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DETERMINANTS OF INSTITUTIONAL LONG-TERM CARE IN GERMANY

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Abstract

In Germany the majority of people in need of care are living at home with the help of their family and/or professional carers. Admission into a nursing is seen as the last step. Caregiving in nursing homes is required if caregiving at home is not possible due to the absence of an informal carer or cannot be provided to the required degree, in particular if the recipient suffers from mental illnesses or if around-the-clock-care and advice is required. Residents in nursing homes are therefore on average older than people living at home, the share of females is higher and the level of dependency is also higher. Underlying diseases have a significant influence on nursing home admissions, in particular dementia, Parkinson`s disease, stroke and malignant tumours.

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Erika Schulz*

1. Introduction

In Germany, as in many other European countries, most of the elderly people remain living in their homes. In 2010 more than 97% of the people aged 60 and older are still living in private homes and among the oldest (aged 80+) some 90%. But the share of institutionalised among the oldest old increases with age. Among the people aged 90 and older, one in four lives in a nursing home.

Most of the elderly face increasing impairments in the activities of daily living (ADL) or in instrumental activities of daily living (IADL) if they are growing older. Often the increase is an insidious process, sometimes the result of stroke or heart failure or an accident. In the majority of cases, persons living in the same household or living nearby take over the care activities for personal care and/or help with household chores. Family members are the main informal caregiver: spouses/partners range first, followed by daughters or daughters-in-law, other relatives, friends and neighbours. An increasing number of informal carers use the additional help from professional home care services, in particular if they are also elderly.

As people in need of care prefer to live in a familiar environment and in their own homes for as long as possible, moving into a nursing home is the last step. A transfer into a nursing home is necessary if the beneficiary needs care around the clock, if there is no family carer, the care giving to the required degree is not possible or professional care and supervising are required due to changing (aggressive) behaviour of the mentally ill. The availability of an informal carer is the key for staying at home. People receiving care at home are in general to a higher percentage married compared to people living in a nursing home. Another determinant is certainly the level and kind of care needed.

With the introduction of the Long-Term Care Insurance (LTCI) in 1995, a wide range of benefits for long-term care at home and (since 1996) in institutions is available. Since 1999, statistics on the beneficiaries by sex, age-groups, care level and kind of living arrangements (at home or in institutions) have been published every two years. The statistics provide information about the characteristics of nearly all institutionalised people in need for care. Schneekloth & Thörne (2007) estimated that only some 45,000 institutionalised people do not get benefits from the LTCI funds. Thus, in section 2 the information from the long-term care statistics is used to provide an overview of the characteristics of people living in nursing homes compared to beneficiaries of home care.

Detailed data on the determinants of need for care and the influencing factors of institutionalisation can be extracted from the data of insured persons from one statutory health care insurance fund (and two funds, since 2010). These so-called routine data will be used for the analysis carried out in section 3.

Section 4 provides some additional information from other surveys and section 5 summarises the results and provides a conclusion.

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2. Beneficiaries of LTC insurance living in nursing homes

2.1 Eligibility criteria and assessment process

The long-term care statistics are based on data for people receiving benefits from the statutory or private LTCI funds. Applicants have to fulfil the eligibility criteria to receive benefits from the LTCI funds.

Benefits are available for all insured persons depending on the extent of the need for care, but irrespective of age, income or wealth. In legal terms, the "need of long-term care" refers to those people who, owing to a physical, psychological or mental disease or handicap, require a significant or major amount of help to carry out the recurring activities of everyday life over a prolonged period of time, most likely for a minimum period of six months. The entitlement to claim benefits is based on whether the individual needs help with carrying out at least two basic activities of daily living (ADL) and one additional instrumental activity of daily living (IADL). Three levels of dependency are distinguished, depending on how often assistance is needed and how long it takes a non-professional caregiver to help the dependent person.

- Care level I: People who need assistance with personal hygiene, feeding or mobility for at least two activities from one or more areas at least once a day and need additional help in the household several times during the week for at least 90 minutes a day with 45 minutes accounted for basic care.
- Care level II: People who need assistance in at least two basic ADL at least three times a day at various times and additional help in IADL several times a week for at least three hours a day with two hours accounted for basic care.
- Care level III: People who need assistance in at least two ADL around the clock and additional help in IADL several times during the week for at least five hours per day with four hours accounted for basic care.
- Hardship cases: People in care level III in particular individual cases who need assistance in ADL for at least seven hours a day with at least two hours during the night or who need basic care that can only be provided by several people together (at the same time).

Thus, the long-term care statistics provide no information about all people in need for care, only for those people who have at least substantial impairments and receive benefits. In 2002 the number of people in need for care not receiving benefits from the LTCI funds living in private households was estimated to amount to about 3 million (Schneekloth &Wahl, 2005), and in institutions, about 45,000 in 2005 (Schneekloth & von Törne, 2007). As we mainly want to focus on institutionalised people, the long-term care statistics may be valid.

The Medical Review Boards of the Statutory Health Insurance Funds perform the assessment to determine whether an individual is entitled to benefits. For private LTCI, Mediproof, a private company, carries out this task. Fifteen Medical Boards nationwide conduct in-home assessments for the Statutory LTCI funds (at home or in nursing homes). Individuals are assessed for limitations in activities of daily living, such as bathing and dressing, and instrumental activities of daily living, such as shopping and cooking, as well as hours of care needed per day. These assessments have focused largely on physical needs for personal care, nutrition and mobility rather than on needs for supervision or cueing, which persons with dementia or learning disabilities often need.[1] The new LTCI reform changed this situation in 2008. People whose competence in coping with everyday life is considerably

[1] The assessment process focuses currently on the level of limitations in personal care: Washing, taking a shower, bathing, dental care, combing, shaving, defecation, urination; in nutrition: bite-sized preparation of nutrition, ingestion; in mobility: moving in and out the bed, dressing, moving, standing, climbing up the stairs, leaving and returning to the home, as well as on the level of limitations in IADL: shopping, cooking, cleaning the home, washing the dishes, washing and cleaning and ironing the clothes, heating (MDS, 2006).

impaired will be assessed on the basis of a special criteria catalogue. If applicants fulfil the criteria, they can receive additional benefits, and people who do not fulfil the criteria for care level I are also entitled to receive benefits (MDS, 2008). The Medical Review Boards decide also, if the actual and potential informal caregiving situation as well as the level and kind of dependency require caregiving in a nursing home.

