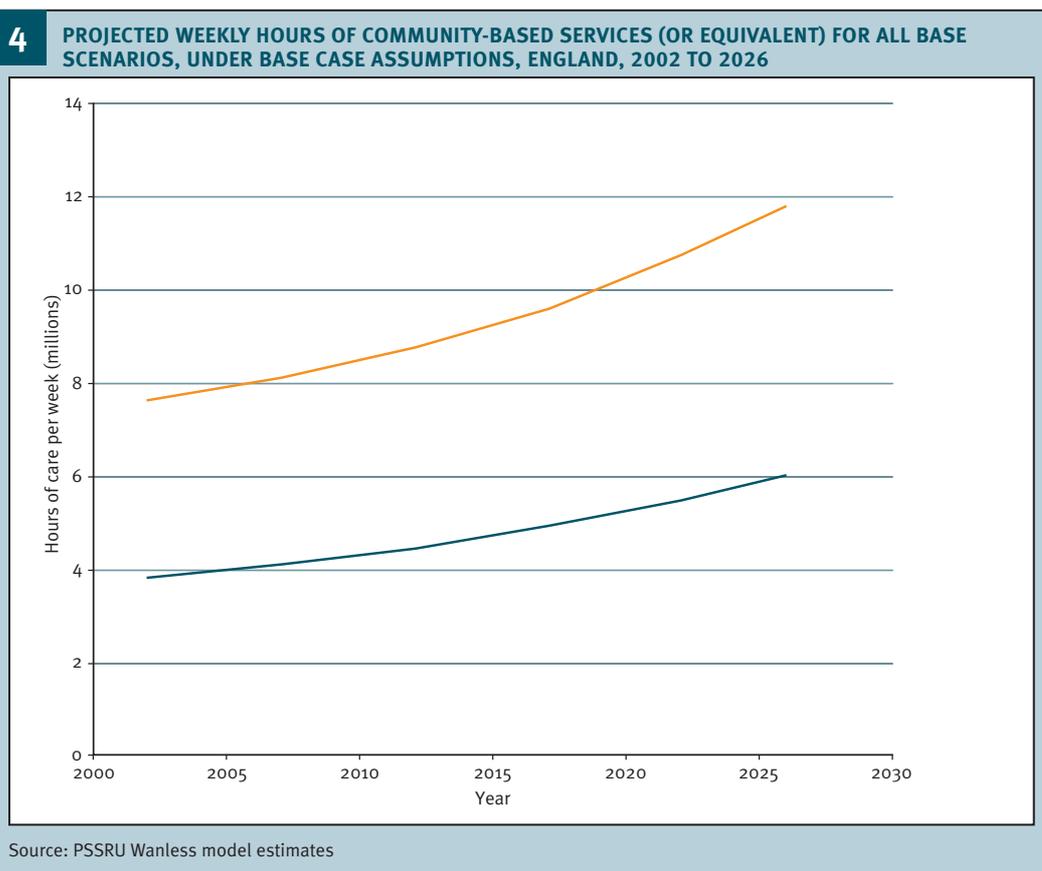
TABLE 8: PROJECTED GROSS EXPENDITURE ON COMMUNITY-BASED SERVICES, UNDER BASE CASE ASSUMPTIONS, ENGLAND, 2002 TO 2026

	Gross expenditure (£million)						% change 2002–26
	2002	**2007**	**2012**	**2017**	**2022**	**2026**	
Scenario 1	2,300	2,700	3,200	3,900	4,800	5,800	152
Scenario 2 (and 3)	4,600	5,400	6,400	7,800	9,600	11,500	148

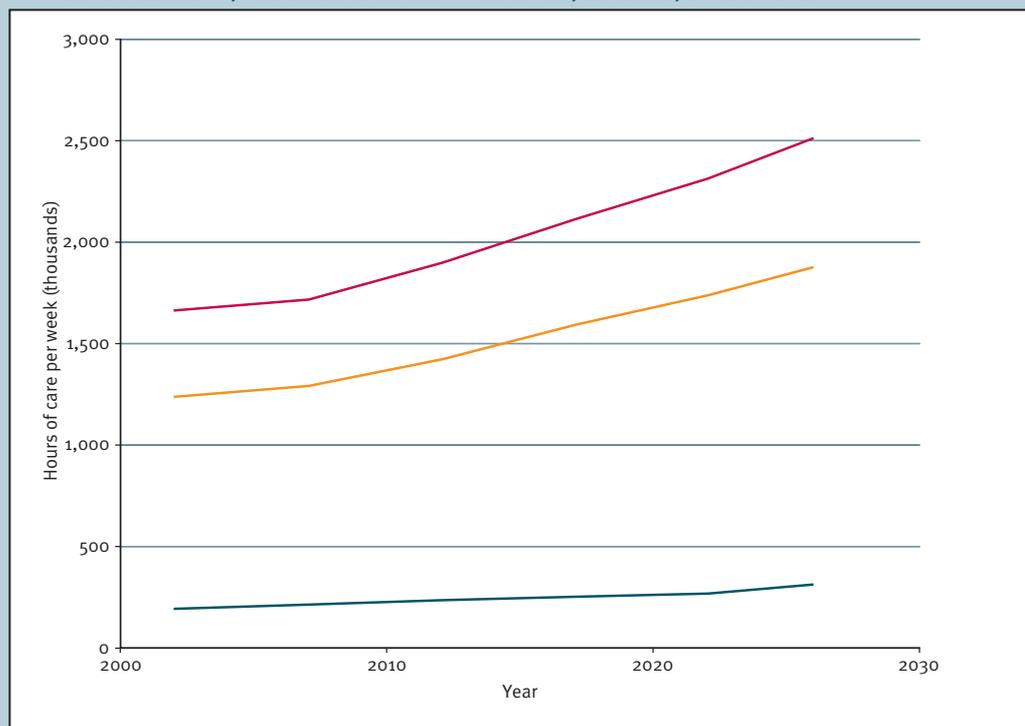Source: PSSRU Wanless model estimates

level of demand for the service across the base-case scenarios is given in Figure 4 (*see* p 21). As can be seen, the model estimates that, in scenario 2 (and 3), demand for community-based services for disabled people would be much greater than in the current system. However, in the current system a significant number of people with no self-reported functional impairments, about 430,000 in 2002, are in receipt of privately funded home help services. These people have been excluded from this analysis because the Wanless review team does not allocate any services designed to achieve personal care outcomes to people with no functional impairments; it is effectively assumed that all those people receiving home care services who have no self-reported functional impairments are receiving home care services for reasons other than achieving personal care outcomes, for example, domestic help. Including these people would probably make the numbers of recipients of services about equivalent across all scenarios, possibly even higher for scenario 1, accounting for those people who receive both privately funded and local authority-supported home help services. However, if the volume of services received is considered, scenarios 2 and 3 continue to be more generous as the privately funded home help is provided at a very much lower intensity than local authority-funded home care. A small proportion of those with no functional impairments are also estimated to be receiving local authority-supported, community-based services such as meals, home care and day care. As the number is small and these people have been assessed as needing services, they have been included in the totals for comparison. It is likely that self-reported IADLs/ADLs do not perfectly predict need for services.

The cost of these services is shown in Table 8 above. The costs for scenario 1 include the cost of meals, for comparison, because these services are implicit in the broad description given by the Wanless review team of services designed to achieve personal care outcomes. The estimated costs of scenario 2 (and 3) are about twice as large as those in the current system. There is again a caveat about different unit costs, because the PSSRU Wanless model does not differentiate costs of privately and publicly funded care.

OTHER COMMUNITY-BASED SERVICES

The services reported under this heading are of two types: carer-support services and services to provide well-being outcomes. In the PSSRU standard model, carer-support services and services to enhance well-being are not separately identified. With regard to carer-support services, for example, the PSSRU model includes support for carers as part of the core services provided to disabled older people. The Wanless review team scenarios, on the other hand, define support for carers in terms of specific carer services, in particular, breaks from caring. The Wanless scenarios envisage that day care would be a mainstay of these specific carer services, although the type of day care envisioned for the

5 PROJECTED WEEKLY HOURS OF OTHER COMMUNITY-BASED SERVICES (OR EQUIVALENT) FOR ALL BASE SCENARIOS, UNDER BASE CASE ASSUMPTIONS, ENGLAND, 2002 TO 2026

KEY
— Scenario 1
— Scenario 2
— Scenario 3

Source: PSSRU Wanless model estimates

future might be quite different, with more active participation by those attending, for example. In Figure 5 above, which shows the variation in volume of services between the three base-case scenarios, the Wanless scenarios are therefore compared with provision of day care under the standard PSSRU model.

As is apparent from Figure 5, the Wanless review scenarios are substantially more generous in their provision of day-care services aimed at supporting carers and enhancing the well-being of the older person. Expenditure on these services is reported in Table 9 below. As with the volume of services provided, the projections show that much more is to be spent on these services under scenarios 2 and 3. The reasons for this are discussed in more detail below where the other community-based service category is split into its component parts: carer support services and well-being services.

TABLE 9: PROJECTED GROSS EXPENDITURE ON OTHER COMMUNITY-BASED SERVICES, UNDER BASE CASE ASSUMPTIONS, ENGLAND, 2002 TO 2026

	Gross expenditure (£million)						% change 2002–26
	2002	**2007**	**2012**	**2017**	**2022**	**2026**	
Scenario 1	300	300	400	500	600	700	146
Scenario 2	1,600	1,900	2,300	2,800	3,400	4,000	146
Scenario 3	2,200	2,500	3,000	3,700	4,500	5,300	145

Source: PSSRU Wanless model estimates

CARER-SUPPORT SERVICES

There has been a great deal of policy emphasis on support for carers over the last 15 years or so (Pickard 2001, 2004). Current policies are embodied in the National Strategy for Carers (1999), the principles of which have recently been endorsed (Department of Health 2006). The emphasis in the National Strategy for Carers is on the provision of breaks from caring. The strategy introduced the Carers' Special Grant, renewed on a regular basis, which provides ring-fenced funding to enable carers in England to take a break from caring. The National Strategy for Carers has, however, been criticised, in part, for providing too little funding for carers (Parker and Clarke 2002; Audit Commission 2004). As Parker and Clarke wrote in relation to the Carers' Special Grant, 'It was real money, but £140 million over three years and over the whole of England, did not signal a major change in support structures' (Parker and Clarke 2002, p 354). Although the Carers' Special Grant has since been extended to 2006 and the funding increased to £185 million, the assessment of the Audit Commission recently was that 'given the number of carers, resources per head are still modest' (Audit Commission 2004, p 41).

As discussed already, carer-support services, in the form of breaks from caring, are an important part of the service models described by the Wanless review scenarios. Indeed, the approach to carer support adopted in the Wanless review scenarios is, in some respects, similar to that adopted in the National Strategy for Carers, in that both place great emphasis on breaks from caring. Both also emphasise home-based respite support for carers, rather than overnight stays in residential/nursing care homes (compare Department of Health 2006). There are, however, very large differences in the resources that would be devoted to the support of carers under the Wanless review scenarios compared with the current system.

