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Informal Care for Older People Provided by Their Adult Children: Projections of Supply and Demand to 2041 in England

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

Linda Pickard

PSSRU Discussion Paper 2515
March 2008

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ADULT CHILDREN: PROJECTIONS OF SUPPLY AND DEMAND
TO 2041 IN ENGLAND**

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**PERSONAL SOCIAL SERVICES RESEARCH UNIT
LSE HEALTH AND SOCIAL CARE
LONDON SCHOOL OF ECONOMICS & POLITICAL SCIENCE**

Informal care for older people provided by their adult children: Projections of supply and demand to 2041 in England

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Introduction

As the numbers of older people increase in future years, demand for long-term care is also likely to increase substantially. Since the long-term care system in England depends heavily on informal or unpaid care, the increase in demand for long-term care is likely to mean an increase in demand for informal care.

Most informal care for older people in England is provided either by spouses or adult children (Arber & Ginn 1991). Around 85 per cent of disabled older people living in their own homes in England receive informal care and, of these, over 80 per cent receive care from either a spouse, an adult child or both (Pickard *et al* 2007). Of those receiving care from either a spouse or a child, approximately half receive care from a spouse and half from a child (Pickard *et al* 2007).

The latest projections of demand for long-term care by disabled older people, carried out by the Personal Social Services Research Unit (PSSRU), show that demand for care by spouses and adult children is likely to increase rapidly in the coming decades (Wittenberg *et al* 2007). Assuming that the proportion of disabled older people by age, gender and marital status receiving informal care remains constant, the research shows that the numbers of disabled older people receiving care from spouses or partners are projected to more than double between 2005 and 2041, while the numbers receiving care from their adult children are projected to increase by approximately 90 per cent (Wittenberg *et al* 2007). Care by children is particularly important for people aged 85 and over, who constitute the fastest growing age group in this country, yet the majority of the oldest old have no spouse/partner and this is still likely to be the case in 2041.

There are, however, concerns about the future *supply* of informal care for older people from their children. The literature on informal care suggests that care by children may decline in future for a number of reasons, including the effects of decreases in family size (Clarke, 1995), rising childlessness among future cohorts of older people (Evandrou and Falkingham, 2000), the decline of co-residence of older people with their children (Grundy, 1995, 1996, 1999, 2000) and the continuing expansion of women's employment (Allen and Perkins, 1995). There are not the same concerns about the future of other forms of informal care for older people. In particular, care by spouses is likely to increase in future, primarily because projected improvements in male mortality are likely to lead to a fall in the number of widows (ONS 2005). It is, therefore, very important to distinguish between different forms of informal care for older people when modelling its future supply.

Up to now, however, no study in this country has made projections of the supply of informal care for older people that distinguish between different recipients of care (Richards *et al* 1996, Carers UK 2001, Karlsson *et al* 2006). In the most recent

estimates, Karlsson and colleagues (2006) make projections of long-term care for older people in the United Kingdom to 2040, modelling demand for formal and informal care and the supply of informal care. The study found that “our projection for the *older population* indicates that there will be a shortage of informal care for some decades, unless the patterns of provision change” (Karlsson *et al* 2006: 202, emphasis added). Given the likely increase in spouse care in the coming decades, it is likely that any shortfall in the provision of informal care to older people will primarily affect care provided by adult children. However, the extent of the shortfall in the supply of intergenerational care for older people, how soon it is likely to occur and whether patterns of care provision are likely to change, are not issues that have been explored in previous research.

The aims of the current paper are, first, to model the future supply of informal care specifically by the children of older people and, second, to place this modelling within the context of projections of demand for informal care by disabled older people from their children. The paper builds on previous research on future demand for informal care carried out by the Personal Social Services Research Unit (PSSRU) as part of the study of future projections of demand for long-term care services for older people (aged 65 and over) in England and of the costs associated with meeting the expected demand (Wittenberg *et al* 2001, 2006, 2007).

The current paper looks at the *supply* of informal care specifically by the adult children of older people. The paper makes projections of the numbers of people providing intense care, to older parents¹ to 2041. The projections are based on an on-going study of recent past trends in the provision of intense intergenerational care to older people in Great Britain, using the 1985, 1990, 1995 and 2000 General Household Survey (GHS) data on provision of informal care (Pickard 2002).

The paper examines trends in the probability of providing intense care for older parents over the fifteen years between 1985 and 2000, and asks what would happen to the numbers of people providing care to older parents if these trends were to continue in the coming decades. Because the present study is based on an analysis of past trends in provision of informal care, it allows for some key assumptions underlying the projections of informal care in future years to be examined empirically.