The Medical Review Boards of the Health Insurance Funds are required to publish statistics on the number of assessments carried out and the results of the assessments. As benefits from the long-term care insurance are available for care at home since April 1995 and for care in institutions since July 2006, the figures for the first years show the introduction effect with high numbers of applicants for LTC benefits (Table 1). Since 1999 the number of first assessments ranges between 650,000 and 700,000 per year, of which 106,000 to 130,000 received first assessments of benefits for institutional care. Thus, the need for long-term care often begins at home and in the last 10 years the share of first assessments for institutional care in total assessments remains stable – between 16% and 18%.

Table 1. First assessments of need for care carried out by the medical services, 1995 to 2010

	First assessments total	**First assessments inpatient total in persons**	**Not in need of care**	**Nursing care level I**	**Nursing care level II**	**Nursing care level III**
Year	**In- and outpatient**		**in %**			
1995*	1,678,792					
1996**	1,390,126	600,742				
1997	905,439	177,258				
1998	750,645	128,129				
1999	690,134	109,427				
2000	679,588	116,536				
2001	670,889	112,848				
2002	666,071	105,784				
2003	671,365	114,501				
2004	651,485	121,995				
2005	674,101	114,794	15.3	45.3	32.2	7.2
2006	686,033	125,311	15.0	46.5	31.5	7.1
2007	696,704	122,066	15.1	47.4	31.4	6.1
2009	823,931	134,956	16.1	48.1	29.6	6.2
2010	792,964	134,956	16.1	49.1	28.6	6.2

* First year of benefits for home care. ** First year of benefits for institutional care.

Sources: Assessment statistics in terms of the reasons for assessment (nursing care insurance), Medical Review Board of the leading associations of the health insurance funds e.V.

Most of the (first-time) applicants for institutional care who fulfil the assessment criteria are classified as people with substantial impairments (some 46%), and only a small percentage who applies for benefits the first time are classified as very severely impaired (7%). The entrance in “need for institutional care” takes place at early stages of impairments. The report on the development of the long-term care insurance stated that the classification of first assessments of institutional care did not change. In 2010 some 115,000 assessments were carried out for institutional care and the share of care level I was also 46%. The statistics of applicants provides no information on the characteristics of the applicants. Thus, no information on the rejected applicants is available. The following section is based on the beneficiaries only.

2.2 Characteristics of beneficiaries in nursing homes

In 2009 some 2.34 million people in Germany received benefits from the long-term care insurance funds. Around 718,000 people received benefit for institutional care, of which some 700,000 require full-time institutional care and 18,000 short-time institutional care. An additional 31,000 people received day care, but in most cases they receive this kind of partly inpatient care in addition to cash benefits or benefits for home care services. They are not included in the number of institutionalised people in 2009, but due to the changes in statistical classification system they could be included in the number of institutionalised people in the years before (1999 to 2007). The number of people receiving night care was, at 24, negligible (Table 2). Thus, in 2009 nearly all beneficiaries of institutional care were living in nursing homes (98%).

Between 1999 and 2009, the importance of institutional care has grown. The increase in the number of elderly living in nursing homes was with around 26% higher than the increase in the number of elderly receiving caregiving at home, with 12% (care allowance and outpatient care).

Table 2. Long-term care recipients by kind of care, 1999 to 2009

	1999	2001	2003	2005	2007	2009
Recipients of benefits-total	2,016,091	2,039,780	2,076,935	2,128,550	2,246,829	2,338,252
Outpatient care	415,289	434,679	450,126	471,543	504,232	555,198
Inpatient care	573,211	604,365	640,289	676,582	709,311	717,490
Permanent care for full-time inpatients	554,217	582,258	612,183	644,165	671,080	699,672
Short-term care	8,545	9,643	10,999	13,351	15,002	17,819
Day care	10,276	12,409	17,078	19,048	23,196	X
Night care	173	55	29	18	33	X
Care allowance	1,027,591	1,000,736	986,520	980,425	1,033,286	1,065,564
Informative: partly-inpatient care*	X	X	X	X	X	31,399
Day care	X	X	X	X	X	31,374
Night care	X	X	X	X	X	24

* In 2009 the beneficiaries of partly inpatient care are no longer included in the total number of beneficiaries due to the risk of double counting. They also receive benefits for home care, and thus are counted only as outpatient care or care allowance recipients.

Source: Federal Statistical Office, statistics on long-term care.

The main influencing factor of need for care and in particular for institutional care is age. The majority of the beneficiaries receiving institutional care are 65 years old and older (93%). 69% are 80 years old and older (Table 3). In view of the higher life expectancy of women the share of female beneficiaries in institutions amounts to 80% among the elderly and 85% among the oldest old (80+). The transfer into nursing homes takes place mostly in the higher ages, and is often seen as “the last alternative”. Thus, the characteristics of beneficiaries differ between the kinds of living arrangements. People in need of care living in nursing homes are in general older. The share of the oldest old (80+) living in nursing homes was some 70% significant higher than the share among the beneficiaries of informal care (42%) in 2009. Three out of four people in nursing homes are female compared to 61% in informal care arrangements.

Table 3. Long-term care recipients by kind of care arrangements, 2009

	Permanent full-time institutional care	Short-term institutional care	Home care services	Informal care only
Total	699,672	17,819	555,198	1,065,564
Share women	75.16%	69.65%	68.20%	60.96%
Share elderly (65+)	92.94%	94.28%	90.41%	72.74%
Share oldest old (80+)	69.36%	67.17%	61.54%	41.65%
Share care level**				
I	36.34%	55.44%	54.53%	63.88%
II	41.48%	32.08%	33.86%	28.45%
III*	20.78%	7.92%	11.61%	7.67%

* Including hardship cases.

** The sum could be lower than 100%, caused by cases not yet grouped into one of the care levels.

Source: Federal Statistical Office, Statistics on long-term care.

Another factor accounting for need for care and in particular for institutionalisation is the state of dependency and the amount of care needed. If people are growing older and the severity of their impairments increases, then the caregiving burden for informal carers will rise. As a first step informal carers receive help from professional home care services, but at the end of such a process, a transfer into a nursing home is often necessary. As mentioned above, the long-term care system differentiates between three care levels: substantial impairments (care level I), severe impairments (care level II) and very severe impairments (care level III). Persons in care level III with extremely severe impairments are classified as hardship cases. Some 21% of people living in nursing homes have very severe impairments in activities of daily living, which means they need care around the clock. The share of hardship cases amounts to 0.5% of the total number of cases (included in the figure for care level III). Only one-third of the beneficiaries in nursing home have substantial impairments (care level I). In contrast, people in need of care receiving informal care are less dependent. The share of very severely impaired persons is some 8% and the share of people with substantial impairments 64%.

Between 1999 and 2009, the number of beneficiaries in nursing homes (permanent full-time care) increased by some 145,000 (Table 4). The growth was higher for people with substantial impairments (85,000 persons respectively 50%) than for people with severe impairments (50,000 persons respectively 21%), and with very severe impairments (20,000 persons respectively 16%). Only the increase in hardship cases was significantly higher (3,000 persons, 100% increase).

