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# ANCIEN

**Assessing Needs of Care in European Nations**

## **THE LONG-TERM CARE WORKFORCE: DESCRIPTION AND PERSPECTIVES**

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### **Abstract**

This report provides a comparative analysis of the size and composition of the long-term care (LTC) workforce in four European countries – Germany, the Netherlands, Spain, and Poland – each representative of a different type of LTC system. Trends over the 1993-2008 period show substantial differences in care worker density, with the Netherlands continuing to have the highest number of care workers relative to its older population. While in all countries care employment is predominantly female and the share of older workers is increasing, considerable variation exists in the educational profile of the care workforce, the share of foreign nationality care workers, and part-time employment rates. Using a stock-flow cohort projection model, the report illustrates the potential impact of demographic trends on the future number and age structure of care workers.

**Keywords** – Long-term care, workforce, comparative analysis, stock-flow cohort model.



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# The Long-Term Care Workforce: Description and Perspectives

## ENEPRI Research Report No. 93/August 2011

Joanna Geerts\*

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### 1. Introduction

Population ageing and other factors, like possible reductions in the availability of informal care givers (such as partners, children, other relatives, friends or neighbours providing unpaid care) and growing expectations of high-quality care, are likely to cause an increasing discrepancy between the demand for formal long-term care (LTC) services and their availability. The same factors are creating pressures on the formal LTC workforce. Care for dependent persons, both in institutions such as nursing homes or residential care homes and at home, is highly labour intensive. This implies that the sustainability of high-quality LTC systems will require adequate human resources.

Long-term care workforce issues are a growing concern in many countries. The European Commission (2009) has emphasised that LTC constitutes a structural challenge for European labour markets. Undoubtedly, the growing demand for formal services represents an opportunity for substantial employment creation. But this will require considerable efforts in a sector that is currently characterised in many countries by low wages, gender segregation, poor working conditions and high turnover.

The structure of LTC systems shows significant cross-country variation in Europe. Countries differ considerably with regard to the scope of entitlement to publicly funded LTC, the integration or fragmentation of the system, the role of cash benefits and of in-kind services, and many other system characteristics. As a consequence, one can assume that the size and structure of the formal LTC workforce will differ, too.

Comparative research on workforce characteristics, however, is still rather scarce. Fujisawa & Colombo (2009) present available data on the stock of LTC workers in OECD countries. The OECD pilot data collection on which their report is based, requested data from 14 countries along 5 specifications: gender, occupation, care setting, origin, and educational level. Reported data refer mostly to 2006 or the latest year available, and to a limited subset of countries only. As stated by the authors, reported data are not always comparable. For instance, French data on the ratio of total formal LTC workers per 1000 elderly persons includes home care nurses only, while the corresponding figure for the Netherlands supposedly includes a much larger variety of occupations that could not be separated from LTC workers, including midwives and child care workers. Simonazzi (2009) compares estimates of total employment and workforce characteristics in the elder care sector for 8 European countries, participating in the EU financed DYNAMO project. She describes various European country models of elderly care and shows how national employment models and the way elderly care is provided and financed combine to shape the differing capacity to meet the increasing demand for care. For the most part, Simonazzi's analysis of the workforce is based on data from DYNAMO country reports. Reported data on employment in home/domiciliary care, nursing homes/residential care and on

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irregular workers refer to 2004 or the latest year available only and are not always comparable across countries. Other comparative studies on care employment (see for instance Escobedo et al., 2002) report similar data comparability problems.

In this report we examine differences and similarities in the size and structure of the LTC workforce between four countries – Germany, the Netherlands, Spain and Poland – each representative of a cluster of countries with different LTC systems, as identified by Kraus et al. (2010) in work package 1 of the ANCIEN project. The authors distinguished different systems using information on public LTC expenditure as a share of GDP, private expenditure as a share of LTC spending, the share of informal care users among the 65+ population, and support measures for informal care givers. The typology is presented in Table 1, below.