6 **PROJECTED NUMBER OF RECIPIENTS OF CARER-SUPPORT SERVICES FOR SCENARIO 2 (AND 3), UNDER BASE CASE ASSUMPTIONS, ENGLAND, 2002 TO 2026**

Source: PSSRU Wanless model estimates
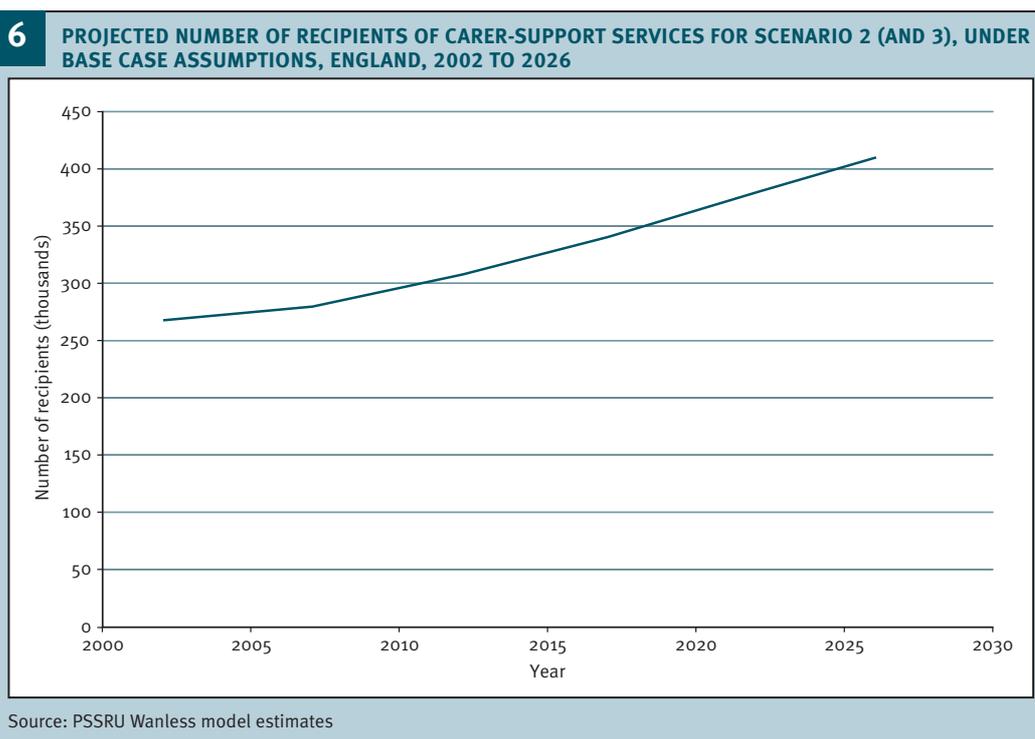
TABLE 10: PROJECTED GROSS EXPENDITURE ON CARER-SUPPORT SERVICES, UNDER BASE CASE ASSUMPTIONS, ENGLAND, 2002 TO 2026

|	Gross expenditure (£million)						% change 2002–26
	2002	**2007**	**2012**	**2017**	**2022**	**2026**	
Scenario 2 (and 3)	1,600	1,900	2,300	2,800	3,400	4,000	146

Source: PSSRU Wanless model estimates

Figure 6 opposite presents the estimated demand for carer-support services under the Wanless review (scenarios 2 and 3). It is estimated that about 270,000 people would require carer-support services in 2002, rising to about 410,000 in 2026. This is an increase of just over 50 per cent between 2002 and 2026. The cost implications of carer-support services are shown in Table 10 above (this cost forms a proportion of the cost of other community-based services in scenario 3 and the total cost in scenario 2). Table 10 shows that expenditure on carer-support services under the Wanless review team scenarios would amount to £1,600 million in 2002, rising to £4,000 million in 2026. Expenditure on carer support under the Wanless review scenarios is *very* much higher, even in 2002, than is currently allocated under the Carers' Special Grant. Some of the enhanced expenditure on carers in 2002 arises because it is assumed that there are more informal carers under the Wanless review scenarios than there are at present. However, most of the increased expenditure under the Wanless review scenarios in 2002 derives from an increase in the amount of support provided to carers.

Nevertheless, expenditure on carer-support services in the Wanless review scenarios is not large compared with the cost of community-based services and institutional services. Under the Wanless review scenarios, expenditure on carer support amounts to £4,000 million by 2026, compared with £11,400 million on care with housing (residential care) and £11,500 million on community-based services (*see* Table 7, p21, Table 8, p 22, and Table 10 above). The comparatively low expenditure on carer support arises partly because, under the assumptions used, the estimated proportion of older people with carers who provide a level of support that is significant enough to constitute the carer being 'stressed' is a relatively small proportion of those receiving informal care (for more details on the derivation of these proportions, *see* Chapter 10 of the Wanless report). (The proportion of older people with 'stressed' carers might, however, also be greater if all hours of informal care provided were taken into account, rather than personal care/supervision hours only.)

SERVICES FOR WELL-BEING

As discussed in the Wanless report, there is no well-developed evidence base to flesh out a picture of what services designed to promote well-being would look like or indeed the cost-effectiveness of the equivalent day-care services in delivering the outcome of well-being. The assumptions made by the Wanless review team are discussed in greater detail in Chapter 10 of the Wanless report; the implications of trying to achieve this outcome are presented here. Figure 7 overleaf shows the projected numbers of people requiring these services to 2026 in scenario 3 and under base case assumptions.

7 PROJECTED NUMBER OF RECIPIENTS OF WELL-BEING SERVICES FOR SCENARIO 3, UNDER BASE CASE ASSUMPTIONS, ENGLAND, 2002 TO 2026
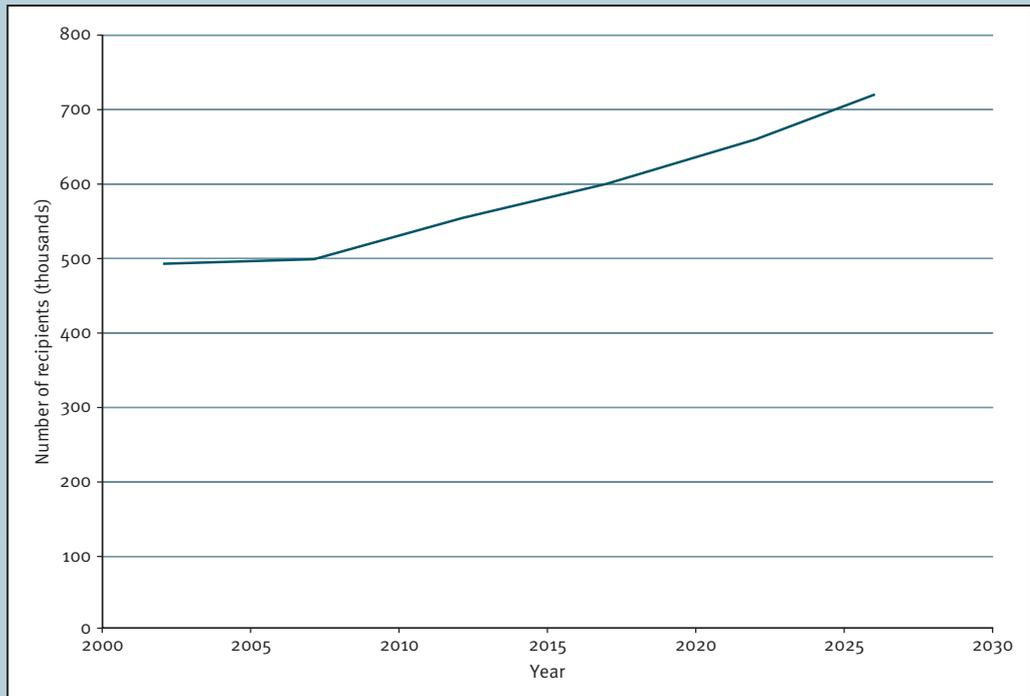
Source: PSSRU Wanless model estimates

It is estimated that there will be almost 500,000 people requiring services to improve well-being outcomes in 2002, rising to just over 700,000 in 2026 (*see* Figure 7 above). This is an increase of close to 50 per cent. The cost implications of these services are not large compared with the other services reported here. This is mostly because the estimated numbers requiring these services are quite small, representing only 17 per cent of the disabled older population living alone. Also, as noted in the Wanless report, services to help improve social participation outcomes will be only a small part of what might be possible. The cost implications of these services are shown in Table 11 below, and the cost of these services forms a proportion of the cost of other community-based services reported (*see* pp 21–23) for scenario 3; the rest of the cost is a result of spending on carer-support services.

TABLE 11: PROJECTED GROSS EXPENDITURE ON WELL-BEING SERVICES FOR SCENARIO 3, UNDER BASE CASE ASSUMPTIONS, ENGLAND, 2002 TO 2026

| | Gross expenditure (£million) | | | | | | % change 2002–26 |
	2002	2007	2012	2017	2022	2026	
Scenario 3	600	600	700	900	1,100	1,300	117

Source: PSSRU Wanless model estimates

TABLE 12: PROJECTED GROSS EXPENDITURE ON CARE MANAGEMENT AND ASSESSMENT, UNDER BASE CASE ASSUMPTIONS, ENGLAND, 2002 TO 2026

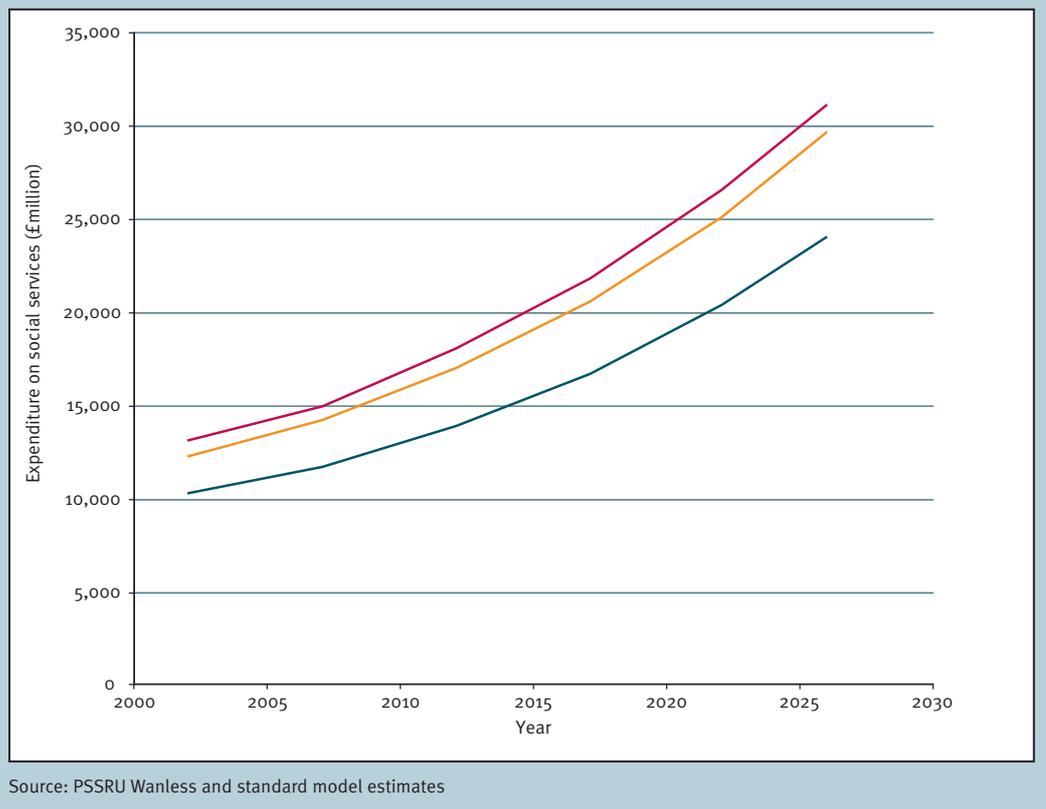|	Gross expenditure (£million)						% change 2002–26
	2002	**2007**	**2012**	**2017**	**2022**	**2026**	
Scenario 1	600	700	900	1,100	1,300	1,500	143
Scenario 2	1,100	1,200	1,500	1,800	2,200	2,600	147
Scenario 3	1,300	1,500	1,800	2,100	2,600	3,100	145

Source: PSSRU Wanless model estimates

ASSESSMENT AND CARE MANAGEMENT

In addition to the services described above, the models include estimates for spend on care management and assessments. Table 12 above shows how this expenditure varies between scenarios. Expenditure on care management and assessment, under the Wanless review scenarios, is roughly double that for scenario 1 in the base year. By 2026, the model estimates that, under scenario 2, care management and assessment will cost roughly £1 billion more than under the current system. Under scenario 3, the difference is estimated to be about £1.5 billion. The increase in expenditure is a result of both more assessments and more care management under the Wanless review scenarios. Both scenarios assume that more people are receiving care so more people are in need of care management. The cost of assessments is also greater largely a result of the differences in the way in which assessments are modelled between the Wanless and standard models. In the former, assessments are assumed to be provided to the entire *potential* population in demand of services, whereas, in the latter, the number of assessments is derived from Department of Health Referrals, Assessments and Packages of Care (RAP) data for 2002/3 and is assumed to rise in line with the number of disabled people. In the base year these two methods arrive at very different estimates for the number of assessments. The standard model estimates that there are about 900,000 assessments; the Wanless review model estimates that for scenario 2 there would be 1,500,000 assessments.