Table 4. LTC recipients in full-time institutional care (permanent) by care level, 1999 to 2009

Year	Total	Care level I	Care level II	Care level III*	Hard-ship cases in level III	Not yet classified
	Number of recipients – all ages					
1999	554,217	169,732	240,635	125,657	2,881	18,193
2001	582,258	187,591	259,604	125,583	2,965	9,480
2003	612,183	203,783	271,088	130,553	3,332	6,759
2005	644,165	216,315	280,387	137,844	4,095	9,619
2007	671,080	235,554	284,764	141,390	4,886	9,372
2009	699,672	254,286	290,200	145,423	5,731	9,763

* Including hardship cases.

Source: Federal Statistical Office, Statistics on long-term care.

The average age of moving into a nursing home has increased. One indicator is the share of the oldest old (80+) among beneficiaries in nursing homes, which increased at all care levels (Table 5). The increase was highest in care level I, but the share is still highest at care level II (71% in 2009).

Table 5. Share of recipients in full-time institutional care as a % of total beneficiaries by care level, 1999 to 2009

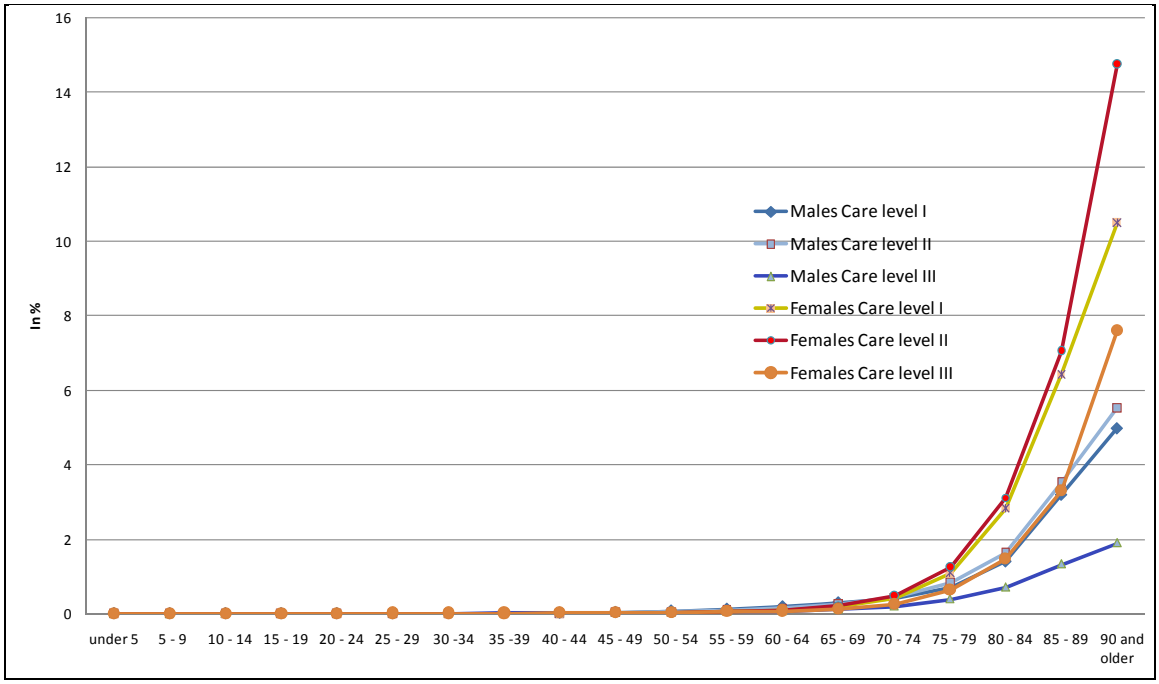
Age groups	Total	Care level I	Care level II	Care level III
	Share of people in nursing homes in total beneficiaries, 2009			
Total	29.92	20.38	36.87	49.62
0-20	0.46	0.19	0.50	1.08
20-65	16.10	11.32	16.17	27.53
65-75	23.98	16.33	28.90	44.98
75-80	26.06	16.51	33.68	51.38
80+	37.83	25.94	46.63	62.78
	Changes 2009-1999 in % points			
Total	2.43	2.06	6.21	5.57
0-20	0.01	0.09	0.12	-0.09
20-65	0.79	-1.22	3.80	2.81
65-75	3.33	1.82	7.54	8.53
75-80	0.02	0.39	3.16	3.47
80+	1.67	2.36	5.52	4.57
	Share of the oldest old (80+) in institutional care in %			
1999	66.19	63.13	69.95	65.09
2009	69.36	69.20	71.29	66.94

Source: Federal Statistical Office, Statistics on long-term care.

In the last ten years, a general trend towards institutionalisation can be observed in all care levels and in almost all age groups. The increase in the share of institutionalised beneficiaries was the highest at care level II, but also the share of people receiving around-the-clock care in institutions in total care recipients of care level III raised, in particular among the middle and older ages. Between 1999 and 2009, the share increased by some 6% (care level II as well as care level III), and among the beneficiaries aged 65 to 75, by some 8% for care level II and 9% for care level III. The tendency is that people in nursing homes are, to an increasing extent, mentally ill, with very severe impairments in ADL and in very old age.

One indicator showing the importance of care needs in the total population is the prevalence rate. Figure 1 shows the share of beneficiaries of long-term care in the total population by age group, sex and care level. The prevalence rate is nearly zero up to the age of 50 years and increases sharply in the oldest age-groups from age 75 years onwards. The increase in prevalence rates is higher for females than for males and higher for care level I than for care levels II and III. The difference in life expectancy of males and females leads to the significant higher prevalence rates of females in all care levels from the age 80 onwards. Some 16% of female residents in nursing homes aged 90 and older had substantial impairments, some 11% severe impairments and some 8% very severe impairments. The residents aged 90 and older showed lower prevalence rates: 6% substantial impairments, 5% severe impairments and 2% very severe impairments.