Data and methodology

The analysis of the supply of informal care by adult children to their older parents in this paper is based on secondary analysis of the GHS, a multipurpose continuous survey based each year on a large sample of the general population resident in private (non-institutional) households in Great Britain.² Questions on the provision of informal care were included in 1985, 1990, 1995 and 2000. People aged 16 and over throughout the country were asked questions on informal care, with sample sizes of 18,330 in 1985; 17, 535 in 1990; 16, 745 in 1995 and 14, 124 in 2000.

Respondents in all four GHS data sets were asked similar questions. They were asked whether they looked after someone who is sick, handicapped or elderly. In the survey, ‘looking after’ someone is defined as giving special help, or providing some regular service or help, to them. There has been concern that small changes in question

wording in successive years may have affected the comparability of the GHS data on informal care over time (Parker 1998). However, analysis of the 1985, 1990 and 1995 GHS datasets for ONS by Parker concluded that consistent trends in more intense forms of caring can be identified in all three surveys (Parker 1998).

It is with intense forms of caring that this paper is primarily concerned. The paper is concerned in particular with intense informal care provided for 20 hours a week or more to an older person. The focus is on provision of care for 20 hours a week or more partly because care at this level of intensity is more likely to be provided to *disabled* older people than care provided at lower levels of intensity (cf Kemper 1992). The focus is on intergenerational care, that is, care by children and children-in-law, provided to parents aged 65 and over in England.

The analysis is in three parts. The first part examines the provision of intense informal care to older parents in the period between 1985 and 2000 in England. The analysis of past trends in provision of informal care is utilised to inform the assumptions underlying the projections of the *supply* of informal care in future years. In the second part, trends in the probability of providing care are applied to the projected numbers of people by key characteristics in future years, in ways that are described later in the paper. Finally, in the third part, the projected numbers of people providing care to older parents are compared to the numbers of disabled older people projected to ‘demand’ care from their adult children in future years. This part of the analysis draws on earlier research by the PSSRU on receipt of informal care from different sources by disabled older people (described fully in Pickard *et al* 2007, Wittenberg *et al* 2006, 2007). The PSSRU model is a model of *demand* for long-term care and its informal care projections are essentially projections of the numbers of disabled older people who would receive informal care if current patterns of care remained the same.

Results

Trends in provision of intense intergenerational care, 1985-2000

The analysis of trends in provision of intergenerational care for older people between 1985 and 2000 begins by looking at the key factors likely to affect provision of informal care. These include age, gender, marital status and socio-economic factors (cf Parker and Lawton 1994, Richards *et al* 1996, Young *et al* 2005, Karlsson *et al* 2006). One socio-economic factor is examined here, education. The factors included in the analysis of trends in provision of care might also have included other factors, such as employment status, housing tenure, health and ethnicity (cf Leontaridi and Bell 2001, Young *et al* 2005). However, analytical and data limitations restrict the extent to which these variables can be included in an explanatory model. For example, employment and health may be endogenously related to provision of care (Parker and Lawton 1994, Richards *et al* 1996) and therefore are not usually included in explanatory models of care provision, and similar problems are likely to arise in relation to housing tenure. The number of people in relevant age groups of the ethnic minority population is too small to allow for consideration of ethnicity as a factor in provision of care using the GHS, particularly where trends over time are under consideration (cf Evandrou 2000).

Table 1 shows the probability of providing care for 20 hours a week or more to older parents in England between 1985 and 2000 by key characteristics. The table combines

the data for 1985, 1990, 1995 and 2000 to look at probabilities of providing care by key characteristics. Nearly all (98 percent) of those providing care were aged between 30 and 74 (Table 1). For this reason, it was decided to confine the analysis of provision of care to those within this broad age range. The probability of providing care by people aged between 30 and 74 was highest for those aged between 45 and 64 (Table 1) It was higher for women than for men, and for single than for married people. It was higher for those with no qualifications than for those with some qualifications.

Table 1
Probability of providing care to older parents for 20 hours a week or more by age, gender, marital status and education, England, 1985-2000

Characteristics	Categories	Percent of population	Sample numbers ⁺
Age group	16-29	0.09	11
	30-44	0.91	144
	45-64	2.24	383
	65-74	0.78	53
	75+	0.02	1
Gender [#]	Men	0.99	185
	Women	1.87	395
Marital status ^{# x}	Single	2.06	185 [±]
	Married	1.28	395 [±]
Education [#]	No qualifications	1.81	263 [±]
	Some qualifications	1.40	306 [±]

Source: GHS 1985, 1990, 1995, 2000 (author's analysis)

⁺ Un-weighted sample data [#]People aged 30 to 74; ^xMarital status is de-facto marital status except in 1985 since only legal marital status is available in the 1985 GHS; 'single' people include single (never married), widowed, divorced, separated; 'married' people include those legally married and those cohabiting; [±]The probability of providing care is higher for single than married people, even though the sample numbers are lower, because there are fewer single than married people in the underlying sample base. The same point applies to those with no qualifications compared to those with qualifications.