Overall expenditure

Figure 8 overleaf compares total expenditure on social services across the three base-case scenarios. As can be seen, both of the alternative service models to the current configuration of services are estimated to be more expensive. Under scenario 1, total expenditure, public and private, is estimated to increase from about £10 billion in 2002 to about £24 billion in 2026 (the cost of privately funded home help services for those without disability is included in the total expenditure for scenario 1). In contrast, under scenario 2, which is estimated to be about £2 billion more expensive than scenario 1 in 2002, expenditure is estimated to rise to close to £30 billion in 2026, with scenario 3 being marginally more expensive than scenario 2.

In Figure 9 (*see* p 29), expenditure on social services is considered relative to the gross domestic product (GDP), assuming that the GDP increases in line with the projections produced by HM Treasury (2005). The model estimates that, although scenarios 2 and 3 are more expensive than the current system, expenditure on social services for older people would not rise beyond 2 per cent of GDP by 2026, even under the most generous service model.

8 PROJECTED TOTAL EXPENDITURE ON SOCIAL SERVICES, UNDER BASE CASE ASSUMPTIONS, ENGLAND, 2002 TO 2026

KEY
— Scenario 1
— Scenario 2
— Scenario 3

Source: PSSRU Wanless and standard model estimates

BREAKDOWN OF EXPENDITURE BETWEEN SOURCES OF FUNDING

To what extent people should fund their own care and to what extent long-term care, or more specifically social services, should be publicly funded continues to be a source of contention and debate. Work by the PSSRU long-term care finance team at LSE, and Ruth Hancock at Essex University, has focused on developing various scenarios to explore the financial and distributional implications for service users and the public purse of changes to the current system of funding. These implications are reported on by Hancock and colleagues (2006). Here we explore the financial implications for service users and for public expenditure of the various base-case scenarios, or service models, assuming that the current funding system remains in place. The analysis has been conducted using the CARESIM model, as described earlier. The current funding system is taken to mean the current national system of charging for residential care in England and a system of charging for home care that corresponds to the principles of Department of Health guidance (Department of Health 2003).

Table 13 opposite shows total expenditure on social services broken down by source of funding, where public expenditure is net expenditure on personal social services and private expenditure is a combination of user charges and privately purchased care.

Assuming that the current funding system remains in place, private expenditure would be broadly similar under the three scenarios, although public expenditure would be significantly higher. It would be around 44 per cent higher under scenario 2 and 48 per

9 **PROJECTED EXPENDITURE ON SOCIAL SERVICES EXPRESSED AS A PERCENTAGE OF GDP, UNDER BASE CASE ASSUMPTIONS, ENGLAND, 2002 TO 2026**

KEY
— Scenario 1
— Scenario 2
— Scenario 3
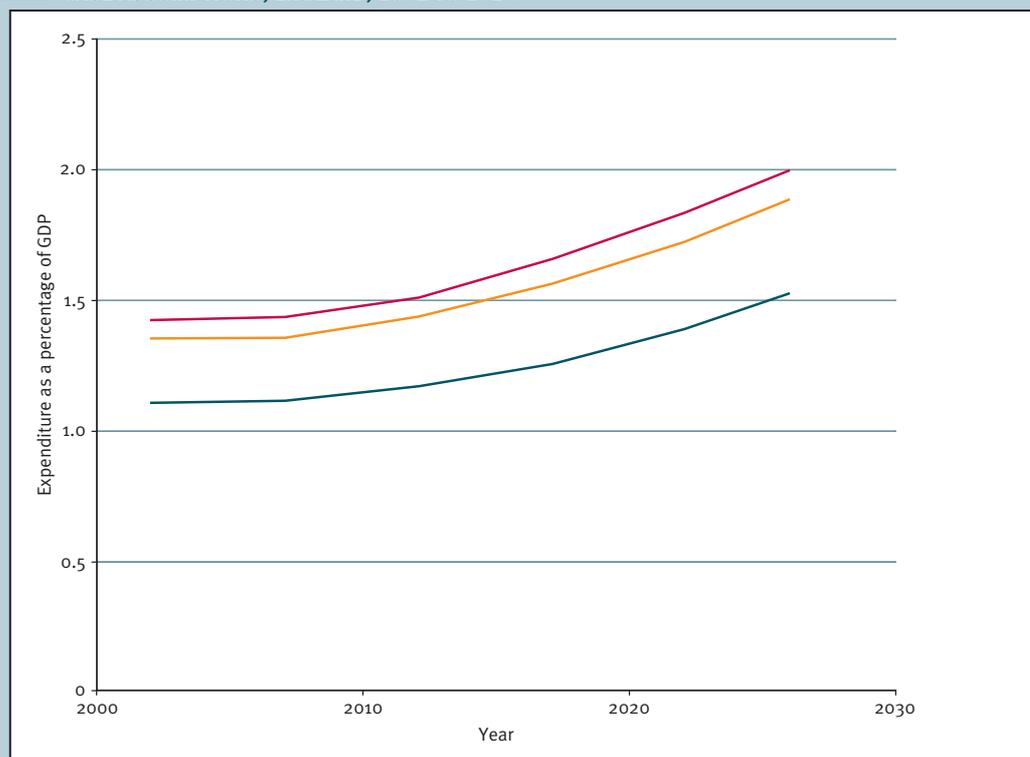
Source: PSSRU long-term care finance model and Wanless model estimates

cent higher under scenario 3 in the base year than under current patterns of care (scenario 1). Public expenditure accounts for 50 per cent of total expenditure under scenario 1 in 2002, falling to 47 per cent in 2026, although it accounts for 59 per cent of

TABLE 13: PROJECTED TOTAL EXPENDITURE ON SOCIAL SERVICES FOR OLDER PEOPLE, BY FUNDING SOURCE, UNDER BASE CASE ASSUMPTIONS, ENGLAND, 2002 TO 2026

Funding source	Total expenditure (£million)						% change 2002–26
	2002	**2007**	**2012**	**2017**	**2022**	**2026**	
Scenario 1							
Public	5,000	5,700	6,700	8,000	9,500	11,300	126
Private	5,100	5,900	7,000	8,400	10,700	12,700	149
Scenario 2							
Public	7,200	8,300	10,000	12,000	14,600	17,300	140
Private	5,100	5,900	6,900	8,300	10,400	12,200	139
Scenario 3							
Public	7,400	8,600	10,400	12,600	15,300	18,200	146
Private	5,500	6,400	7,400	9,000	11,100	13,200	140

Source: PSSRU long-term care finance model and Wanless model estimates

10 **PROJECTED PUBLIC AND PRIVATE EXPENDITURE ON SOCIAL SERVICES, UNDER BASE CASE ASSUMPTIONS, ENGLAND, 2002 TO 2026**

Source: PSSRU long-term care finance model and Wanless model estimates
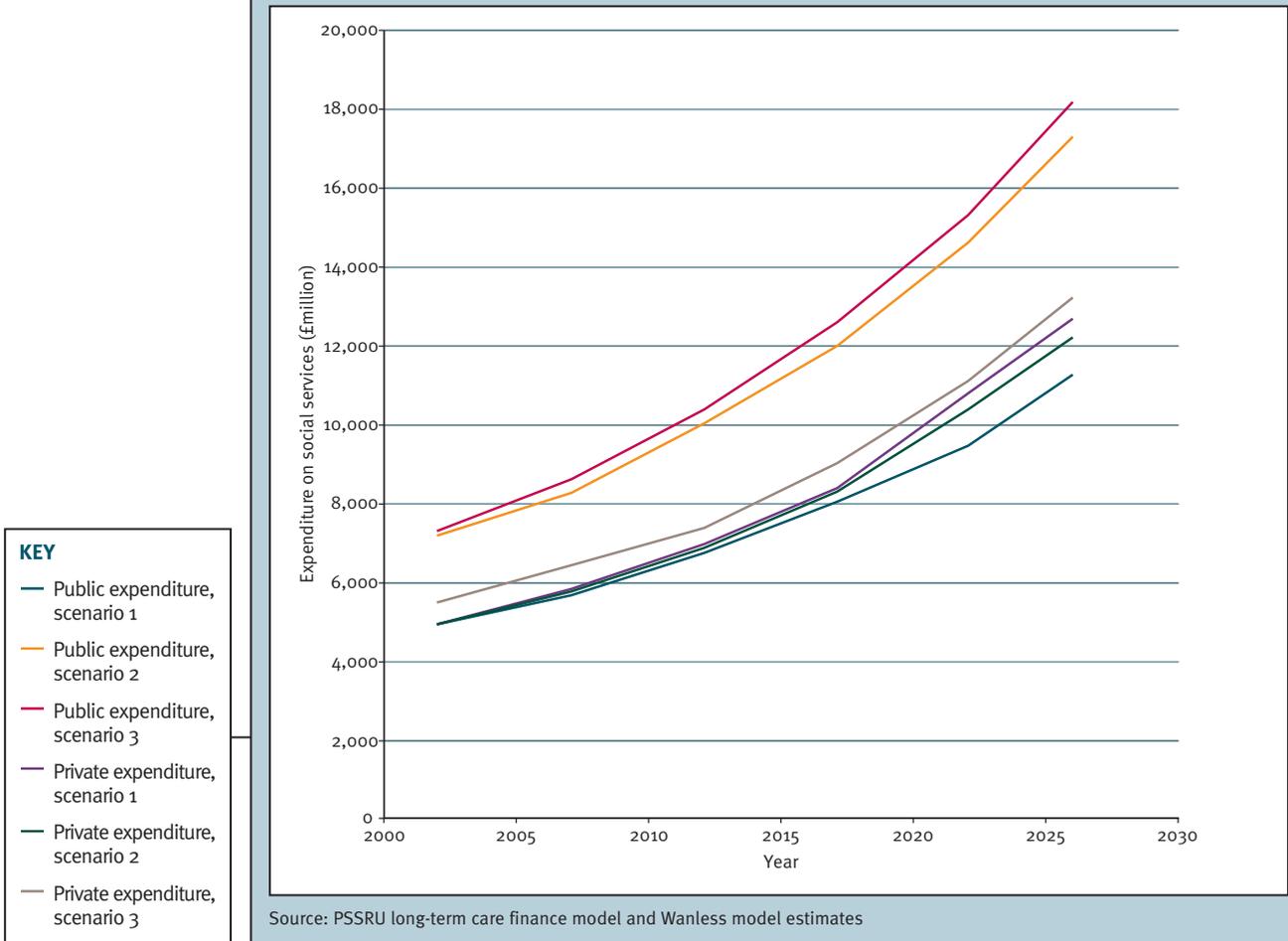
total expenditure under scenario 2 and 57 per cent under scenario 3. An important reason for the different balance of public and private funding between the scenarios is the different balance of residential and community-based care. Service users meet, through user charges, a higher proportion of the costs of residential care than of home care.

Figure 10 above demonstrates this pattern more clearly, showing that public expenditure will grow at a faster rate under scenarios 2 and 3, whereas private expenditure will grow at a roughly similar rate under all scenarios, although slightly more steeply under scenario 1. As already noted, in addition to the differences in growth rates, the contributions from the public purse are estimated to be greater under the Wanless scenarios compared with the current service model. In scenario 2, public expenditure is expected to rise from £7.2 billion in 2002 to £17.3 billion in 2026, compared with a rise from £5 billion in 2002 to £11.3 billion in 2026 under scenario 1. In effect most of the extra expenditure estimated to be incurred under scenarios 2 and 3 is estimated to fall to the public purse, assuming that the current system of funding remains.

CHANGING THE FUNDING SYSTEM

The question of who should pay for social care is a continuing subject of debate. In this section we consider how a different funding system might alter the balance of funding between private and public sources. As the central theme of the debate has been on the provision of 'free' personal care (Royal Commission on Long Term Care 1999; Bell and Bowes 2006), where 'free' denotes that personal care is fully funded by the state, we examine the effects that a policy of free personal care might have on the balance of expenditure between funding sources in England.