Cluster 1, to which Germany belongs, consists of countries in which a low level of public spending is combined with a modest share of private spending, high informal care use and high informal care support. The Netherlands belongs to a cluster of Northern European countries characterised by high public LTC spending, low private spending, low informal care use and high informal care support. Spain and the other countries of cluster 3 share the profile of cluster 1 with regard to informal care use and support, but have a much higher level of private responsibility and a somewhat higher level of public spending. Poland is allocated to cluster 4 which is characterised by a small public sector involvement, more private spending, high informal care provision but few supportive measures for informal caregivers. Cluster 2 is ranked by Kraus et al. (2010) as the most attractive from the point of view of elderly persons in need of care. Clusters 1 and 3 share second and third place, and cluster 4 is placed fourth in the ranking.

*Table 1. Typology of LTC systems*

		<b>Public Spending</b>	<b>Private Spending</b>	<b>Informal Care Use</b>	<b>Informal Care Support</b>
CLUSTER 1	<b>Germany</b>				
	Belgium	Low	Low	High	High
	Czech Republic				
	Slovakia				
CLUSTER 2	<b>The Netherlands</b>				
	Denmark	High	Low	Low	High
	Sweden				
CLUSTER 3	<b>Spain</b>				
	Austria				
	Finland	Medium	High	High	High
	France				
	England				
CLUSTER 4	<b>Poland</b>				
	Hungary	Low	High	High	Low
	Italy				

*Source:* Kraus et al. (2010).

Policy-makers are becoming increasingly aware of the relevance of workforce planning in the long-term care sector. Anticipating potential future imbalances between supply and demand in time for action to be taken is crucial. In recent years, many countries and international organisations have been collecting and analysing information relating to the future development of LTC. A variety of LTC projection models has been developed and utilised, serving different purposes and using different methodologies. Most LTC projections focus on future care needs and demand for care services, on expected shifts in formal and informal care utilisation, and on

expenditures. Whereas for many countries workforce planning models exist and projections are made up of the future supply and demand of specific health care professions, such as nurses, general practitioners or medical specialists (see O'Brien-Pallas et al. (2001) and Bosworth et al. (2007) for a review), LTC workforce projection and/or planning models are few or non-existent for most countries.

Several LTC utilisation and expenditure projections assume that supply of formal care will adjust to match demand and that demand will be no more constrained by supply in the future than in the base year (see for instance Hancock et al., 2006). However, this might not be necessarily so. Some countries have witnessed rather dramatic increases or decreases in their LTC service levels, changes often not related to comparable changes in LTC needs or demand for formal care services. The question whether the long-term care workforce could expand to meet higher demand for higher quality care is difficult to answer. Supply of labour depends on wages and labour conditions, on people's willingness to work in the care sector, on barriers to market entry, on the action of 'competitor' industries such as health care, on migration flows and so on (Wanless, 2006). In this report we briefly examine the potential impact of demographic trends on the number and age structure of LTC workers over the next 20 years, using a stock-flow cohort projection model.

In summary, this report aims at contributing to the characterisation of long-term care systems in Europe by providing a comparative descriptive analysis of the LTC workforce. Our approach focuses on:

- an in-depth comparison of four countries identified as representative of different LTC systems;
- a description of the current situation and trends in size and composition over the 1993-2008 period;
- a projection exercise, illustrating the likely effect of future demographic trends.

As noted in the few earlier comparative studies, obtaining reliable comparative data on the size and composition of staff in LTC settings is difficult. Section 2 discusses data availability problems and describes the data strategy and data sources on which our analyses are based. Similarities and differences in the size of the care workforce and its composition according to age, gender, educational level, nationality, and working time (full-time/part-time) are described in section 3. Using a stock-flow cohort projection model, the potential impact of demographic trends on the future number and age structure of care workers is briefly explored in section 4.

## **2. Data sources**

Several studies note the difficulties in identifying and counting LTC workers across European countries (Korczyk, 2004; Fujisawa & Colombo, 2009; Simonazzi, 2009). Data at the national level are inadequate for some countries and harmonisation of international statistics is problematic. Several characteristics of the European LTC systems – different levels of integration within the health or broader social sector, varying shares of different labour markets and of the informal market – make it difficult to obtain reliable comparative data. Furthermore, different countries use different terms for what may be substantially the same kind of employee (Korczyk, 2004).