Logistic regression analysis of the factors affecting provision of intense care to older parents by those aged 30 to 74 was then carried out for each year. Four logistic regression models were built, one for each year under analysis, that is, for 1985, 1990, 1995 and 2000 (Table 2). Controlling for age, gender and marital status, educational qualifications were not found to be significantly associated with provision of intense care for older parents in any year and this variable has been omitted from the reported results. The lack of association between provision of intergenerational care and socio-economic variables, controlling for other relevant factors, is consistent with other research carried out in this country during the 1985 to 2000 period (Glaser and Grundy 2002). Age and gender were significantly associated with provision of intense intergenerational care in each year and marital status was significantly associated with provision of this form of care in each year except 1995 (Table 2). The probability of providing intense intergenerational care was significantly lower for those aged 30 to 44 and those aged 65 to 74 than for those aged 45 to 64 in nearly all years. The probability of providing intense intergenerational care was significantly higher for women than for men in all years, and the difference between men and women in their provision of care to parents increased over time. Married people were significantly less likely to provide intergenerational care than single people in all years except 1995, with the likelihood of married people providing care being only around half that of single people.

Table 2
Results from logistic regression of probability of providing informal care to older parents for 20 hours a week or more by people aged 30 to 74, England, 1985-2000

Year	Age			Gender		Marital status ⁺	
	30-44	45-64	65-74	Men	Women	Single	Married
1985	0.71	1	**0.35	1	*1.54	1	**0.57
1990	***0.32	1	***0.25	1	**1.66	1	***0.45
1995	***0.25	1	***0.25	1	***2.74	ns	ns
2000	***0.42	1	**0.46	1	***1.85	1	*0.63

*Source: GHS 1985, 1990, 1995, 2000 (author's analysis) *p=0.05; **p= 0.01; ***<p=0.001*

⁺ *Marital status is de-facto marital status except in 1985 since only legal marital status is available in the 1985 GHS; 'single' people include single (never married), widowed, divorced, separated; 'married' people include those legally married and those cohabiting*

Trends over time in the provision of care for 20 hours a week or more by those aged 30 to 74, controlling for key factors, were then analysed (Table 3). Four time periods were examined, 1985/90, 1990/95, 1995/2000 and 1985/2000, with the intention of identifying significant changes in the provision of intense intergenerational care. The results show that, in the period between 1985 and 2000, the probability of providing care to older parents ranged from 1.4% to 1.6%. Including the upper and lower Confidence Intervals, the probability of providing intense intergeneration care ranged from 1.2% to 1.9%. There were no significant changes in the probability of providing intense intergenerational care to older parents during any of the time-periods examined between 1985 and 2000.

Table 3
Probability of providing informal care to older parents for 20 or more hours a week by people aged 30 to 74, England, 1985-2000

Year	Probability of providing informal care to older parents for 20+ hrs pw		
	Point estimate	Upper Confidence Interval*	Lower Confidence Interval*
1985	1.37%	1.61%	1.16%
1990	1.62%	1.89%	1.39%
1995	1.41%	1.65%	1.20%
2000	1.44%	1.71%	1.21%
	Difference in probability of providing care between years		
1985 - 1990		p = 0.132	
1990 - 1995		p = 0.209	
1995 - 2000		p = 0.848	
1985 - 2000		p = 0.666	
	Underlying sample base ⁺		
1985		10,542	
1990		10,122	
1995		10,382	
2000		8,755	

*Source: GHS 1985, 1990, 1995, 2000 (author's analysis) * 95% Confidence Intervals; ⁺Un-weighted sample data*

The implications of the analysis of recent past trends in provision of intergenerational care for older people for the modelling of the future supply of informal care are three-fold. First, the absence of any significant changes in the probability of providing intense care during the past fifteen years suggests that it may be plausible to assume constant probabilities of providing care in future years, at least as an initial assumption. The assumption of constant probabilities of providing care has been made in previous studies (Richards *et al* 1996, Karlsson *et al* 2006) but has not before been subjected to empirical investigation. Second, the analysis suggests that key factors affecting provision of intense intergenerational care for older people include age, gender and marital status, and that therefore these factors should be included in modelling provision of this form of care in future years. Previous studies have not included all these factors, Karlsson *et al* (2006), for example, including only age and gender in their projections. Finally, the trends presented here have suggested no evidence of any convergence in the provision of intense intergenerational care by women and men over the past fifteen years. Rather the evidence suggests that the likelihood of women providing care compared to men has increased over time (Table 2). Scenarios examining the effects of having male care-giving patterns converge to those of females (and vice versa) have been examined elsewhere (Karlsson *et al* 2006: 207). The research presented here, however, suggests that there is little empirical evidence supporting such a convergence in relation to the probability of people providing intense care to their older parents.