The scenario utilises both the CARESIM and PSSRU models. The effects of a policy of free personal care on the relative contributions of service users in terms of user charges are estimated in CARESIM and these proportions are fed back into the PSSRU model as previously described (*see* pp 12–13). A flat rate of £175.95 per week is assumed as the contribution by social services towards personal care in institutional care settings. This is the difference between the total care home fee and the estimated 'hotel costs' in care homes. The latter is estimated with reference to social security benefits, as described by Hancock and colleagues (2006). (It should be noted that this is only one method by which free personal care could be modelled. Different approaches to the modelling of free personal care are described in Hancock *et al* (2006).) Social services are assumed to meet the full costs of personal care in home care settings. An increase in demand for services that might be expected after the introduction of free personal care (*see* Bell and Bowes (2006) for details of the Scottish experience) has not been modelled. In effect the model demonstrates how the balance of expenditure would shift, assuming that all other factors

11 PROJECTED PUBLIC EXPENDITURE ON SOCIAL SERVICES FOR OLDER PEOPLE, SCENARIO 2 ONLY, UNDER THE CURRENT MEANS-TESTED FUNDING SYSTEM AND UNDER FREE PERSONAL CARE, ENGLAND, 2002 TO 2026
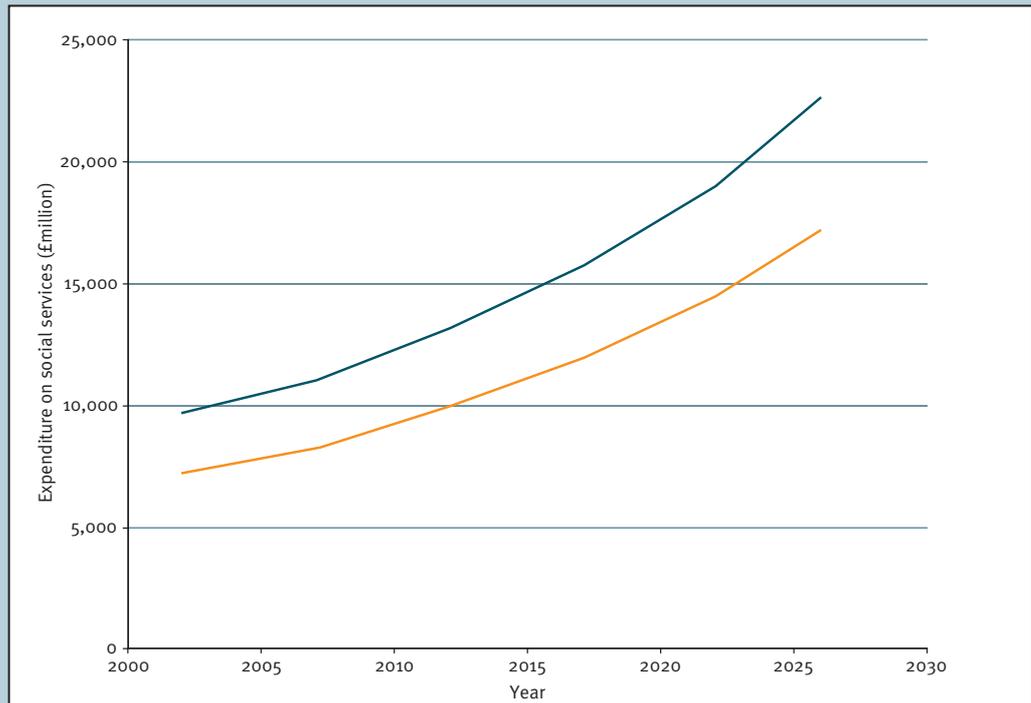
KEY
— Free personal care
— Means-testing (base case)

Source: Wanless model estimates

TABLE 14: PROJECTED TOTAL EXPENDITURE ON SOCIAL SERVICES FOR OLDER PEOPLE, BY FUNDING SOURCE, UNDER A FREE PERSONAL CARE POLICY, ENGLAND, 2002 TO 2026

Funding source	Total expenditure (£million)						% change 2002–26
	2002	**2007**	**2012**	**2017**	**2022**	**2026**	
Scenario 1							
Public	6,500	7,400	8,600	7,600	12,200	14,500	123
Private	3,600	4,200	5,100	8,900	7,900	9,400	161
Scenario 2							
Public	9,700	11,100	13,200	15,800	19,100	22,700	134
Private	2,500	3,000	3,700	4,600	5,800	6,900	176
Scenario 3							
Public	10,200	11,700	13,900	16,800	20,300	24,000	135
Private	2,700	3,200	3,900	4,900	6,200	7,300	170

Source: PSSRU long-term care finance model and Wanless model estimates

remained the same. Although this scenario does not capture all the implications of such a policy, it does demonstrate how such a policy may be expected to redistribute the balance of funding compared with the current funding system.

Table 14 above shows how expenditure by funding source varies across the base cases under a policy of free personal care. Under all scenarios there is a significant redistribution from funding by private sources towards public sources. (The slight difference between total expenditure, under scenario 1, under a funding system of free personal care compared with the current funding system is a result of the differences in the unit costs of privately and publicly funded services.) This is shown more clearly in Figure 11 (*see* p 31), which compares the level of public funding under the current funding system and a policy of free personal care for scenario 2 only.

Workforce requirements

A change in demand for services has obvious implications for supply, most notably workforce supply. The picture with regard to the future workforce supply is not clear (please refer to Chapter 10 of the Wanless report for discussion of this point). The implications for workforce supply of the various base-case scenarios are presented in Table 15 opposite. The most significant difference in the three scenarios is in the number of home helps/care assistants required. There are estimated to have been around 250,000 whole-time equivalent (WTE) home helps/care assistants providing care for older people in England in 2002. Under the Wanless review scenarios, the model estimates that a further 150,000–200,000 extra home helps/care assistants would have been needed in 2002 to deliver the services specified by the Wanless review team. The number of home helps/care assistants required to deliver these services into the future is projected to be around 620,000 for scenario 2 and 690,000 for scenario 3 in 2026. This should be compared with 390,000 if the current service configuration is assumed to continue. A greater number of social workers, occupational therapists, managers and support staff will also be required to deliver the Wanless review scenarios but the increase is not as significant as that

TABLE 15: PROJECTED WORKFORCE REQUIREMENTS FOR SOCIAL SERVICES FOR OLDER PEOPLE, WHOLE-TIME EQUIVALENTS, UNDER BASE CASE ASSUMPTIONS, ENGLAND, 2002 TO 2026

Occupational group	Workforce requirement (thousands)						% change 2002–26
	2002	**2007**	**2012**	**2017**	**2022**	**2026**	
Scenario 1							
Social workers	11.0	12.0	13.0	14.0	16.0	17.0	53
Occupational therapists	0.8	0.9	0.9	1.0	1.2	1.3	53
Home helps/care assistants	251.0	266.0	287.0	316.0	353.0	391.0	56
Managers	66.0	70.0	75.0	83.0	93.0	103.0	56
Support staff	63.0	67.0	72.0	80.0	89.0	99.0	56
Total[1]	**393.0**	**416.0**	**449.0**	**494.0**	**551.0**	**611.0**	**56**
Scenario 2							
Social workers	18.0	19.0	21.0	23.0	26.0	28.0	53
Occupational therapists	1.4	1.4	1.6	1.7	1.9	2.1	54
Home helps/care assistants	403.0	424.0	461.0	509.0	566.0	620.0	54
Managers	95.0	99.0	108.0	120.0	133.0	146.0	54
Support staff	91.0	95.0	104.0	115.0	127.0	140.0	54
Total[1]	**608.0**	**639.0**	**695.0**	**769.0**	**854.0**	**935.0**	**54**
Scenario 3							
Social workers	18.0	19.0	21.0	23.0	26.0	28.0	53
Occupational therapists	1.4	1.4	1.6	1.7	1.9	2.1	54
Home helps/care assistants	448.0	471.0	512.0	565.0	628.0	688.0	54
Managers	105.0	110.0	120.0	132.0	147.0	161.0	54
Support staff	100.0	105.0	115.0	127.0	141.0	154.0	54
Total[1]	**673.0**	**707.0**	**768.0**	**849.0**	**943.0**	**1,032.0**	**53**

Source: PSSRU Wanless model estimates
[1] Discrepancies due to rounding.

required for home helps/care assistants. Overall, the model estimates that the size of the workforce would need to increase significantly to deliver the Wanless review scenarios.

Transitions

The PSSRU Wanless model incorporates each of the Wanless scenarios for every year, from 2002 to 2026. This approach allows us to examine the relative cost of each service configuration or scenario at each point in time. It does not, however, represent the reality of introducing a new service model where significant changes will need to be made to the supply side to, for example, build capacity as is demonstrated above. To allow for the providers to develop their services and for a smooth transition, changes are usually implemented over an extended period of time. In the following scenario, shown in Figure 12 overleaf, we show schematically the likely financial implications of moving from the current system to either of the other two base scenarios considered in this review. We have assumed, for the purposes of this analysis, that by 2012 the changes needed to the system under both scenarios will have been partly implemented, and that by 2026 they will have been fully implemented. In modelling terms, this means that by 2012 expenditure will be composed of about half the estimated costs of scenario 1 and half the estimated costs of the Wanless review scenarios; by 2026, expenditure will be composed entirely of the Wanless review scenario estimate for expenditure.

12 PROJECTED IMPLICATIONS FOR EXPENDITURE OF TRANSITION TO NEW SYSTEM, UNDER BASE CASE ASSUMPTIONS, ENGLAND, 2002 TO 2026

KEY
— Scenario 1
— Transition to scenario 2
— Transition to scenario 3

Source: PSSRU long-term care finance model and Wanless model estimates
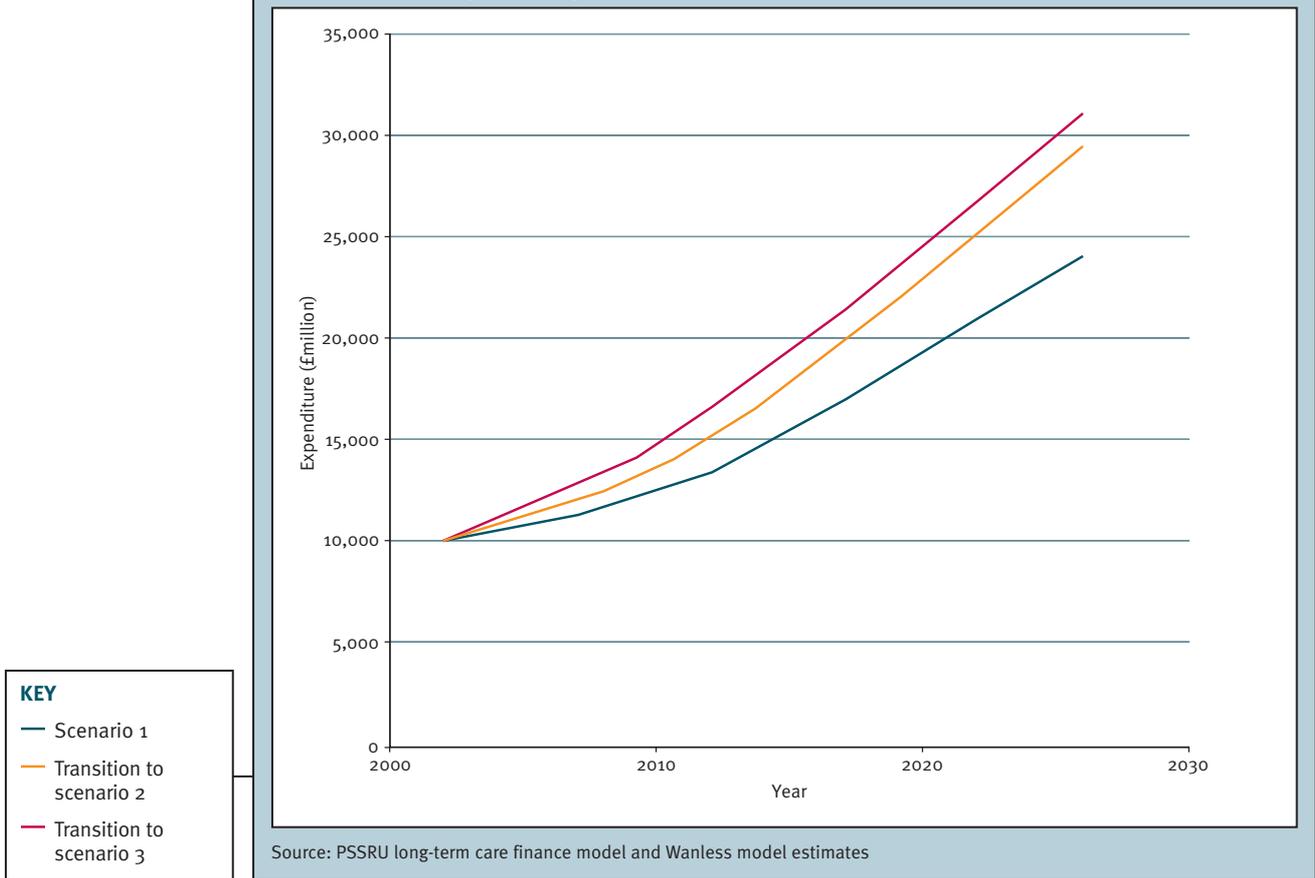
Figure 12 shows that expenditure would have to rise more steeply in future years if we were to implement either of the service configurations described by the Wanless review scenarios. If the service model to be implemented were scenario 2 then expenditure would have to increase from the 2002 level of about £10 billion to an estimated £30 billion in 2026; for scenario 3, expenditure would have to increase to an estimated £31.3 billion.