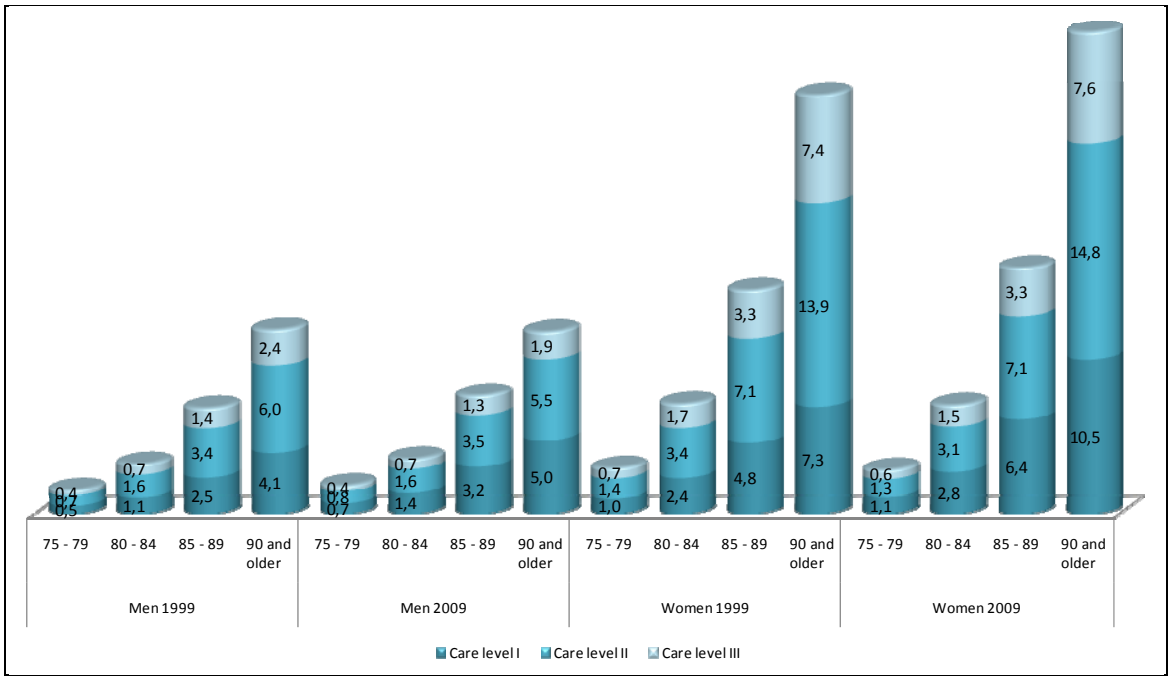
Figure 1. Prevalence rates of permanent full-time institutional care by sex and care level, 2009



Source: Federal Statistical Office, Statistics on long-term care.

The trend in institutionalisation can also be seen in the changes of prevalence rates. In general the proportion of beneficiaries living in nursing homes in the total population increased, in particular among the oldest age group between 1999 and 2009 (Figure 2). But the growth was only significant in care level I and was higher for females than for males. The increase in prevalence rates amounts to 44% for females aged 90 and older and of 34% of females aged 85 to 89 years, compared to 20% and 30% respectively among male residents at care level I. Thus, the difference in prevalence between men and women widened.

Figure 2. Prevalence rates of full-time institutional care in old age, 1999 and 2009



Source: Federal Statistical Office, Statistics on long-term care.

Persons in need for care not receiving LTC benefits

Infratest carried out surveys in homes for the elderly in 1994 and 2005 (Schneekloth & von Törne, 2007). In 2005 nearly all homes for the elderly (97%) were nursing homes with a contract with LTCI funds, according to the SCBXI. Thus, a high percentage of people living in such institutions were beneficiaries of the LTCI funds (86%). Some 6% were people in need for care and help, but not fulfilling the eligibility criteria of the LTCI (45,000 people with care level 0). But the survey does not provide further characteristics of people in nursing homes in care level 0.

3. Incidence and indicators of institutional long-term care

The long-term care statistics provide information about the care level, the age and sex of all recipients of long-term care benefits, but no information about the determinants of care need or the influencing factors of institutionalisation. To get an idea of the indicators of institutional care, however, we used the reports on long-term care of Rothgang et al. (2009). The authors carried out several reports based on data of one insurance fund, the GEK. In 2010, the GEK aligned with the BARMER insurance fund to form a common insurance fund named BARMER GEK. In this section we rely on these data published in four care reports for the years 2008 and 2009 using data of GEK as well as 2010 and 2011 using data of the common insurance BARMER-GEK, with detailed analyses based on the data of GEK.

3.1 Database

At the end of 2010, BARMER GEK had some 8.7 million insured persons, and is one of the largest social insurance funds for health and long-term care in Germany. Their care report 2011 provides basic statistics for these persons for the years 2009 and 2010. Detailed longitudinal analyses for the years 2000 (or 1998) to 2010 are carried out using the GEK data, including 3.1 million persons. The so-called ‘routine data’ provide information for longitudinal analyses of care recipients and the changes in care arrangements. A disadvantage of using the routine data is that they are often described as “insufficiently valid”. But the routine data of GEK and BARMER are also used for the reimbursement of providers and are checked by external experts; thus they have a high quality and may be valid.

BARMER GEK routine data

The routine data are separated in several parts:

- basic claim data, indicating sex, year of birth, family status and periods of insurance,
- data set of institutional treatments, including stays in hospitals or rehabilitation institutions using the ICD codes,
- care data set, containing information about the benefits of the long-term care insurance (care level, kind of benefits, duration of benefits – first day to last day),
- data set of ambulatory treatments, providing diagnoses by ICD codes and
- employment status of patients for the years 2008 and 2009.

For the 2009 care report, the data covered the period 1.1.2000 to 31.12.2008 and the 2010 care report covered the period 1.1.2001 to 31.12.2009, both are 9-year periods. The care report 2011 provides some information from 1998 or 2000 to 2010. The basic variables used are: sex, age, family status, diseases, multi-morbidity, care level, kind of care benefits and kind of care arrangements. The detailed analyses in the reports 2008 to 2010 are restricted to persons aged 60 years and older at the moment of receiving the benefits of the long-term care insurance the first time. For the calculation of prevalence rates, all insured persons aged 60 and older are included. The 2011 care report is enlarged to include persons of all age groups.