Projections of supply of intense care by children/-in-law for older parents to 2041

On the basis of the analysis in the previous section, projections of the numbers of people providing care to older parents in future years were made, based on the probabilities of providing care in 2000 in England by age, gender and *de facto* marital status. These probabilities were based on analysis of the 2000/01 GHS using weighted sample data.³ The possibility of combining all the years in the analysis was considered, but this was rejected due to some variation in the relationships between the variables in the different years, as indicated in the previous section. The probabilities in 2000 in general, however, reflect the relationships described in the previous section, being highest for those aged 45 to 64 compared to younger and older age-groups; being generally higher for women than for men; and being generally higher for single than married/cohabiting people. There were exceptions to these general relationships, notably among single men who, in mid-life and older age groups, had higher rates of provision of care than single women, in a relationship that has been well described in the literature (Arber & Ginn 1991).

Table 4
Probability of providing care to older parents for 20 hours a week or more by people aged 30 to 74: by age, gender and *de facto* marital status, England, 2000

Gender	Marital status	Age-group	Probability of providing care (%)	Weighted sample base (000s) = 100%	Un-weighted sample base
Men	Single	30-44	1.26	1,534	368
		45-64	4.07	1,212	356
		65-74	0.78	394	139
	Married/cohabiting	30-44	0.14	3,836	1,215
		45-64	0.87	4,172	1,542
		65-74	0.89	1,411	527
Women	Single	30-44	1.82	1,406	497
		45-64	2.30	1,401	480
		65-74	0.30	893	291
	Married/cohabiting	30-44	1.06	4,067	1,369
		45-64	2.68	4,266	1,552
		65-74	1.64	1,156	419
All		30-74	1.43	25,748	8,755

Source: GHS 2000 (author's analysis); see also notes to Table 2

Box 1 summarises the key assumptions made in the projections of the supply of informal care for 20 hours a week or more to older parents.

Box 1

KEY ASSUMPTIONS OF PROJECTIONS OF SUPPLY OF INFORMAL CARE TO OLDER PARENTS

- The number of people by age and gender changes in line with the Government Actuary's Department 2006-based population projections (GAD 2007).
- The proportion of the population in private households, based on the 2001 Census (SARs), remains constant by age and gender.
- Marital status changes in line with GAD 2003-based marital status and cohabitation projections (ONS 2005): as these projections run to 2031, the 2031 marital status rates are applied to 2041.
- The probability of providing informal care for 20 or more hours a week to an older parent by *age, gender and marital status* in England remains unchanged, as reported in the 2000/1 GHS.⁴

Table 5 shows the projected number of people providing care to older parents for 20 hours a week or more between 2005 and 2041. The table shows that, at present (2005), there are nearly 400 thousand people providing care for 20 hours a week or more to older parents (Table 5). Of these, approximately 65 percent are women, with around a quarter of a million women providing intense intergenerational care, compared to around 135 thousand men. Nearly 90 per cent of those providing intense care to parents are under the age of 65, with around 350 thousand men and women aged between 30 and 64 providing this form of care. Although the probability of providing care is higher for single than married people, the number of married people providing care exceeds those who are single by nearly two to one because of the underlying preponderance of married and cohabiting people in the age-groups most likely to provide care.

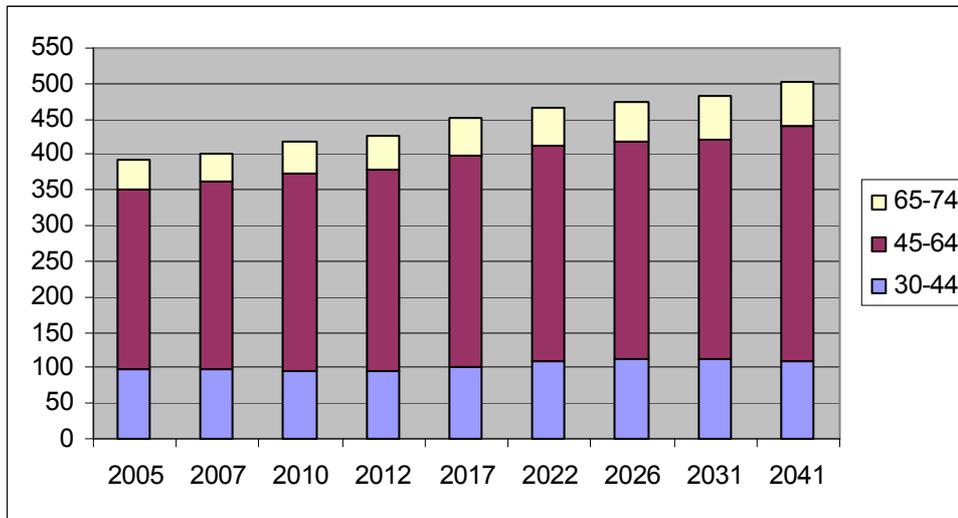
Table 5
Projected numbers (in thousands) of people providing care to older parents for 20 hours a week or more by people aged 30 to 74: by age, gender and *de facto* marital status, England, 2000-2041