Available cross-national data usually relate to broad categories of occupations. For some countries, national data offer more detail, but often these data are not comparable across countries (Simonazzi, 2009). We have opted for combining cross-national and national data for a limited number of countries, each representative of a cluster of countries with similar LTC systems. This approach offers the advantage of being able, on the one hand, to rely on more or

less harmonised international data, albeit referring to rather broad occupational categories, and, on the other hand, to complete this information with more detailed data from national sources, whenever available. The cross-national source being used is the European Labour Force Survey (EU LFS), which we consider in section 2.1. National sources are discussed in section 2.2.

## 2.1 The European Labour Force Survey

The EU LFS is a large household sample survey providing quarterly results on labour participation of people aged 15 and over as well as on persons outside the labour force. The Labour Force Surveys are conducted by the National Statistical Institutes across Europe and are centrally processed by Eurostat. The data collection started in 1983.

Occupations within the long-term care domain such as nurses, nursing aides, home carers or domestic helpers, do not always fall neatly within the International Standard Classification of Occupations (ISCO-88) groupings at the 3 digits level that are currently used in the EU LFS.<sup>1</sup> Moreover, the distribution of long-term care jobs across different ISCO categories varies between countries, reflecting variation in the organisation of care for dependent persons (Fujisawa & Colombo, 2009). Furthermore, within the same country, the structure of the care workforce may change in response to socio-economic and policy changes and the distribution of the LTC-workforce across ISCO categories may vary accordingly (Simonazzi, 2009). Besides these general problems in using EU LFS data for estimating and describing total LTC employment, large discrepancies have been reported for some countries between EU-LFS estimates of the number of workers in care-related ISCO-categories and the number of care workers according to national data sources (Escobedo et al., 2002).

In our analyses of EU LFS data we included the following four occupational categories: ISCO-88 513, 223, 323, and 913.

Both ISCO 513 and ISCO 323 cover substantial numbers of long-term care workers. ISCO category 513 is defined as “personal care and related workers” and includes four subgroups: child-care workers, institution-based personal care workers, home-based personal care workers, personal care and related workers not classified elsewhere. This group of occupations is described as follows:

Personal care and related workers provide child care and help in looking after schoolchildren, perform various tasks in order to assist medical and nursing professionals and associate professionals in their duties at hospitals and other institutions, provide home-based personal care, or help veterinary, pharmaceutical or other professionals in their tasks.

While this group chiefly includes long-term care jobs, it also includes a number of jobs that clearly fall outside the long-term care domain, e.g. child-care workers, veterinary and pharmacy aides.

ISCO category 323 is defined as “nursing and midwifery associate professionals”. These professionals “apply medical concepts and principles relating to the delivery of babies and to nursing of the ill, injured or disabled, and of mothers and their newborn babies.” In this category too, members of the LTC workforce are grouped together with professionals from outside the LTC domain.

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<sup>1</sup> The 4 digit level ISCO-88 codes would allow a better fit to the LTC occupations, but variables with this level of detail are transmitted by the National Statistics Institutes to Eurostat on a voluntary basis and the data are not provided by Eurostat yet. Also, the new ISCO-08 classification provides more detailed occupational categories, but data according to this classification are not available yet.



We further included ISCO category 913, which consists of domestic and related helpers, cleaners and launderers,<sup>2</sup> and ISCO category 223, defined as “nursing and midwifery professionals”. ISCO category 913 is included because in the ANCIEN project LTC is defined as not only encompassing institutional or home-based nursing care and personal care, but also home help and care assistance, i.e. help with IADL (Instrumental Activities of Daily Living) restrictions, including housekeeping, meals on wheels and so on. Although many LTC jobs require a relatively low level of skills, higher nursing skills may be necessary in caring for recipients affected by dementia or with multiple chronic care needs (Fujisawa & Colombo, 2009). Besides, in some countries personal care services are part of the health care system and are provided by nurses. For these reasons, we opted to include ISCO category 223 – Nursing and midwifery professionals, too.