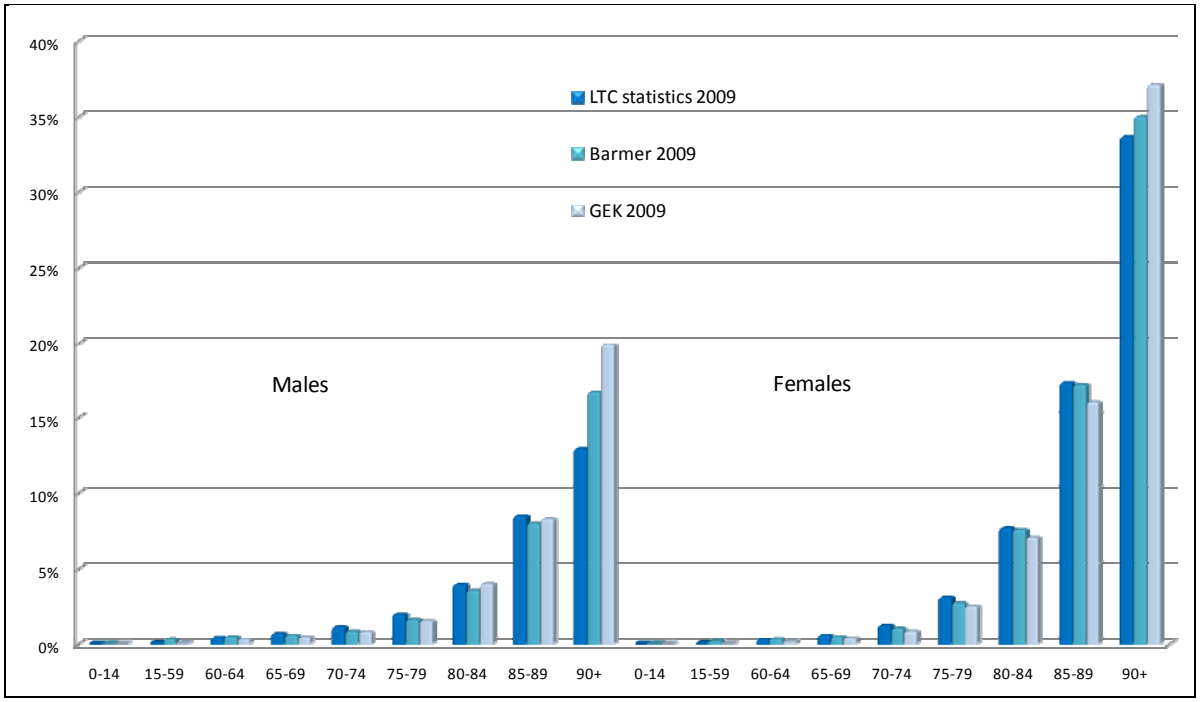
Representativeness of BARMER GEK data

The care reports provide overviews of the representativeness of the used routine data. In general the share of elderly is lower and the share of males higher in the routine data than in the total population, and therefore also the share of recipients of care benefits is lower. But the differences in the age and sex structure are stable over time, so that the results and the changes of BARMER GEK insured persons in need for care (and the determinants of care need) can be used as representative of the beneficiaries of the social insurance funds in total by using weights.

3.2 Prevalence

One indicator to compare the BARMER GEK data with the data of the long-term care statistics is the prevalence rate by sex and age groups. The prevalence rate in the highest age group is a little higher than the prevalence rate of the long-term care statistics and in the other age groups, a little lower (Figure 3). This is true for men and women.

Figure 3. Prevalence rates of institutional care of LTC statistics, BARMER and GEK, 2009



Sources: Federal Statistical Office, Statistics on long-term care; GEK Pflegereport (2010).

3.3 Characteristics of recipients of long-term care benefits

Already, the long-term care statistics showed that the age and sex structure of care recipients varies significantly between care levels and care arrangements. The routine data provide some additional information on the underlying diseases. The routine data projected onto the total population of Germany show following differences (Table 6).

Table 6. Characteristics of people who do and do not receive benefits of the insurance funds, 2010

	Males Care arrangements				Females Care arrangements			
	Without	**Informal care**	**Formal home care**	**Institutional care**	**Without**	**Informal care**	**Formal home care**	**Institutional care**
Persons in thousand	39,264	405	183	136	40,292	444	354	463
Beneficiaries	**Share in %**							
Without care benefits	100.0	0.4	3.0	7.2	100.0	0.8	2.9	6.8
Care level I	0.0	58.8	44.6	32.3	0.0	64.9	58.4	32.9
Care level II	0.0	31.2	36.3	38.8	0.0	26.3	29.2	37.6
Care level III	0.0	9.6	16.2	21.8	0.0	8.0	9.5	22.7
Age groups								
Under 15	14.1	10.6	0.4	0.1	13.1	6.5	0.1	0.0
15 to 59	63.1	31.1	12.0	11.9	59.9	21.5	5.6	2.5
60 to 64	5.7	5.4	4.3	5.5	5.8	4.1	2.2	1.2
65 to 69	5.2	7.5	6.0	7.1	5.6	5.0	3.4	2.0
70 to 74	5.6	11.0	11.6	10.8	6.3	8.4	7.1	4.6
75 to 79	3.3	11.3	15.4	13.5	4.2	10.7	12.2	9.1
80 to 84	2.0	11.7	21.5	19.1	3.0	16.1	22.4	20.2
85 to 89	0.7	7.7	18.2	18.8	1.6	17.4	28.6	31.7
90 and older	0.2	3.7	10.4	13.2	0.4	10.3	18.5	28.6
Diseases								
Cancer	4.8	17.4	23.9	17.5	5.2	14.3	15.6	11.6
Dementia	0.4	10.7	25.6	46.5	0.6	12.5	25.3	54.4
Parkinson's	0.3	6.2	11.0	12.2	0.2	4.4	6.4	9.1
Multiple sclerosis	0.2	2.7	2.4	1.6	0.4	4.6	2.9	1.3
Stroke	0.8	11.5	17.2	17.3	0.6	7.5	9.6	11.1
Fracture of the femur neck	0.0	0.5	1.3	1.8	0.1	1.1	1.9	2.7
Urinary incontinence	1.4	14.8	26.7	35.4	4.0	22.0	30.5	37.3
Faecal incontinence	0.1	2.7	4.9	8.9	0.2	2.7	4.0	7.3

Source: BARMER GEK data; BARMER GEK Pflegereport (2011, p. 122).

- As in the long-term care statistics, the share of people with care level III in nursing homes is higher than among people receiving formal home care or informal care. Some 22% of male and 23% of female residents had very severe impairments in 2010, compared to 16% (10% of females) in formal home care arrangements and 10% (8% of females) in informal care arrangements.
- People in nursing homes are on average older. One out of three male residents are aged 85 and older; the share is much higher among female residents (60%).

- The share of people suffering from dementia in nursing homes is twice as high as in formal home care arrangements. Every other person living in nursing homes has mental illness. The share is a little higher among women (54%) than among men (47%). By comparison, among persons in informal care arrangements "only" 11% of the males and 13% of the females suffer from dementia. Together with people suffering from Parkinson's, some 60% of nursing home residents have mental illnesses, compared to only 17% in informal care arrangements.
- One out of three residents has urinary incontinence, and some 8% have faecal incontinence. Thus, incontinence is more common among institutionalised people than among people living at home with the help from formal or informal carers.
- People who had a stroke or who are suffering from cancer often need intensive formal care. Thus, the share of these beneficiaries receiving informal care at home is significantly lower than the share among beneficiaries of formal home care or institutional care. Some 17% of the males and 11% of the females living in nursing homes were in the last two years admitted to hospital due to stroke. Nearly the same proportion of residents had in the last few years a hospital stay due to cancer. But in particular males with an underlying diagnosis of cancer are more often cared for at home by formal carer.