	2005	2007	2010	2012	2017	2022	2026	2031	2041	% change 2005 – 2041 ⁺
All	395	400	420	430	450	465	475	480	500	27.5%
Age-band										
30-44	100	95	95	95	100	110	110	110	110	12.0%
45-64	255	265	280	285	300	305	310	310	330	30.0%
65-74	40	40	45	50	50	50	55	60	60	49.0%
women										
30-44	70	70	70	70	70	75	80	80	80	6.8%
45-64	160	165	175	175	180	180	180	180	190	19.2%
65-74	25	25	25	30	30	30	30	35	35	47.4%
30-74	255	260	270	275	280	285	290	295	305	18.4%
men										
30-44	25	25	25	25	30	30	35	35	35	26.0%
45-64	95	95	105	110	120	125	125	125	135	48.4%
65-74	20	20	20	20	20	25	25	25	25	51.3%
30-74	140	140	150	155	170	180	185	185	195	44.4%
marital status										
married/cohabiting	250	250	260	260	265	266	265	265	275	10.2%
single	145	150	160	170	185	200	210	215	225	58.0%

Sources: see Box 1; ⁺ Percentage change based on un-rounded figures.

Assuming constant probabilities of providing care by age, gender and marital status, the numbers of people providing care to older parents are projected to increase by 27.5 per cent between 2005 and 2041 (Table 5). Numbers are projected to rise from nearly 400 thousand in 2005 to around 500 thousand in 2041. Numbers are projected to rise gradually until around 2022 and then to plateau between 2022 and 2031, before increasing again to 2041 (Figure 6). Indeed most of the increase in numbers of people providing informal care to older parents occurs before 2017, that is, within the next decade.

Figure 6
Projected numbers (in thousands) of people providing care to older parents for 20 hours a week or more by people aged 30 to 74: by age-band, England, 2005-2041



Sources: see Box 1

The projected increase in the numbers of people providing care between 2005 and 2041 varies by age, gender and marital status (Table 5). The projected increase in numbers providing care is greater for those aged 65 and over than those under the age of 65; greater for men than women; and greater for single than married people. These projected changes in numbers of people providing care primarily reflect changes in the socio-demographic characteristics of the underlying population. For example, the increase in numbers of people providing intense intergenerational care who are single is projected to be much greater than the projected increase in numbers who are married or cohabiting, with the proportion of people providing care who are single projected to increase from around a third to nearly half of all those providing care between 2005 and 2041. The underlying reason for this is that the GAD marital status projections show a decline in the proportion of people in either married or cohabiting couples in future years in the relevant age groups, and this trend is accentuated in relation to care provision by the tendency for people who are single to be more likely to provide intense care to parents than those who are married/cohabiting.

In other respects, the characteristics of people providing care in 2041 are projected to be similar to those doing so at present. Although the numbers of people providing care aged between 65 and 74 are projected to increase faster than any other age-group (Table 5) nearly 90 percent of all those providing intense care will still be under the age of 65 in 2041 and therefore they will still be almost wholly of ‘working age’. Similarly, although the numbers of men are projected to increase faster than the numbers of women, women are still projected to form the majority of people providing intense intergenerational care in 2041, with women still constituting 60 percent of those providing care in 2041.

In summary, assuming constant probabilities by age, gender and marital status, the projections show a moderate increase in the numbers of people providing care for 20 hours a week or more to parents over the next thirty-five years or so. This increase is enhanced by taking marital status into account, because of the differential probabilities

of providing care by single and married/cohabiting people. The overwhelming majority of those providing intense care to parents in 2041 are likely to be of ‘working age’. There is some convergence in numbers of men and women providing care, with men forming a slightly higher proportion of those providing care in 2041 than in 2005, but the effect is not great.

The supply of care by adult children and demand for care

The projected numbers of people providing informal care to older parents can be compared to the numbers of disabled older people projected to ‘demand’ informal care from their adult children in future years.