What happens if the key assumptions change?

This section investigates the sensitivity of the projections to changes in the base-case assumptions, in particular to changes in the assumptions about future trends in disability rates, the unit costs of care, the availability of informal care and variations in the take-up of services. The rationale behind these scenarios is given in Chapter 10 of the Wanless report and is briefly summarised here before presenting the results. The sensitivity of the estimates to changes in these variables has been explored using only one of the Wanless review scenarios, scenario 2. Table 20 (*see* p 48) summarises the projections obtained under different assumptions.

Changing assumptions about trends in disability rates

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; Dunnell 1995). In previous versions of the long-term care finance model, the Personal Social Services Research Unit (PSSRU) team has explored the impact of changing assumptions about age-specific disability rates on demand for long-term care services. Here we report on a new
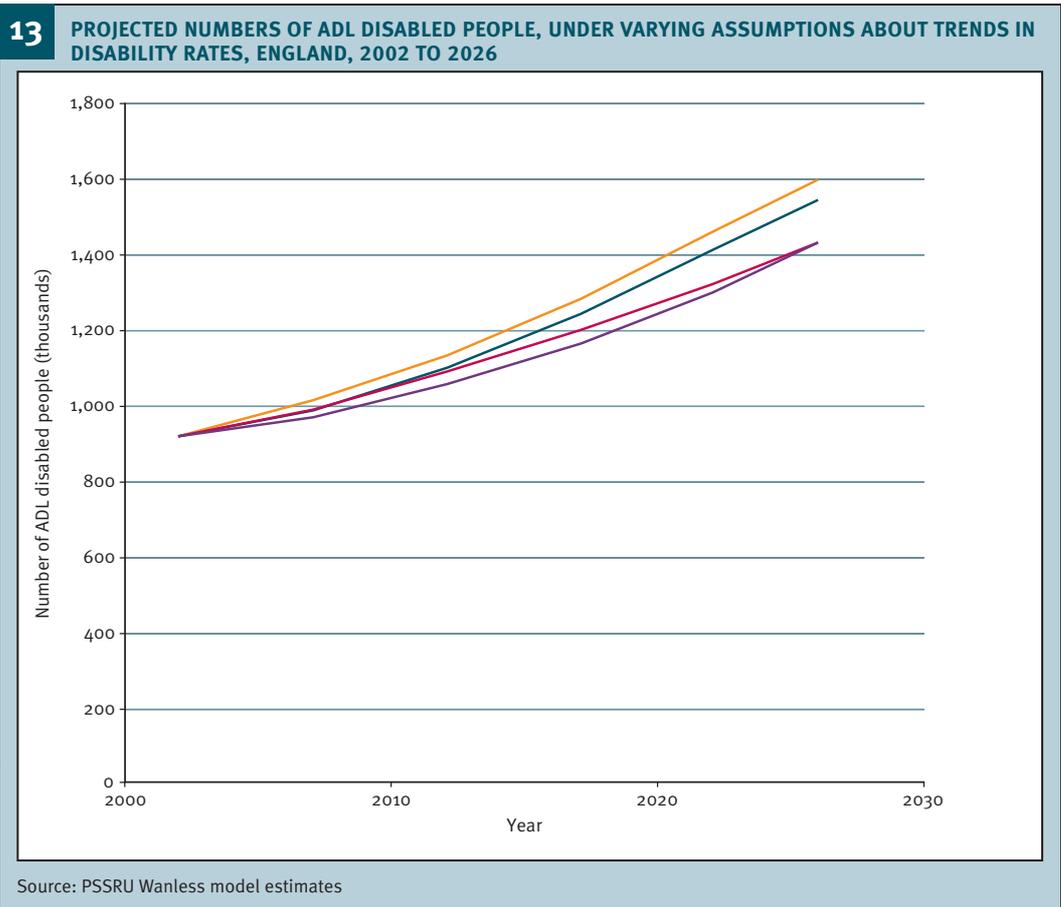

DISABILITY SENSITIVITY SCENARIOS

- *No change:* the age-specific prevalence of diseases remains the same with prevention strategies and effective treatments simply offsetting the negative influences of obesity and other cohort trends that increase the prevalence of stroke and coronary heart disease (CHD). Incidence of and recovery rates from dependency remain the same with no further effect of treatments. Mortality rates continue to decline at levels commensurate with the Government Actuary's Department (GAD) principal projections.
- *Poorer population health:* obesity trends of a 2 per cent increase every year continue. This increases the prevalence of arthritis, stroke, CHD and vascular dementia but also the resulting dependency associated with these diseases. The emergence of ethnic minorities in significant numbers into the older population adds to the prevalence of stroke and CHD. Some prevention strategies are in place but they fail to offset the increasing prevalence. Treatments continue to focus on reducing the mortality from diseases rather than reducing the disabling effects.
- *Improving population health:* individuals are taking their health seriously and there is a decline in risk factors, particularly smoking and obesity. The health service is responsive with high rates of technology uptake for disease prevention and excellent diffusion rates of treatments to all who can benefit, particularly in terms of control of vascular risk factors.

Source: Jagger *et al* (2006)

approach to modelling the growth of the disabled population that involves an innovative linkage with a research team led by Carol Jagger at the Leicester Nuffield Research Unit (Jagger *et al* 2006).
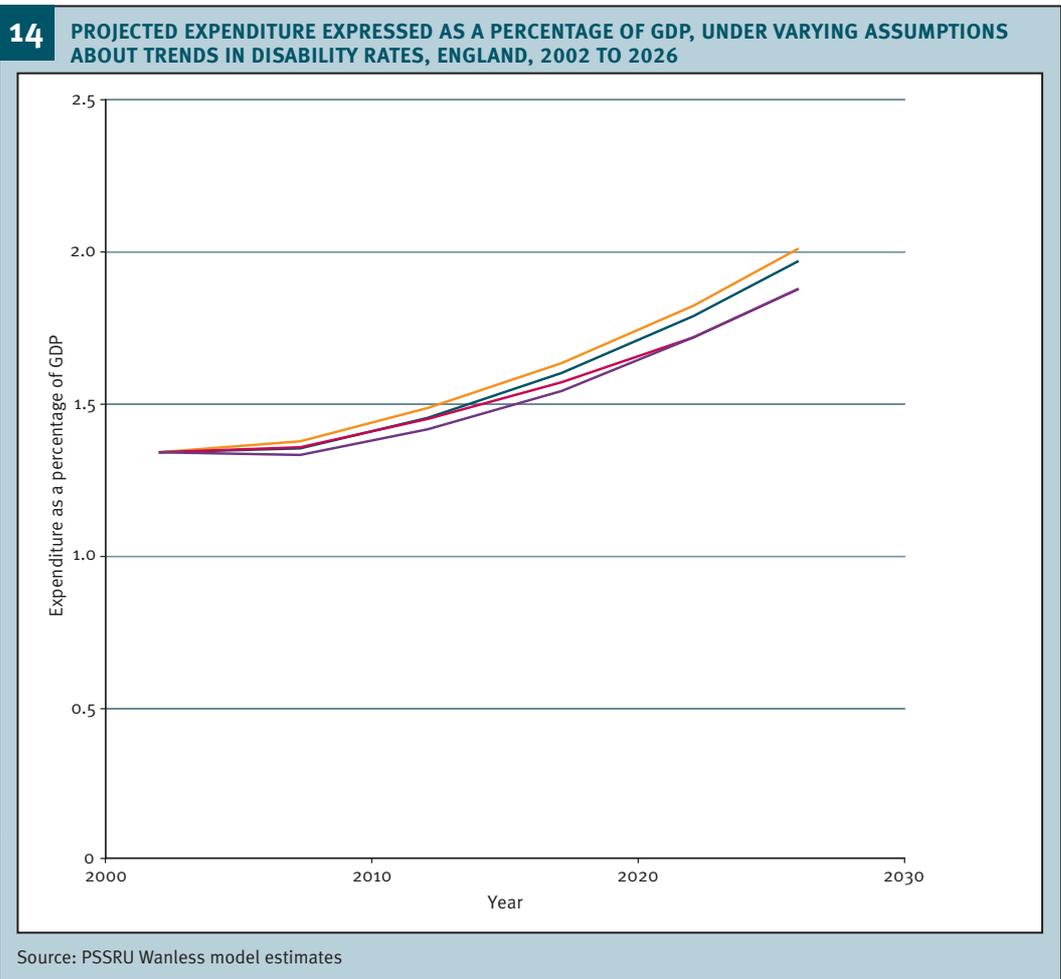
The Leicester team has developed a model that can examine the effects of changing incidence rates of disability on the size of the disabled population, based on assumptions about the prevalence rates of specific diseases, for example, arthritis, stroke, heart disease and dementia. Inclusion of trends in age-specific disability rates, based on changes in the *incidence* rates of disability, represents a significant departure from the scenarios previously considered in the PSSRU model. The link to the Leicester model allows more detailed assumptions to be made about the changing health of the older population. The Leicester team has produced three main scenarios, which are described in detail in Jagger *et al* (2006) and are outlined in the box on page 35.

To introduce the Leicester results into the PSSRU model, several steps need to be taken to adjust the Leicester data into a format that is compatible with the PSSRU model. The Leicester model produces results in terms of prevalence of disability, by five-year age groups, for the base year (1991) and every two years until 2031. There are some differences between the PSSRU model and the Leicester model in the way in which disability is measured (both models use activities of daily living (ADLs) to measure disability, but the measure of ADLs is slightly different between the models; that said, they do produce

13 **PROJECTED NUMBERS OF ADL DISABLED PEOPLE, UNDER VARYING ASSUMPTIONS ABOUT TRENDS IN DISABILITY RATES, ENGLAND, 2002 TO 2026**

KEY
— No change scenario
— Poorer health scenario
— Better health scenario
— Central base case scenario

Source: PSSRU Wanless model estimates

comparable estimates of disability rates when disability is defined as ability to perform at least one ADL without help) and in the prevalence of disability at baseline. These differences mean that the output of the Leicester model cannot be fed directly into the PSSRU model. To overcome these differences, the data incorporated in the PSSRU model comprise the trend in changes in disability rates over time that emerges from the Leicester estimates, rather than the disability rates.