3.4 Incidence of institutional care

Prevalence rates show the share of people in the total population who are in need of care. But for detailed analysis, it is interesting to project who will become in need for care. The first indicator is the incidence rate. That is, the share of people who receive benefits for care for the first time in the total population.

Table 7. Incidence of (institutional) care by sex, age group and care level, 2000 to 2008

Care level	Age	Incidence of care need (benefits)				Incidence of institutional care			
		Men 2000	Women 2000	Men 2008	Women 2008	Men 2000	Women 2000	Men 2008	Women 2008
I-III	60-69	0.51	0.41	0.57	0.37	0.08	0.11	0.10	0.08
	70-79	1.76	2.35	1.57	1.39	0.36	0.60	0.42	0.49
	80-89	7.27	10.33	6.37	6.67	2.29	3.64	2.38	3.13
	90-	16.61	21.92	19.96	23.02	5.91	8.84	8.07	9.95
I	60-69	0.24	0.22	0.33	0.23	0.03	0.05	0.04	0.03
	70-79	0.81	1.53	1.00	0.97	0.08	0.28	0.19	0.23
	80-89	4.51	7.10	4.36	5.09	1.10	1.83	1.16	1.74
	90-	11.07	16.22	12.57	18.84	2.23	4.15	3.35	5.16
II	60-69	0.19	0.13	0.19	0.11	0.03	0.04	0.04	0.03
	70-79	0.71	0.63	0.43	0.37	0.19	0.26	0.19	0.22
	80-89	2.22	2.86	1.70	1.40	0.97	1.57	1.02	1.17
	90-	4.06	5.41	3.89	3.95	2.42	4.15	3.54	4.67
III	60-69	0.09	0.06	0.06	0.04	0.02	0.02	0.02	0.01
	70-79	0.24	0.19	0.13	0.05	0.09	0.06	0.04	0.05
	80-89	0.53	0.37	0.31	0.18	0.23	0.24	0.21	0.21
	90-	1.48	0.30	1.50	0.23	0.27	0.54	1.18	0.12

Source: GEK-Pflegereport (2009).

Entrance into a nursing home for people in need for care is an incisive event. They have to leave their familiar homes and surroundings and move from a dwelling or their house into a single room (maybe sometimes into a shared room) often far away from their family members and friends. People in need of care avoid this last step for as long as possible, but sometimes it is necessary. The number of people living in a nursing home increased significantly in the last decades and it is expected that this trend will continue due to the ageing of the population and the changes in the family and household structures. The incidence of entrance into a nursing home increases with age, but it is in general lower than the incidence of need for care (Table 7). The incidence of care need shows a shift to higher ages. Between 2000 and 2008, the incidence rates in the age-groups 60 to 89 years declined for males as well as for females, but the incidence rate in the highest age-group 90+ increased for both sexes. The same trend can be observed for institutional care of women, whereas the incidence of institutional care of men increased slightly in total (all care levels) and at care levels I and II. The incidence of institutional care declined in all age-groups for men and women with the exception of men aged 90+. That means that the need for care and also the need for institutional care occur more and more in higher ages.

From the age group 70-79 onwards, women have a higher risk of being admitted into a nursing home than men (Table 8). In general the risk of admission into a nursing home is higher for unmarried people than for married, higher for blue-collar workers than for white-collar employees and higher for people with multi-morbidities. Hospital admissions in the last two years play a role in particular for people with malignant tumours or mental illnesses. The admission into a nursing home depends also on the amount of care needed. Most people admitted into a nursing home for the first time are classified as people with substantial impairments, with the exception of people aged 70 to 79 who have mostly severe impairments at the time of first admission.

Table 8. Characteristics of people who were admitted into a nursing home, 2007

Characteristic	**Realisation**	**Transition rates[a] by age groups**			
		60-69	**70-79**	**80-89**	**90+**
Sex	Men	131	489	2,024	5,664
	Women	80	665	2,793	6,226
Family status	Married	67	421	1,779	3,438
	Unmarried[d]	313	1,040	3,185	6,802
Former employment	Worker	134	634	2,541	7,229
	Employee	83	486	2,220	3,766
Multimorbidity	One main disease	156	636	2,361	6,920
	Two main diseases	342	1,130	3,072	3,046
	Three or more main diseases	552	2,324	4,362	5,036
Diseases[b]	No[c]	57	302	2,020	6,543
	Tumors	541	1,301	2,778	7,692
	Mental illnesses	1,009	3,324	4,762	6,383
	Cardiovascular diseases	294	1,074	2,891	5,776
	Musculoskeletal disorders	44	597	1,356	8,621
Need for care	Care level I	7,216	16,809	22,124	26,087
	Care level II	5,128	20,495	13,548	10,526
	Care level III	5,128	7,447	2,597	5,556

[a] Entrance into institutional care per 100,000 insurants at the same age.
[b] Diagnoses at hospital to ICD-10 until two years before the entrance in the need for care.
[c] Disease was not diagnosed at hospital.
[d] Never married, widowed, divorced; annual observation possibly causes variability within the data.

Source: GEK-Pflegereport (2008).

3.5 Determinants of living in a nursing home

Nursing home admissions are caused by several determinants. The determinants of living in a nursing home are in general the same as the determinants of need for care, but the influence of the single factors is different. The main indicator is the absence of a family or other informal caregiver who could provide care at home. As caregiving at home is a hard and often an overwhelming full-time job, informal carers, in particular spouses who are mainly also in an older age, need additional help of professional homecare services. Only if the combination of informal and professional home care is no longer adequate or the informal carer him/herself is in need of care, a nursing home admission is required. In particular, men who never married have a significantly higher risk to be admitted into a nursing home than married men: in model I, some 280% higher risk and with diseases taken into account, 260%. But also for widowed and divorced men it's the risk to be admitted into a nursing home that is significantly higher than the risk to become in need for care in general. Table 9 shows also the high importance of mental illnesses for nursing home admission. The risk of nursing home admission is 720% higher for men with mental illnesses than for men without diseases; for women the relative risk is 490%.