Information on demand for informal care is drawn from the latest version of the PSSRU long-term care projections model, which takes 2005 as its base year and makes projections to 2041 for England (Wittenberg *et al* 2007). Projections of demand for informal care in the PSSRU model are made on the basis of a set of clearly specified assumptions (Wittenberg *et al* 2007). Because demand for informal care in the model relates to older people with disabilities, the assumptions on trends in disability are important, and it should be noted that the base case of the model assumes that prevalence rates of disability remain constant in future years. The model also assumes that the proportions of disabled older people receiving informal care remain constant in future years, by age, gender and marital status.

Table 7 shows figures, derived from the PSSRU model, of the numbers of disabled older people in the household population who would receive care from their children if current patterns of care remained constant. The PSSRU projections of demand for care from the children of older people show that there are currently approximately 660 thousand disabled older people receiving informal care from their children. This is projected to increase by around 90 per cent between 2005 and 2041, so that by 2041 nearly 1.3 million disabled older people are projected to be receiving informal care from their children, under the assumptions of the PSSRU model.

The projected demand for care from their children from disabled older people is compared in Table 7 with the projected supply of intense care by children to their older parents, derived from the analysis in the previous section. The table shows that, currently, there are more older people with functional disabilities receiving care from their children than there are children providing care for 20 hours a week or more to older parents. A key explanation for this is that, while it is likely that care provided for long hours to parents is provided to those with a disability, not all disabled older people receiving care from their children do so for long hours. In other words, not all care received by disabled older people from their children in the PSSRU model is intense care. Disability is defined in the PSSRU model in terms of an inability to perform instrumental activities of daily living (IADLs) without help or difficulty performing, or an inability to perform, activities of daily living (ADLs) without help. Older people unable to perform IADLs include, for example, those unable to do their shopping, a task that is unlikely to take 20 hours a week to perform. Table 7 shows that the current ratio of disabled older people receiving care from their children (‘care-receivers’) to children providing intense care to older parents (‘care-providers’) is approximately one to 0.6.

Table 7

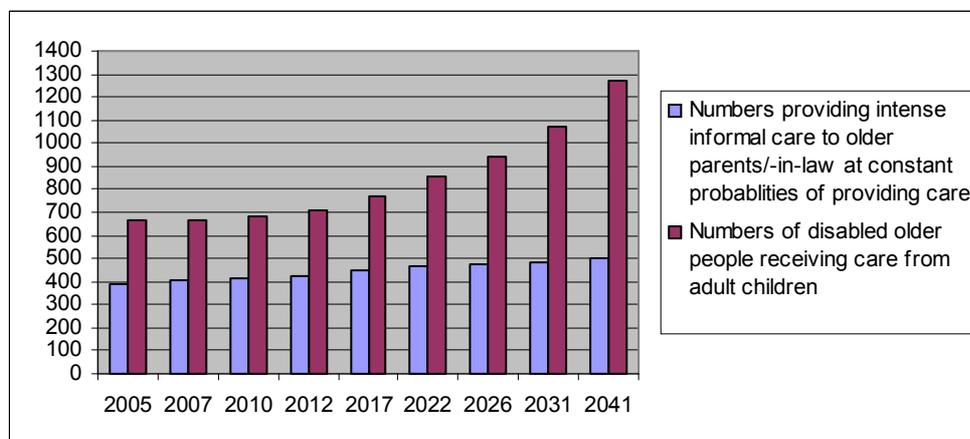
Supply of informal care provided by adult children to their older parents for 20 hours a week or more ('care-providers') compared to demand for care by disabled older people from their children ('care-receivers'), England, 2005 to 2041

	2005	2007	2010	2012	2017	2022	2026	2031	2041	% change 2005-2041 [#]
(a) Assuming constant probability of providing care										
Numbers ⁺ providing intense care to older parents	395	400	420	430	450	465	475	480	500	27.5%
Numbers ⁺ of disabled older people receiving care from children	665	670	685	705	770	855	945	1,075	1,270	90.8%
Ratio of 'care-receivers' to 'care-providers'	0.59	0.60	0.61	0.60	0.59	0.54	0.50	0.45	0.39	-33.2%
Numbers ⁺ aged 30 to 64 providing intense care to older parents	350	360	375	380	400	415	420	420	440	25.0%
(b) Assuming constant ratio of care-receivers to care-providers										
Numbers ⁺ providing intense care to older parents	395	395	405	415	455	505	560	635	750	90.8%
Difference in numbers ⁺ of care providers from (a) numbers at constant probability of providing care	-	-5	-15	-15	5	40	85	155	250	-
Probability of providing care to older parents (%)	1.4%	1.4%	1.4%	1.5%	1.5%	1.6%	1.8%	2.0%	2.3%	59.7%
Numbers ⁺ aged 30 to 64 providing intense care to older parents	350	355	360	370	400	450	495	555	660	87.1%