While this selection excludes a range of paramedical practitioners providing specialist knowledge and skills, such as occupational therapists, physiotherapists and audiologists, and while it also excludes social work and management jobs, it includes several categories of care professions not involved in long-term care, like for instance child-care workers and all nursing professionals and nursing associate professionals not employed in long-term care institutions or home nursing.

For further comparison, we include EU LFS data on employment in two economic activities sectors where most of long-term care work is situated: NACE (Classification of Economic Activities in the European Community, Rev. 1.1) sector N – Health and Social Work, and NACE sector P - Activities of households. Other cross-national data briefly referred to in our analysis are EU KLEMS<sup>3</sup> data on employment in sector N and sector P, and WHO data on the number of nurses.

Data extraction from the EU LFS has been undertaken to the project’s specifications by EDS (Europäischer Datenservice), Statistisches Bundesamt. The extracted data on care occupations cover the years 1993-2008, as data on occupation (ISCO-88) have been collected since 1993. The data on employment in health and social work and in activities of households relate to the 1993-2007 period, as from 2008 a revised classification system (NACE Rev. 2) has been used.

## 2.2 National data

For some countries, the number of care workers according to EU LFS data has been reported to deviate considerably from the number of care workers according to national sources of data. In their comparative study of the care workforce in Europe Escobedo et al. (2002) noted that one of the reasons for this discrepancy is the fact that national systems for classifying occupations differ from the ISCO system. While some countries code occupations directly into the ISCO system, other countries apply both national classification systems and ISCO to their data, and still others first code occupations according to their national classification systems and then apply the ISCO to these national classifications. For Spain for instance, from a comparison of national EPA (Survey of the working population) data and EU LFS data, it appears that, while total numbers of care workers (excluding domestic workers) are quite similar across both data sources, there are large discrepancies for specific occupational categories.

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<sup>2</sup> Occupations in ISCO category 913 are further classified into the following subgroups: domestic helpers and cleaners; helpers and cleaners in offices, hotels and other establishments; hand-launderers and pressers.

<sup>3</sup> Employment data from the EU-funded EU KLEMS project is based on national account data and additional national sources. Corrections have been made in case of changes in definitions or classifications and trends have been applied to take series back or forward.

In order to obtain as accurate a picture as possible of the LTC workforce in the four selected countries, we therefore opted to draw on national sources of information as well. However, as is emphasised by Escobedo et al. (2002), these national sources vary in a number of significant respects, making reliable cross-country comparisons sometimes difficult or even impossible.

The national country reports and the data collected in WP 1 were screened for information on the long-term care workforce and additional information was gathered from national statistical offices' websites, national reports and project partners.

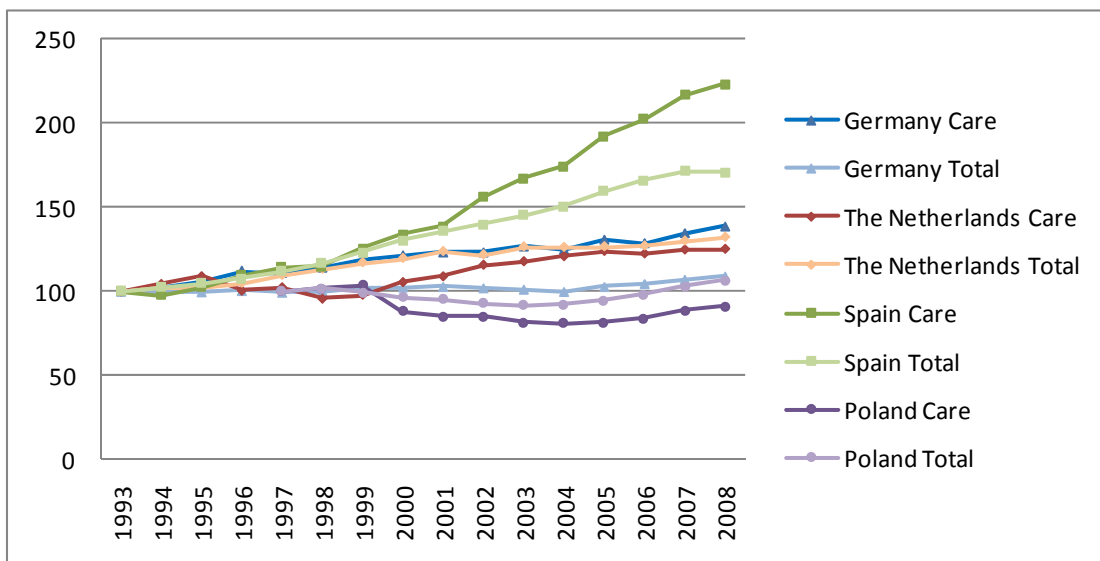
### 3. Trends in size and structure of the care workforce