Table 9. Determinants of nursing home admissions (relative risks), 2009

	Men	
	Model I	**Model II**
Exp (absolute term)	-17.195 ***	-16.203 ***
Age	1.170 ***	1.236 ***
Family status		
Never married	2.814 ***	2.619 ***
Widowed	2.187 ***	1.976 ***
Divorced	2.626 ***	2.249 ***
Former employment		
Employee	0.843 ***	0.891 **
Diseases		
Tumors		1.784 ***
Mental illnesses		7.214 ***
Neurological disorders		3.002 ***
Heart diseases		2.327 ***
Musculoskeletal disorders		0.877 **
Incidences	3.602	3.602
Person years	987.425	987.425
Log-Likelihood	-20234.241	-16587.434
	Women	
	Model I	**Model II**
Exp (absolute term)	-16.915 ***	-15.986 ***
Age	1.166 ***	1.139 ***
Family status		
Never married	1.717 ***	1.744
Widowed	1.880 ***	1.759
Divorced	2.068 ***	1.882
Former employment		
Employee	0.947	0.948
Diseases		
Tumors		1.823 ***
Mental illnesses		4.901 ***

Neurological disorders		2.304 ***
Heart diseases		2.368 ***
Musculoskeletal disorders		0.876 ***
Incidences	4,030	4,030
Person years	657,258	657,258
Log-Likelihood	-19875.924	-17214.464

Significance level *** P<0.1%; ** P<1%; *P<5%

Source: GEK-Pflegereport (2009).

4. Other studies of the characteristics of people living in a nursing home

Information about the characteristics of people in need of care is also available from the representative household survey, the so-called micro-census. The 'micro-census' included also information on persons in institutions. The micro-census shows also that long-term care recipients in nursing homes are on average to a higher degree widowed, never married or divorced compared to people in need for care at home (Table 10).

Table 10. Long-term care recipients in institutions by family status, 2003

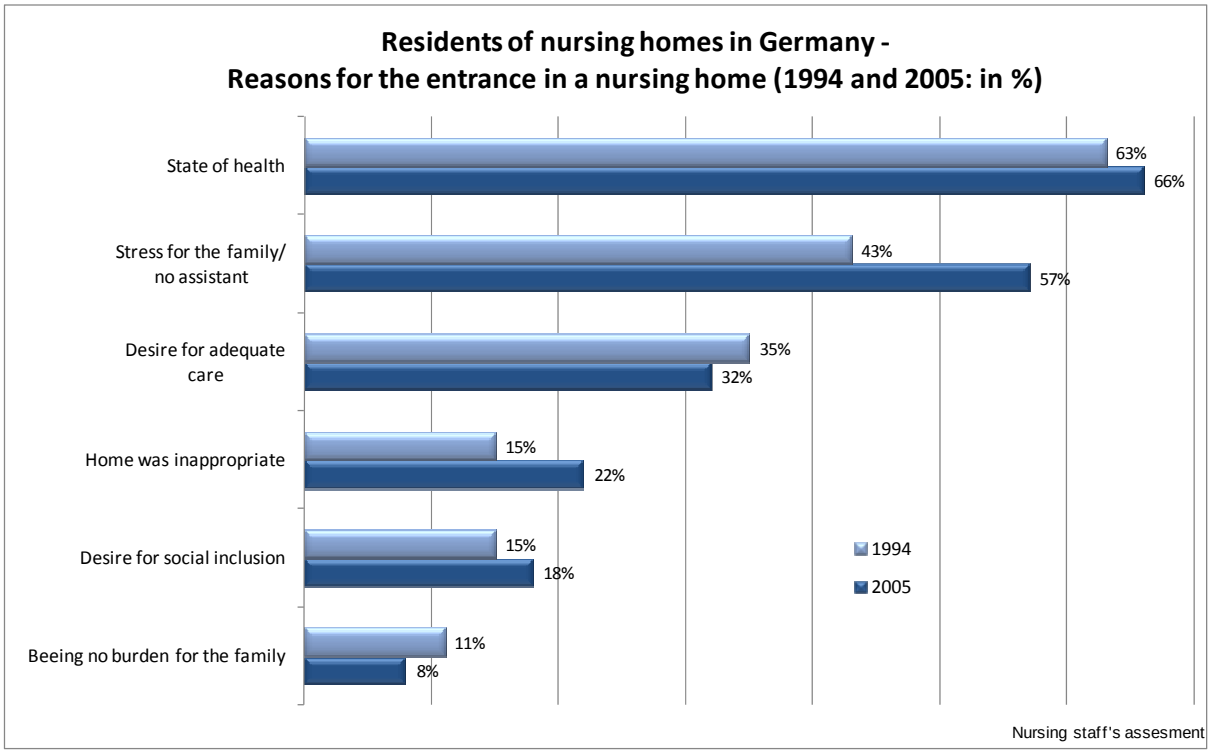
	Family status					
Age groups	**Total**		**Never married**	**Married**	**Widowed**	**Divorced**
	in 1,000s		**in %**			
			Men			
under 25	/	100	/	0	0	0
25-60	15	100	81.2	/	/	/
60-70	24	100	41.3	/	/	30.8
70-80	32	100	26.4	29.3	36.1	/
80-90	37	100	/	31.5	54.1	/
90 and older	17	100	/	/	62	0
total	126	100	28.9	22.1	37.8	11.2
			Women			
under 25	/	100	/	0	0	0
25-60	11	100	/	/	/	/
60-70	22	100	38.5	/	38.8	/
70-80	86	100	19	11.3	63.5	/
80-90	219	100	13.1	4.1	78.9	4
90 and older	130	100	12.4	/	82.1	/
total	469	100	16.2	5.1	73.1	5.4

Source: Calculations by DIW Berlin based on Micro-consus (2003).

Schneekloth et al. carried out surveys in private households and in nursing homes to collect information about the characteristics of people in need for care. The surveys in nursing homes were carried out in 1994 and 2005 and the last results were published in 2007 (Schneekloth & Thörne, 2007). Besides the factors discussed above, they included the caregiving burden of family carer, the living situation at home and the impression of people in need for care of being excluded from the social community. Figure 4 shows the relative importance attached to the above-mentioned determinants, the 'soft' indicators such as social exclusion and not wishing to be a burden to the

family, play a significant role, too. The importance of the indicator "stress for the family" increased between the two surveys significantly from 43% to 57% and ranges behind the health status on the second place.

Figure 4. Reasons for nursing home admissions, 1994 and 2005



Sources: Schneekloth & Thörne, 2007.

Schneekloth and Thörne also focus on the living arrangements prior to nursing home admission. As shown by the GEK data, living alone is one of the predictors of nursing home admission; a small part came from other nursing homes or homes for the elderly (Table 11).

Table 11. Type of living arrangements prior to nursing home admission, 1994 and 2005 (%)

Type of household before nursing home admission	**1994**			**2005**		
	Total	**Women**	**Men**	**Total**	**Women**	**Men**
Private household, single	57	61	40	60	64	46
Private household, multi-person	27	24	38	27	23	39
Nursing home (another)	2	2	2	5	5	5
Home for the disabled	3	3	3	1	1	2
Others	7	6	12	4	3	5
Unknown	4	4	5	3	4	2
Percentage of people aged 75 years and older living alone in the total population	42	51	20	44	54	21

Source: TNS Infratest-Heimerhebung, 1994 (MuG II) and 2005 (MuG IV).