Sources: see Box 1 and Wittenberg et al 2007; ⁺Numbers in thousands; [#]Percentage change based on un-rounded figures

Table 7 suggests that the supply of intense care by adult children to their older parents is unlikely to keep pace with demand in future years. Assuming no change in the probability of providing care in future years, the numbers of people providing intense care to older parents are projected to increase by around 27.5 per cent between 2005 and 2041, whereas the numbers of disabled older people in receipt of care from their children under the assumptions of the PSSRU model are projected to increase by around 90 per cent over the same time period. Under the assumptions utilised here for both supply and demand, the ratio of care receivers to care providers is projected to fall by around a third over the next thirty-five years or so. These trends are illustrated graphically in Figure 8, which shows that the numbers providing intense informal care to older parents remain relatively stable over the next thirty-five years or so, while the numbers of disabled older people projected to receive care from their children increase rapidly.

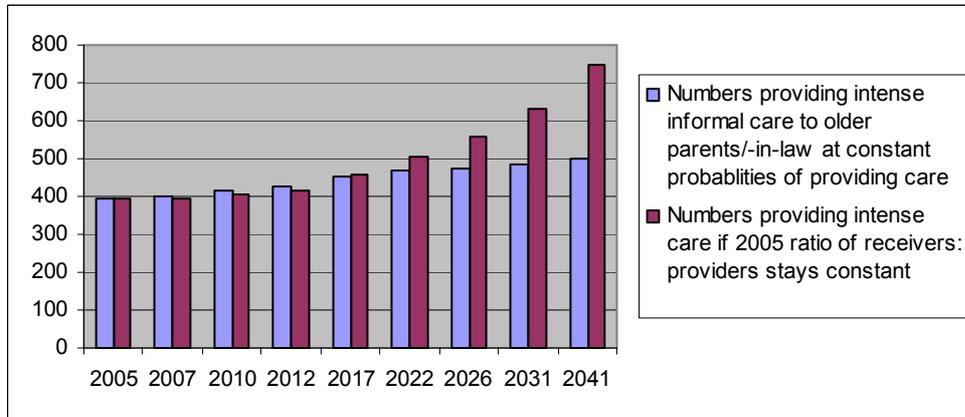
Figure 8
Projected numbers⁺ of people aged 30 to 74 providing care for 20 hours a week or more to older parents and projected numbers⁺ of disabled older people in receipt of care from adult children, England, 2005 to 2041



Sources: see Box 1 and Wittenberg et al 2007; ⁺ Numbers in thousands

Demand for informal care by disabled older people from their children begins to exceed supply in 2017, with the ‘care gap’ widening over the ensuing years. Figure 9 compares the numbers of people projected to provide intense care to older parents over the next thirty-five years or so assuming no change in the probability of providing care and the numbers of people projected to provide intense care if supply were to rise with demand. The latter figures are calculated assuming that the 2005 ratio of care-receivers (disabled older people assumed to receive care from their children in future) to care-providers (people providing intense care to older parents) remains constant in future years. If the supply of care were to keep pace with demand in this sense, then, from 2017 onwards, the numbers of people providing care would need to be greater than the numbers projected to provide care under constant probabilities. The gap between the numbers of people projected to provide care assuming constant probabilities of care provision and the numbers needed to provide care if demand is to be met (in the sense defined above) amounts to around 5 thousand care-providers in 2017, rising rapidly to around 40 thousand in 2022, 85 thousand in 2026, 150 thousand in 2031 and 250 thousand in 2041 (Table 7, Figure 9).

Figure 9
The ‘care gap’: projected numbers⁺ providing intense care (for 20+ hours a week) to older parents assuming constant probabilities of providing care, compared to projected numbers⁺ providing intense care to older parents if supply matches demand by disabled older people, England, 2005 to 2041



Sources: see Box 1 and Wittenberg et al 2007; ⁺ Numbers in thousands

If demand for care by disabled older people from their children is to continue to be met by intense informal care by children at the same rate as it is at present, then the probability of providing intense care to parents will need to increase. Table 7 suggests that, if supply keeps pace with demand, the probability of providing intense care to older parents will increase by around 60 per cent over the next thirty-five years or so, from around 1.4 per cent of those aged 30 to 74 in 2005 to around 2.3 per cent in 2041. In other words, if patterns of care for disabled older people remain constant in future years, then the probability of providing intense care to older parents will need to rise. Indeed, the probability of providing this form of care will need to be considerably higher than it was during any of the years for which data were available between 1985 and 2000, when the maximum probability of providing care was 1.6 per cent in 1990, with an upper confidence interval of 1.9 per cent (Table 3).