Figure 13 opposite presents the estimated size of the older disabled population, under the various scenarios described in the box on p 35. The disabled population in the figure includes only those who are unable to perform one or more ADLs for consistency, with the definition of disability used in the Leicester model. As Figure 13 demonstrates, the better health scenario provides a very similar picture with respect to the growth of the disabled population, as projected under the base-case assumption of constant age-specific prevalence rates of disability. Both scenarios estimate that the disabled population will increase from around 920,000 in 2002 to around 1,430,000 in 2026, an increase of about 55 per cent. The converse scenario, which assumes that the population will be in poorer health, estimates that the disabled population will increase to 1,600,000 by 2026, an increase of close to 75 per cent. The no-change scenario assumption, that the age-specific incidence and recovery rates from disability will remain unchanged, estimates that the

14 **PROJECTED EXPENDITURE EXPRESSED AS A PERCENTAGE OF GDP, UNDER VARYING ASSUMPTIONS ABOUT TRENDS IN DISABILITY RATES, ENGLAND, 2002 TO 2026**

KEY
— No change scenario
— Poorer health scenario
— Better health scenario
— Central base case scenario

Source: PSSRU Wanless model estimates

TABLE 16: PROJECTED GROSS EXPENDITURE ON SOCIAL SERVICES FOR OLDER PEOPLE, UNDER DIFFERENT POPULATION HEALTH SCENARIOS, ENGLAND, 2002 TO 2026

Scenario	Gross expenditure (£million)						% change 2002–26
	2002	2007	2012	2017	2022	2026	
No change	12,200	14,200	17,200	21,200	26,200	31,100	155
Poorer health	12,200	14,400	17,500	21,500	26,700	31,800	160
Better health	12,200	14,300	17,100	20,700	25,200	29,600	142
Central base	12,200	14,100	16,800	20,400	24,900	29,500	142

Source: PSSRU Wanless model estimates

disabled population will be around 1,550,000 in 2026, an increase of almost 70 per cent. This assumption is significantly more pessimistic than that considered in the base case.

Growth in the disabled population drives growth in demand for services, because there are more people who require assistance. The financial implications of the increase in demand for services under each of the scenarios considered in this section are shown in Table 16 above. The model estimates that, if incidence rates were to remain unchanged, by 2026 expenditure on social services would rise to £31.1 billion, compared with £29.6 billion if the health of the older population improved and £31.8 billion if health were to worsen. This difference equates to a rise in expenditure of about 155, 140 and 160 per cent, respectively. Expressed as a share of the gross domestic product (GDP), if the health of the older population were to improve, expenditure on social services would represent about 1.9 per cent of the GDP, compared with 2.0 per cent of the GDP if older people's health were to worsen (*see* Figure 14, p 37).

Changing assumptions about the unit cost of services

Previous reports by the PSSRU long-term care finance team have highlighted the sensitivity of future long-term care expenditure to relatively small changes in the future unit costs of long-term care (Wittenberg *et al* 1998, 2001, 2002, 2006). The key driver of rises in the unit costs of care is a rise in the earnings of staff providing social care. Community-based care services are clearly highly labour intensive. Care with housing/institutional care is also labour intensive, with staff costs accounting for most of the overall costs. For example, data from a UK study show that, in public sector homes, staff costs accounted for 85 per cent 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). The PSSRU Wanless model takes this assumption for its base case and assumes that the real unit costs of care, such as the cost of an hour's community-based care, will rise by 2 per cent per year, in line with the HM Treasury's assumption for average earnings. An exception is that non-staff revenue costs are assumed to remain constant in real terms. The GDP is also assumed to rise in line with the HM Treasury's assumption, which is also 2 per cent per year in real terms over the long term.

Alternative scenarios have been explored that make adjustments to the increase in unit costs to account for potential improvements in the quality of care and increased use of new technology. The scenarios are presented in the box opposite, and a discussion of the

TABLE 17: PROJECTED GROSS EXPENDITURE ON SOCIAL SERVICES FOR OLDER PEOPLE, UNDER DIFFERENT UNIT COST SENSITIVITY SCENARIOS, ENGLAND, 2002 TO 2026

| Scenario	Gross expenditure (£million)						% change 2002–26
	2002	2007	2012	2017	2022	2026	
10% then 2%	12,200	15,200	18,100	21,900	26,800	31,800	160
20% then 1%	12,200	15,900	18,000	20,900	24,400	27,800	128
20% then 2%	12,200	16,500	19,600	23,800	29,100	34,500	183
Central base	12,200	14,100	16,800	20,400	24,900	29,500	142

Source: PSSRU Wanless model estimates

UNIT COST SENSITIVITY SCENARIOS

■ *Real increase of 10 per cent in year 1 followed by a 2 per cent real increase per annum thereafter:* initial increase to allow for improvements in quality to be made; for the years thereafter it is assumed that unit costs rise in line with the HM Treasury's assumptions about increases in average earnings.

■ *Real increase of 20 per cent in year 1 followed by a 1 per cent real increase per annum thereafter:* initial increase to allow for improvements in quality to be made; for the years thereafter it is assumed that increased use of technology will drive overall costs downwards. The latter is modelled by assuming that unit costs increase by 1 per cent per annum.

■ *Real increase of 20 per cent in year 1 followed by a 2 per cent real increase per annum thereafter*: Initial increase to allow for improvements in quality to be made; for the years thereafter it is assumed that unit costs rise in line with the HM Treasury's assumptions about increases in average earnings.

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rationale for these scenarios is given in more detail in Chapter 10 of the Wanless report. Table 17 above presents the estimated expenditure for each of these scenarios compared with the base case (for scenario 2).

The scenario that assumes an initial 20 per cent increase in costs to deliver quality improvements, followed by a 2 per cent increase per year thereafter, would have the most substantial impact on expenditure. Expenditure would have to rise from £12.2 billion in 2002 to £34.5 billion in 2026, an increase of over 180 per cent. By contrast the scenario that assumes both an increase in the quality of services and an investment in (and increased use of) technology is estimated to require only an increase in expenditure of close to 130 per cent by 2026, compared with roughly 140 per cent for the central base case. In Figure 15 (*see* p 40), estimated expenditure is expressed as a proportion of the GDP. Under the most expensive option considered here (the 20 per cent and then 2 per cent rise in unit costs per year), expenditure is estimated to represent about 2.2 per cent of the GDP by 2026, compared with an estimated 1.9 per cent under base-case assumptions about unit costs. Under the most optimistic scenario (a 20 per cent and then a 1 per cent rise in unit costs per year), on the other hand, expenditure is estimated to represent about 1.8 per cent of the GDP by 2026.

15 PROJECTED EXPENDITURE EXPRESSED AS A PERCENTAGE OF GDP, UNDER DIFFERENT UNIT COST ASSUMPTIONS, ENGLAND, 2002 TO 2026
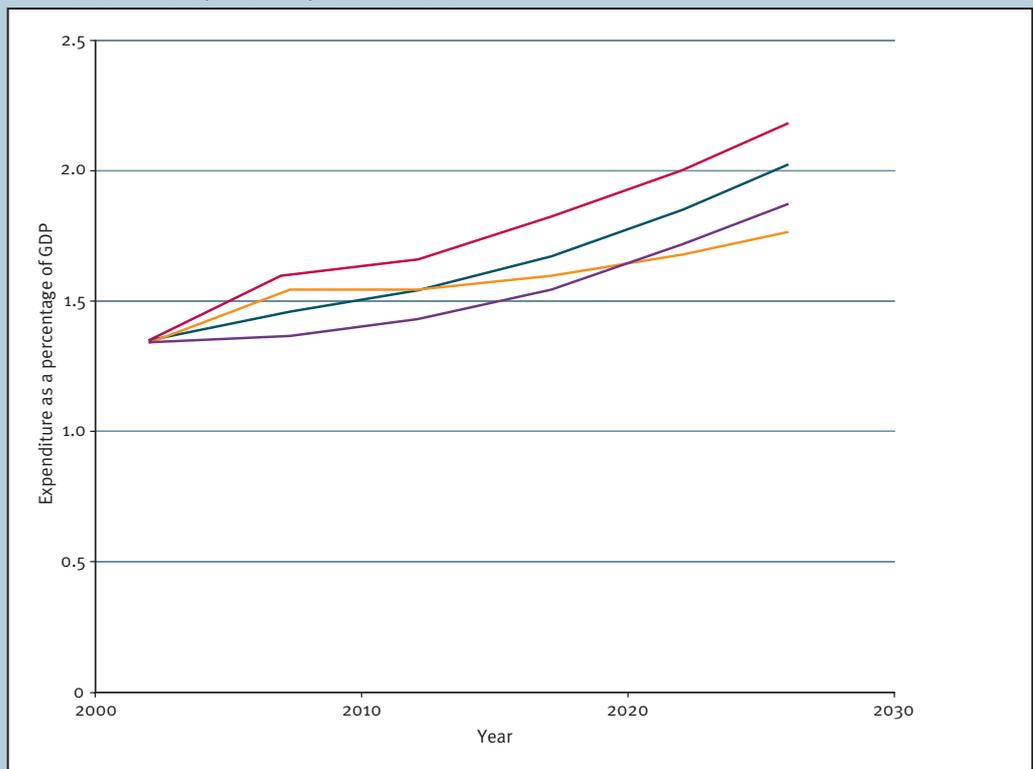
KEY
— 10% then 2%
— 20% then 1%
— 20% then 2%
— Central base case scenario

Source: PSSRU Wanless model estimates

Availability of informal care scenarios

There is a great deal of uncertainty about the future supply of informal care, particularly the supply of care by adult children to their older parents (compare Pickard *et al* 2006). Evidence shows that the proportion of older people living with an adult child has declined from 42 per cent in 1962 to 11 per cent in 2001–2 (Grundy 1995; Grundy and Glaser 1997; authors' analysis of 2001/2 GHS). If this trend continues, it may be compounded in future years by increased levels of childlessness, although this effect will become apparent only once the 'baby boom' cohort reaches old age (Evandrou and Falkingham 2000; Dixon and Margo 2006). In addition, it is anticipated that increasing labour market participation rates of women may reduce the provision of intergenerational care to older people (Salvage 1995; Organisation for Economic Co-operation and Development 2006).

A scenario has been developed to examine the possibility that disabled older people no longer receive informal care from their (adult) children. This is obviously an extreme case scenario because it is unlikely that care by children will cease entirely; however, as the results below indicate, it illustrates the important contribution that children make to the care of their older parents (compare Pickard *et al* 2006).

Another scenario assumes that the supply of informal help remains constant into the future, and explores the consequences of an increase in the volume of informal help provided by current carers. It assumes that 20 per cent more people receiving informal

INFORMAL CARE SENSITIVITY SCENARIOS

■ *No informal care from children:* all those who under the base case receive informal help from children are treated as if they receive no informal help.

■ *Twenty per cent more people receive full informal help packages:* of those receiving informal help, it is assumed that 20 per cent more than under the base case receive all the hours of care that they need from informal sources, such that they no longer require formal services.

help have all their needs met by their informal carers and no longer require formal services. The informal care scenarios are summarised in the box above and are discussed in more detail in Chapter 10 of the Wanless report.