5. Summary and conclusion

The information on the determinants of institutional care and the characteristics of residents in nursing homes stem mainly from two sources:

- The long-term care statistics, which provides information on all beneficiaries of the social and private LTC insurance funds, including the main determinants of institutional care, namely age, gender and level of dependency measured by care levels.
- Data of one social insurance fund, the BARMER GEK, which covers more than 10% of all insured persons in Germany. The so-called 'routine data' provide, besides sex, age and care level, information on the family status, employment status and underlying diseases.

The results of the empirical analyses can be summarised as follows:

- The need for care is strongly correlated with age. The older the beneficiary the higher the possibility to be admitted into a nursing home. The share of beneficiaries in nursing homes increased in the last ten years in all age groups and care levels for males and females.
- Family status also plays a dominant role for nursing home admission. Caregiving at home has the priority for people in need for care as well as in the regulations of the LTC insurance. Benefits for institutional care are available if caregiving at home is not possible or not adequate. Never married, widowed or divorced people have a higher probability to be admitted into a nursing home.
- Females live longer than men. That has a two-fold impact: females are often widowed and there is no partner as potential informal carer; as the probability to need personal care and help with household scores increases with age, females have a higher prevalence for institutional care during their life time. Thus, a huge part of residents are females.
- The level of dependency is also relevant, in particular if care around the clock is needed. The higher the care level, the higher the share of institutional care.
- Underlying diseases have a significant influence, in particular mental illnesses (dementia, Parkinson's disease) as well as stroke and malignant tumours.

The observed trend towards professional home care and institutional care will continue to be driven by the changes in the family structure and living arrangements and their impact on potential informal carers. It is expected that more couples will grow old together due to the increase in life expectancy for men and women, but as the incidence rates show a trend towards older ages, the caregiving partner will also be of an older age. Thus, the elderly caregiver needs the help of professional home care services and in some cases a nursing home admission may be required.

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DIW- Deutsches Institut für Wirtschaftsforschung. The German Institute for Economic Research (a registered association) in Berlin was originally founded in 1925 as the “Institute for Business Cycle Research”. It is now one if the leading economic think-tanks in Germany. As an independent, non-profit organisation, the DIW is exclusively committed to academic pursuits in the public interest. The DIW’s main task is to investigate economic processes in Germany and abroad and to support decision-making in politics, economy and administration. The analytical tools are theoretical assessment, empirical testing, economic and econometric modelling. The wide range of research covers anything from short-term analysis of economic developments, searching for answers to current economic and fiscal affairs, to the long-term projection and evaluation of developments in the global economy and individual sectors alike. Social changes are recorded by the German Socio-Economic Panel (SOEP), which compiles a periodical representative longitudinal survey of private German households.

EUROPEAN COMMISSION
European Research Area

SEVENTH FRAMEWORK PROGRAMME

Funded under Socio-economic Sciences & Humanities

ANCIEN

Assessing Needs of Care in European Nations

FP7 HEALTH-2007-3.2-2

Launched in January 2009, ANCIEN is a research project financed under the 7th EU Research Framework Programme. It runs for a 44-month period and involves 20 partners from EU member states. The project principally concerns the future of long-term care (LTC) for the elderly in Europe and addresses two questions in particular:

1) How will need, demand, supply and use of LTC develop?

2) How do different systems of LTC perform?

The project proceeds in consecutive steps of collecting and analysing information and projecting future scenarios on long-term care needs, use, quality assurance and system performance. State-of-the-art demographic, epidemiological and econometric modelling is used to interpret and project needs, supply and use of long-term care over future time periods for different LTC systems.

Work Packages. The project started with collecting information and data to portray long-term care in Europe (WP 1). After establishing a framework for individual country reports, including data templates, information was collected and typologies of LTC systems were created. The collected data form the basis of estimates of actual and future long term care needs in selected countries (WP 2). WP 3 builds on the estimates of needs to characterise the response: the provision and determinants of formal and informal care across European long-term care systems. Special emphasis is put on identifying the impact of regulation on the choice of care and the supply of caregivers. WP 6 integrates the results of WPs 1, 2 and 3 using econometric micro and macro-modelling, translating the projected needs derived from WP2 into projected use by using the behavioral models developed in WP3, taking into account the availability and regulation of formal and informal care and the potential use of technological developments.

On the back of projected needs, provisions and use in European LTC systems, WP 4 addresses developing technology as a factor in the process of change occurring in long-term care. This project will work out general principles for coping with the role of evolving technology, considering the cultural, economic, regulatory and organisational conditions. WP 5 addresses quality assurance. Together with WP 1, WP 5 reviews the policies on LTC quality assurance and the quality indicators in the EU member states, and assesses strengths, weaknesses, opportunities and threats of the various quality assurance policies. Finally WP 7 analyses systems performance, identifying best practices and studying trade-offs between quality, accessibility and affordability.

The final result of all work packages is a comprehensive overview of the long term care systems of EU nations, a description and projection of needs, provision and use for selected countries combined with a description of systems, and of quality assurance and an analysis of systems performance.

Principal and Partner Institutes

CEPS is responsible for administrative coordination and dissemination of the general results (WP 8 and 9). The Belgian Federal Planning Bureau (FPB) and the Netherlands Bureau for Economic Policy Analysis (CPB) are responsible for scientific coordination. Other partners include: German Institute for Economic Research (DIW); Netherlands Interdisciplinary Demographic Institute (NIDI); Fundación de Estudios de Economía Aplicada (FEDEA); Consiglio Nazionale delle Ricerche (CNR); Universitá Luiss Guido Carli-Luiss Business School (LUISS-LBS); Institute for Advanced Studies (IHS); London School of Economics and Political Science- Personal Social Services Research Unit (PSSRU); Istituto di Studi e Analisi Economica (ISAE); Center for Social and Economic Research (CASE); Institute for Economic Research (IER); Social Research Institute (TARKI); The Research Institute of the Finnish Economy (ETLA); Université de Paris-Dauphine-Laboratoire d`Economie et de Gestion des organisations de Santé (DAUPHINE- LEGOS); University of Stockholm, Department of Economics; Karolinska Institute-Department of Medecine, Clinical Epidemiology Unit ; Institute of Economic Research, Slovak Academy of Sciences (SAS-BIER); Center for Policy studies (PRAXIS). Most of the ANCIEN partners are members of the European Network of Economic Policy Research Institutes (ENEPRI).

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