Moreover, given that around 90 per cent of those providing intense care to parents are under the age of 65, then if supply is to keep pace with demand then it will have important implications for the numbers of people of ‘working age’ providing care. Table 7 suggests that the numbers of people between the ages of 30 and 64 who provide intense care to parents under constant probabilities of care provision are likely to rise to around 440 thousand by 2041 but, if the supply of care were to keep pace with demand, then this figure would rise to over 650 thousand in 2041. The numbers of people under the age of 65 who provide intense care to older parents would need to increase by nearly 90% between 2005 and 2041, if supply were to keep pace with demand, compared to an increase of 25 per cent if the probability of providing care were to remain constant (Table 7).

Summary and conclusions

The key conclusion of this paper is that, on the assumptions used here, the supply of intense informal care to disabled older people by their adult children in England is unlikely to keep pace with demand in future years. Demand for informal care by disabled older people is projected to exceed supply by 2017, with the 'care gap' widening over the ensuing years. By 2041, the gap between the numbers of people projected to provide informal care and the numbers needed to provide care if projected demand is to be met amounts to nearly 250 thousand care-providers.

A key reason why the supply of informal care to older people by their adult children is unlikely to keep pace with demand is due to underlying demographic trends. Around 90 per cent of people who provide care to their older parents are themselves under retirement age and it is well known that 'old age dependency ratios' are due to rise sharply in the next thirty years (Pensions Commission 2004). If the probability of providing care to older parents remains unchanged, it is very likely that demand for care by older people will exceed the supply of care by the succeeding generation.

If intense informal care for older parents were to meet demand in the coming decades, then the probability of providing this form of care would need to rise. Indeed, the probability of providing this form of care would need to be considerably higher by 2041 than it was during any of the years for which data were available between 1985 and 2000.

Moreover, given that around 90 per cent of those providing intense care to parents are under the age of 65, then if supply were to keep pace with demand, then it would have important implications for the numbers of people of 'working age' providing care. The numbers of people under the age of 65 who provide intense care to older parents would need to nearly double between 2005 and 2041, if supply were to keep pace with demand.

The finding that there will be a projected 'care gap' in the coming decades is consistent with previous research on the supply of informal care to older people (cf Karlsson *et al* 2006). As noted earlier, Karlsson and colleagues concluded that, with regard to care for older people, there would be a shortage of informal care in future years, assuming that patterns of provision remain unchanged.

The present paper has followed previous studies in assuming that the probability of providing informal care will remain unchanged in future years. This assumption seems plausible in relation to intense care provided for older parents, given the evidence presented here that the probability of providing this form of care has not changed significantly in the recent past.⁵ This absence of significant change in the probability of providing care coincided with a rapid increase in the numbers of older people, especially the 'oldest old'. Nevertheless, it should be noted that trends in provision of care during the 1980s and 1990s occurred within a specific policy environment that affected the provision of formal services and hence may also have affected the provision of informal care. It is not, therefore, necessarily the case that past trends in care provision will be a guide to future trends and it is possible that the probability of providing care might rise in future years.

More generally, it should be noted that the projections of the future supply of informal care reported in this paper are based on a specified set of assumptions. This set of assumptions seems plausible but is clearly not the only possible set. Projections are likely to be sensitive to changes in the assumptions about the key drivers of the supply of informal care in future years. This means that the projections should not be regarded as forecasts of the future (cf Wittenberg *et al* 2007).

Footnotes

- 1 Throughout this paper, ‘parents’ include both parents and parents-in-law; ‘older’ parents or ‘older’ people refer to those aged 65 and over. In addition, throughout this paper, intense informal care refers to care provided for 20 or more hours a week.
- 2 The advantages of using the GHS data for the analysis of care provided to people of specific ages are described in Pickard 2007.
- 3 The weighted sample data use weights that are supplied with the 2000/01 GHS data to compensate for differential non-response (Maher & Green 2002).
- 4 The projections use the proportions of older people, by age and gender, in the two marital status categories, rather than the absolute numbers projected by GAD. A simplifying assumption is made that, because the proportion of the population aged 30 to 74 who are not in the household population is only one per cent or less in any age group (by gender), the projected marital status/cohabitation rates for the whole population equal the marital status/cohabitation rates for the household population.
- 5 The trends in informal care identified in this paper appear somewhat different from the findings of some other studies, which have identified an increase in provision of intense informal care in the recent past (Parker 1998, Hirst 2001, Evandrou & Glaser 2002). However, these studies have not been specifically concerned with provision of intense informal care to *older parents*. It is likely that their findings differ from that of the present study either because they do not distinguish between different recipients of care or because they are not concerned specifically with care for older people.

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