Figure 16 below illustrates graphically the effect of there being no older people in receipt of informal care from their children. The numbers of recipients of informal help would fall from an estimated 1,800,000 in 2002 under base-case assumptions to about 1,000,000. By 2026 the model estimates that the difference would grow, such that there would be more than 1,100,000 fewer people receiving informal help (compare Pickard *et al* 2006; Wittenberg *et al* 2006).
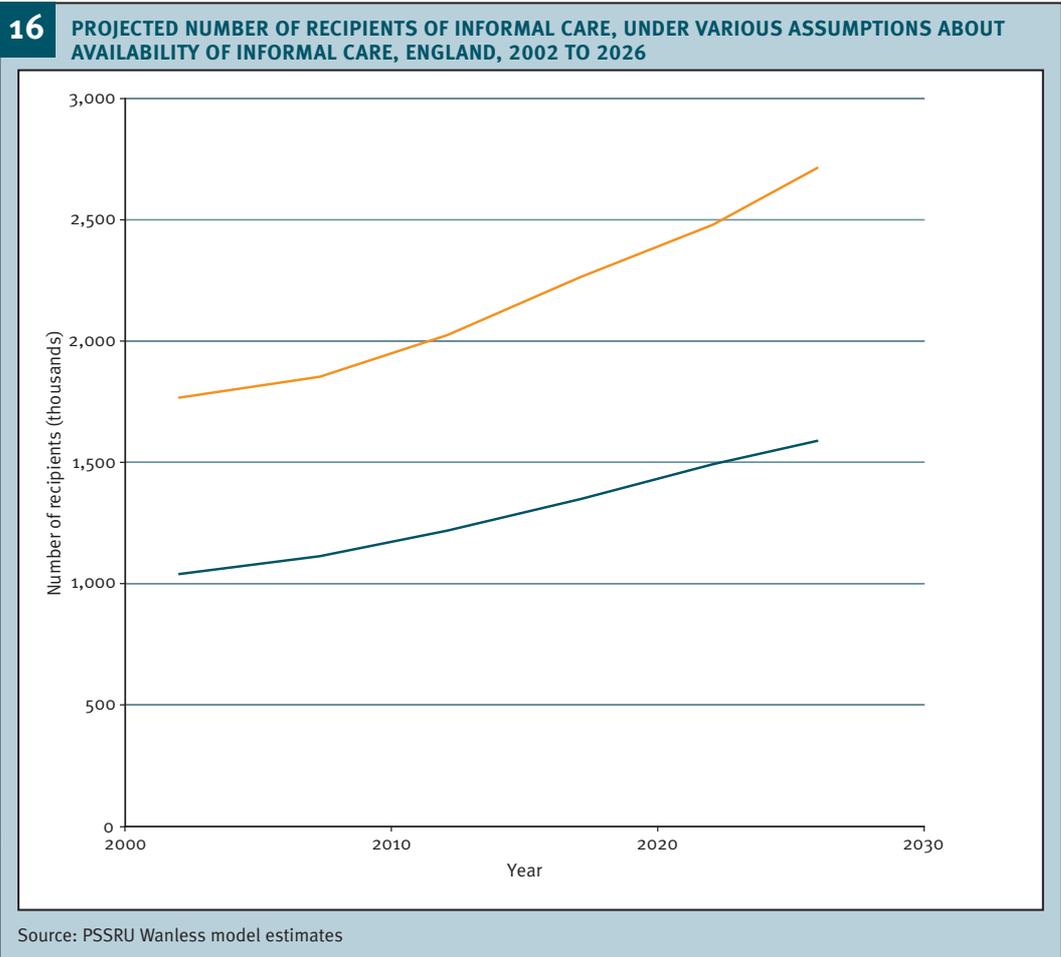
16 **PROJECTED NUMBER OF RECIPIENTS OF INFORMAL CARE, UNDER VARIOUS ASSUMPTIONS ABOUT AVAILABILITY OF INFORMAL CARE, ENGLAND, 2002 TO 2026**

KEY
— No care from children
— 20% more receiving full informal care/ central base case scenario

Source: PSSRU Wanless model estimates

TABLE 18: PROJECTED EXPENDITURE ON SOCIAL SERVICES FOR OLDER PEOPLE, UNDER VARIOUS ASSUMPTIONS ABOUT AVAILABILITY OF INFORMAL CARE, ENGLAND, 2002 TO 2026

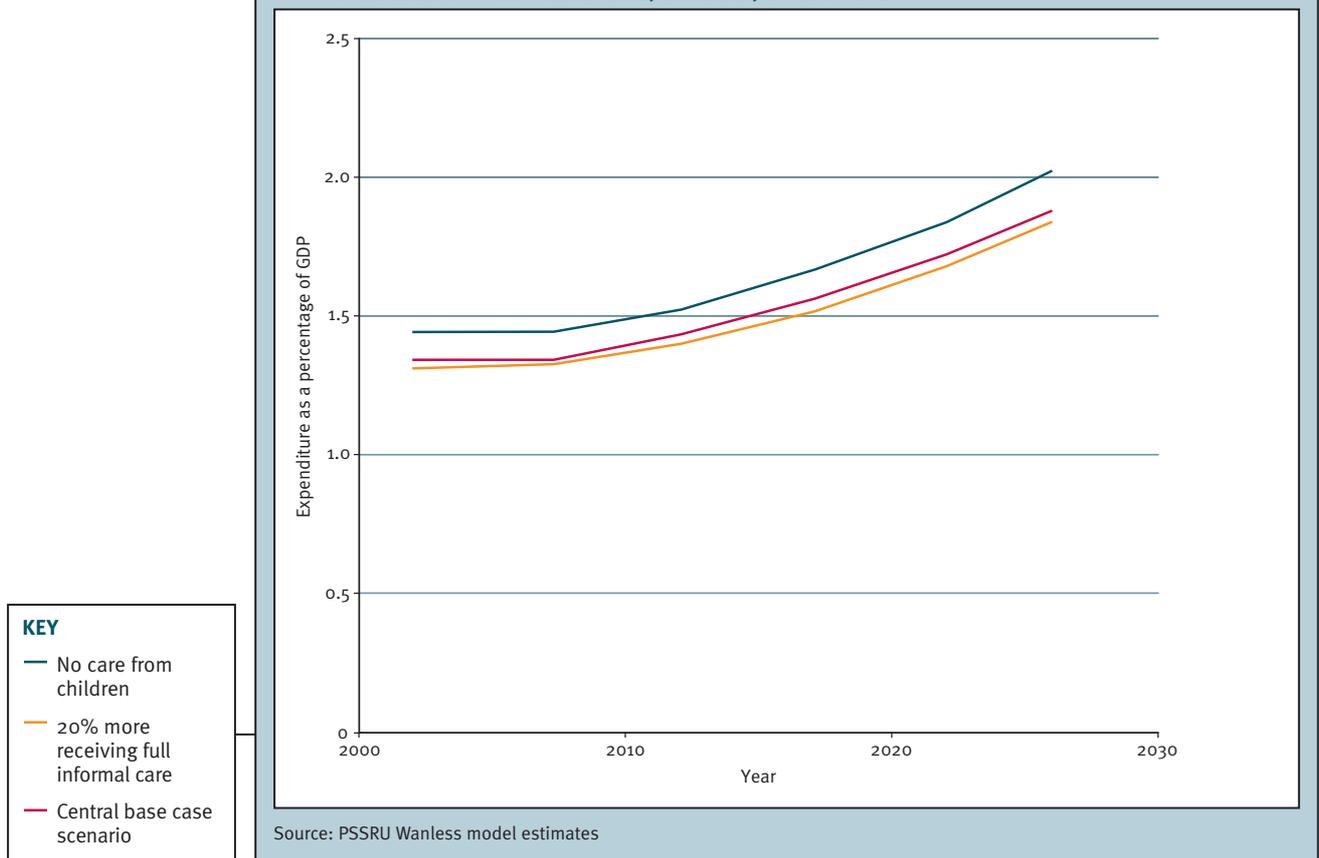| Type of care	Expenditure (£million)						% change 2002–26
	2002	**2007**	**2012**	**2017**	**2022**	**2026**	
No care from children							
Institutional	4,900	5,600	6,600	8,000	9,700	11,400	134
Community-based	7,100	8,200	9,800	12,000	14,700	17,400	147
All care services	11,900	13,800	16,400	19,900	24,400	28,900	143
Total expenditure*	13,100	15,100	18,000	21,800	26,700	31,700	142
20% more receiving full informal care							
Institutional	4,900	5,600	6,600	8,000	9,700	11,400	134
Community-based	6,100	7,000	8,400	10,300	12,600	15,000	148
All care services	10,900	12,700	15,100	18,200	22,300	26,400	142
Total expenditure*	12,000	13,800	16,500	20,000	24,400	28,900	142
Central base							
Institutional	4,900	5,600	6,600	8,000	9,700	11,400	134
Community-based	6,200	7,300	8,700	10,600	13,000	15,500	148
All care services	11,100	12,900	15,300	18,600	22,700	26,900	142
Total expenditure*	12,200	14,100	16,800	20,400	24,900	29,500	142

Source: PSSRU Wanless model estimates
* Includes expenditure on care management and assessment as well as expenditure on care services.

The assumption that 20 per cent more people receive full informal help packages has no effect on the number of recipients of informal help; rather it affects the volume of informal help received and, through this, impacts on the volume of formal services received. The financial implications of such changes in the demand for formal services are shown in Table 18 above.

Changing volumes of informal help are assumed in these scenarios to have an impact on the cost of community-based services. As Table 18 demonstrates, there is a large difference in the cost of these services between the informal care scenarios. The impact of there being no informal care by children is estimated to increase the costs of community-based care from £6.2 billion under base assumptions to £7.1 billion in 2002, rising to £15.5 billion under base-care assumptions and £17.4 billion under assumptions about decreased availability of care by children in 2026. This increase is found even though the scenario involves a decrease in carer-support services, as well as a rise in community-based home care services to replace informal help.

The effect of 20 per cent more people receiving all their care from informal sources is less marked than the 'no informal care by children' scenario, but is estimated to reduce overall expenditure by about £0.6bn by 2026. There is an overall reduction in estimated expenditure despite the increased expenditure that this scenario implies for carer-support services.

Figure 17 opposite shows graphically the estimated increase in expenditure relative to the GDP, under current assumptions about the predicted growth of the economy. Expenditure

17 PROJECTED EXPENDITURE AS A PERCENTAGE OF GDP, UNDER VARIOUS ASSUMPTIONS ABOUT AVAILABILITY OF INFORMAL CARE, ENGLAND, 2002 TO 2026

KEY
— No care from children
— 20% more receiving full informal care
— Central base case scenario

Source: PSSRU Wanless model estimates

is projected to be 2.0 per cent of the GDP in 2026, under the scenario in which there is no informal care by children, as against 1.9 per cent under the base case.

Variations in take-up of services

There are two ways that people can exercise the choice not to take up services; they can either decline to use services outright or decide to have a reduced package of weekly care hours. There are many reasons why people might choose to decline all or part of a service package, and these have already been discussed. For the purpose of the modelling, it has been assumed that all those declining to take up services or reducing the hours of their packages of care do so because they are unwilling to pay for the services – a phenomenon known as the 'demand effect'. The base case of the model, which assumes that the current funding system is in place, includes within it an assumption that a certain proportion of people within each sub-group of the older population declines to take up services. The size of this 'demand effect' has been estimated by the Wanless review team and is shown on pages 6–7. The rationale is discussed in more detail in Chapter 10 of the Wanless report.

Two scenarios are explored here. The first assumes that all those who are estimated to be eligible for services under the base case of the model, the potential population of service users, decide to take up full packages of care. Under this scenario the proportions

declining services shown in Table 3 (see p 9) are set to zero. The introduction of free personal care, for example, could be expected to lead to increased demand for services.

The second scenario assumes that people choose to have packages of care that are less than benchmark levels, as defined by the Wanless review team. This scenario works by varying the intensity of all types of community-based services received, so that the average weekly package of care for each sub-group of the older population is reduced using percentages specified by the Wanless review team. The degree to which people choose to reduce their packages of care depends on both their level of functional impairment and whether they live alone or with others. The reduction in intensity, therefore, varies from

18 **PROJECTED DEMAND FOR ALL COMMUNITY-BASED SERVICES, UNDER VARIOUS ASSUMPTIONS ABOUT TAKE-UP OF SERVICES, ENGLAND, 2002 TO 2026**
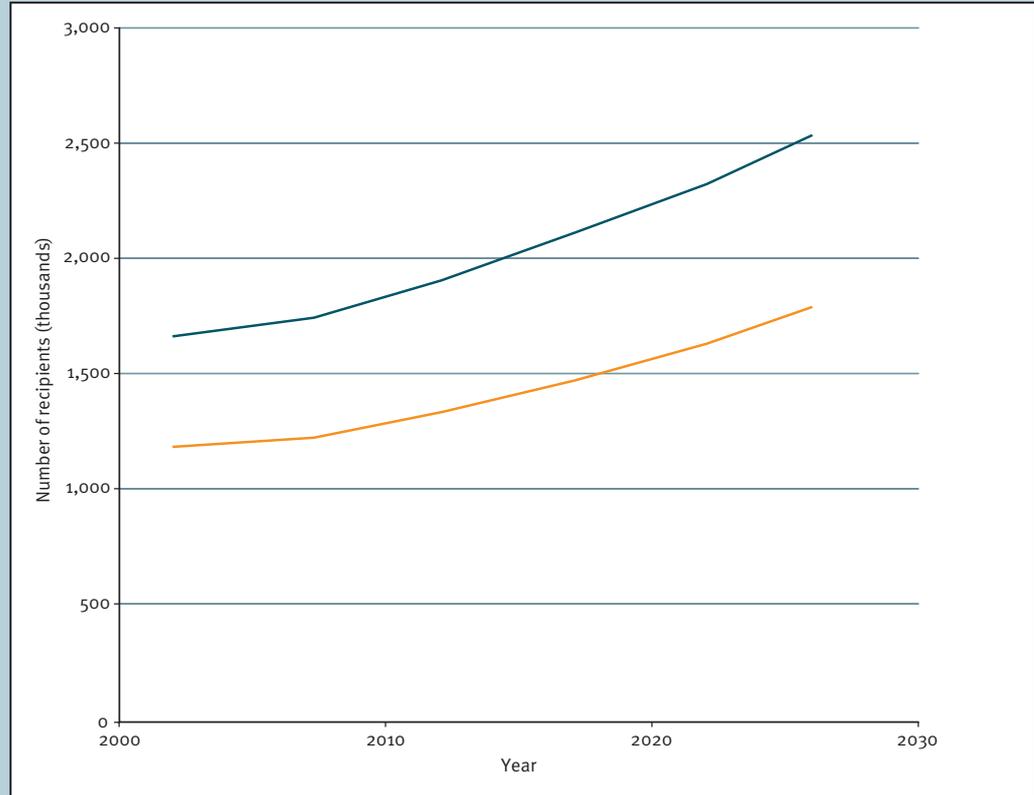
Source: PSSRU Wanless model estimates

KEY
— All those eligible take up services
— Reduced package of care/central base case scenario

TABLE 19: PROJECTED EXPENDITURE ON SOCIAL SERVICES FOR OLDER PEOPLE, UNDER VARIOUS ASSUMPTIONS ABOUT UPTAKE OF SERVICES, ENGLAND, 2002 TO 2026

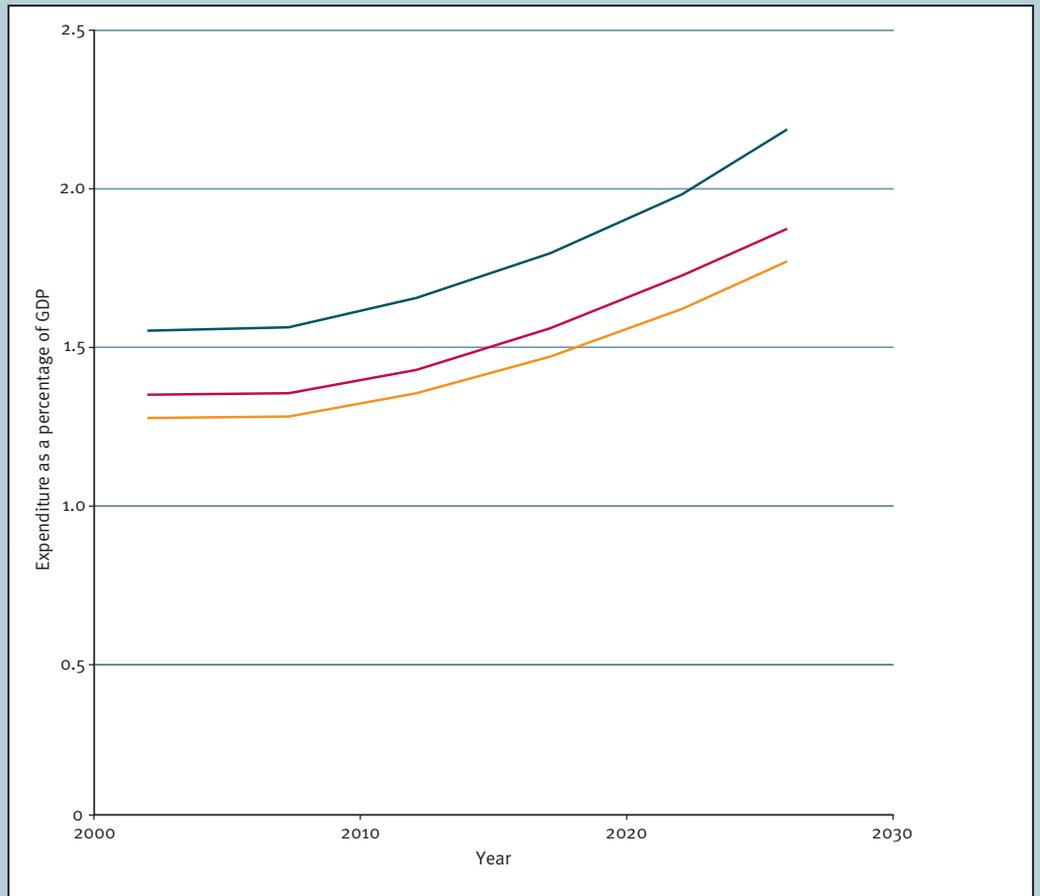| Type of care	Expenditure (£million)						% change 2002–26
	2002	**2007**	**2012**	**2017**	**2022**	**2026**	
All eligible							
Institutional	4,900	5,600	6,600	8,000	9,700	11,400	134
Community-based	8,200	9,500	11,400	13,900	17,000	20,200	146
All care services	13,100	15,100	18,000	21,900	26,700	31,600	141
Total expenditure*	14,100	16,300	19,500	23,600	28,900	34,300	143
Reduced package							
Institutional	4,900	5,600	6,600	8,000	9,700	11,400	134
Community-based	5,600	6,500	7,700	9,400	11,600	13,800	148
All care services	10,500	12,100	14,300	17,400	21,300	25,200	140
Total expenditure*	11,500	13,300	15,900	19,200	23,500	27,800	142
Central base							
Institutional	4,900	5,600	6,600	8,000	9,700	11,400	134
Community-based	6,200	7,300	8,700	10,600	13,000	15,500	148
All care services	11,100	12,900	15,300	18,600	22,700	26,900	142
Total expenditure*	12,200	14,100	16,800	20,400	24,900	29,500	142

Source: PSSRU Wanless model estimates
* Includes expenditure on care management and assessment as well as expenditure on care services.

about 6 per cent for those who live alone and have high levels of functional impairment to 44 per cent for those who do not live alone and have low levels of functional impairment. These differences reflect the underlying need that people have for services. Those with high need on their own have little option but to use formal services and pay charges. Those people living with informal carers and with low need might be much more inclined to put off or reduce the amount of care that they use. These scenarios are summarised in the box on p 44.

The difference in the numbers of older people estimated to be in receipt of all community-based services under the different assumptions about take-up is quite striking, as demonstrated in Figure 18 opposite. As the reduced weekly package scenario has an effect only on the volume of care received, the number of recipients is estimated to be exactly the same as under base case. However, when all the people estimated to be eligible for services decide to take up services, the demand for services increases to reach 1,670,000 in 2002 and 2,560,000 in 2026. This is the equivalent of about an extra 500,000 older people requiring services in 2002 and an extra 750,000 in 2026. The financial implications of the scenario discussed in this section are shown in Table 19 above.

As Table 19 (see p 46) demonstrates, the 'demand effect' has a significant impact on overall expenditure on services. The model estimates that expenditure would be £14.1 billion in 2002 if all those estimated to be eligible for care took up services, rising to £34.3 billion in 2026. Most of this increase is a result of the increase in demand for community-based services, which are estimated to cost about £2 billion more than under base assumptions in 2002 and nearly £5 billion more in 2026. By contrast, if there were a

19 PROJECTED EXPENDITURE AS A PERCENTAGE OF GDP, UNDER VARIOUS ASSUMPTIONS ABOUT TAKE-UP OF SERVICES, ENGLAND, 2002 TO 2026

KEY
— All those eligible take up services
— Reduced package of care
— Central base case scenario

Source: PSSRU Wanless model estimates

reduction in the average size of the weekly package of care people received, then the model estimates that expenditure on services would be lower than under base case. Expenditure, under the reduced package, is estimated to total £11.5 billion in 2002, rising to £27.8 billion in 2026. This compares with an estimated cost under base assumptions of £12.2 billion in 2002 and £29.5 billion in 2026.

Assuming that the economy expands at the rate reported by the HM Treasury, the model estimates that, if all those who were eligible for services took up that service, expenditure would represent about 1.6 per cent of the GDP in 2002 and 2.2 per cent in 2026 (*see* Figure 19 above). This represents about a 0.3 per cent greater spend on social services as a proportion of the GDP in 2002 than under the base-case assumptions. A reduced package of care is estimated, in terms of the GDP, to be approximately equivalent to expenditure under base assumptions in 2002, but, by 2026, expenditure under this scenario is estimated to represent about 1.8 per cent of the GDP – 0.1 per cent less than is estimated under base assumptions.

Discussion

This paper has presented projections to 2026 of future expenditure on social services for older people in England. In the paper, projections based on the standard PSSRU/CARESIM model, which projects existing patterns of care into the future, have been compared with projections based on scenarios developed by the Wanless review team. The Wanless review team scenarios were based on a specified set of base-case assumptions about what services are required to deliver specified outcomes. The outcomes of personal care (including nutrition), safety, well-being and reduction of carer stress were specified by the Wanless review team. Two base scenarios were designed by the Wanless review team that, in their own words, 'capture the degree to which these sets of outcomes are to be achieved in the future'. In the view of the Wanless review team, these scenarios can be considered to represent different service models, each engendering a different pattern of care services.

The projections presented here should not be regarded as forecasts of the future, for several reasons. First, the Wanless review scenarios have been developed using data collected under the current system, that is to say the data have been extrapolated to try to determine what, in the view of the Wanless review team, an 'ideal' service might look like. There are potential problems associated with this approach (for discussion of these, please refer to Chapter 10 of the Wanless report). Second, the projections are highly sensitive to changes in the assumptions about future trends in drivers of demand for care. As the sensitivity analyses show, projected future demand for social services for older people is sensitive to assumptions about future numbers of disabled older people and the future availability of informal care. It is also sensitive to variations in the degree to which people decide to take up services, which is assumed to stem from the willingness of individuals to pay for means-tested services. Projected future expenditure on social services 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 community-based care. Third, the expenditure projections do not constitute the total costs of care for older people to society. 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.

Notwithstanding these limitations, the projections have potential implications for policy. Some potential policy implications of the projections presented here are discussed in the Wanless report.

Summary of projections under variant scenarios

Table 20 summarises the projections for 2026 obtained under the various sensitivity scenarios discussed in the fourth section of this paper. Where results are the same as for the base case (scenario 2 in this instance), they are not shown.

TABLE 20: SUMMARY OF PROJECTIONS FOR 2026 UNDER VARIANTS AROUND THE BASE CASE SCENARIO 2

	Projected number of people with disability (thousands)	Projected number of people with informal help (thousands)	Projected number of people in institutional care (thousands)	Projected number of recipients of all community-based services* (thousands)	Projected total expenditure (£million)	Projected total expenditure (% of GDP)
Base case (scenario 2 only)						
Scenario 2 base year, 2002	920	1,780	250	1,180	12,200	1.3
Scenario 2 projection, 2026	1,430	2,700	390	1,800	29,500	1.9
Disability assumptions						
No change	1,550	2,680	430	1,770	31,100	2.0
Poorer health	1,600	2,670	440	1,760	31,800	2.0
Better health	1,430	2,700	390	1,800	29,600	1.9
Unit costs assumptions						
10% then 2%	–	–	–	–	31,800	2.0
20% then 1%	–	–	–	–	27,800	1.8
20% then 2%	–	–	–	–	34,500	2.2
Informal care assumptions						
No care from children	–	1,610	–	1,820	31,700	2.0
20% more receiving full informal care	–	2,700	–	1,610	28,900	1.8
Demand assumptions						
All eligible	–	–	–	2,560	34,300	2.2
Reduced package	–	–	–	1,800	27,800	1.8

Source: PSSRU Wanless model estimates
* Includes community-based and other community-based services.

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