#### 3.1 Size of the care workforce

Figure 1 shows differences among selected ANCIEN countries in care employment trends according to EU LFS data. Between 1993 and 2008, total employment in care occupations more than doubled in Spain and increased substantially in the Netherlands and Germany, whereas in Poland the number of persons employed in care occupations seems to have stabilised in recent years, after a decrease at the beginning of the decade.

Care employment increased more rapidly than total employment in Spain and Germany. In the Netherlands the share of care employment in total employment seems to fluctuate, after a decrease in the second half of the 1990s. Between 1999 and 2004 the share of care employment in total employment decreased in Poland, but it has been increasing since.

Figure 1. Trends in care employment, EU LFS data, 1993-2008 (1993=100)



Sources: EU LFS and author's calculations.

Table 2. Employment in care occupations, absolute numbers (x 1,000) and relative to population of 65 years and over, EU LFS and national data, 1993-2008

	1993	1996	1999	2002	2005	2008
<b>GERMANY</b>						
EU LFS						
Employment in care occupations (x 1,000)	2,092	2,346	2,492	2,576	2,736	2,902
Care workers/1000 65+	172	184	191	183	178	177
NATIONAL DATA						
Employment in LTC (x 1,000)			625	665 <sup>1</sup>	761	810 <sup>2</sup>
LTC workers/1000 65+			48	49 <sup>1</sup>	50	50 <sup>2</sup>
<b>THE NETHERLANDS</b>						
EU LFS						
Employment in care occupations (x 1,000)	692	695	679	801	857	866
Care workers/1000 65+	349	337	319	363	375	359
NATIONAL DATA						
FTE Employment in LTC (x 1,000)			192	212	227	211
FTE LTC workers/1000 65+			90	96	99	87
<b>SPAIN</b>						
EU LFS						
Employment in care occupations (x 1,000)	966	1,059	1,217	1,505	1,858	2,155
Care workers/1000 65+	171	173	185	216	257	287
NATIONAL DATA						
Employment in care occupations (x 1,000)		655	752	918	1,197	1,385
Employment in LTC (x 1,000)			146 <sup>3</sup>		186	
Care workers/1000 65+		107	114	132	165	184
LTC workers/1000 65+			22 <sup>3</sup>		26	
<b>POLAND</b>						
EU LFS						
Employment in care occupations (x 1,000)		844 <sup>4</sup>	873	718	690	771
Care workers/1000 65+		190 <sup>4</sup>	190	149	138	150
NATIONAL DATA						
Employment in LTC (x 1,000)					53	55
LTC workers/1000 65+					11	11

<sup>1</sup> Figure for 2001

<sup>2</sup> Figure for 2007

<sup>3</sup> Figure for 2000

<sup>4</sup> Figure for 1997

Sources: EU LFS, national data sources<sup>4</sup> and Eurostat population data, and FPB calculations.

<sup>4</sup> For Germany: Federal Statistical Office, Long-term care statistics, calculation DIW Berlin (Schulz, 2010); for The Netherlands: Statistics Netherlands; for Spain LTC workers: Miguélez et al. (2006), care workers: Encuesta de población activa (EPA), Instituto Nacional de Estadística, calculation FEDEA; for Poland: Central Statistical Office (GUS).

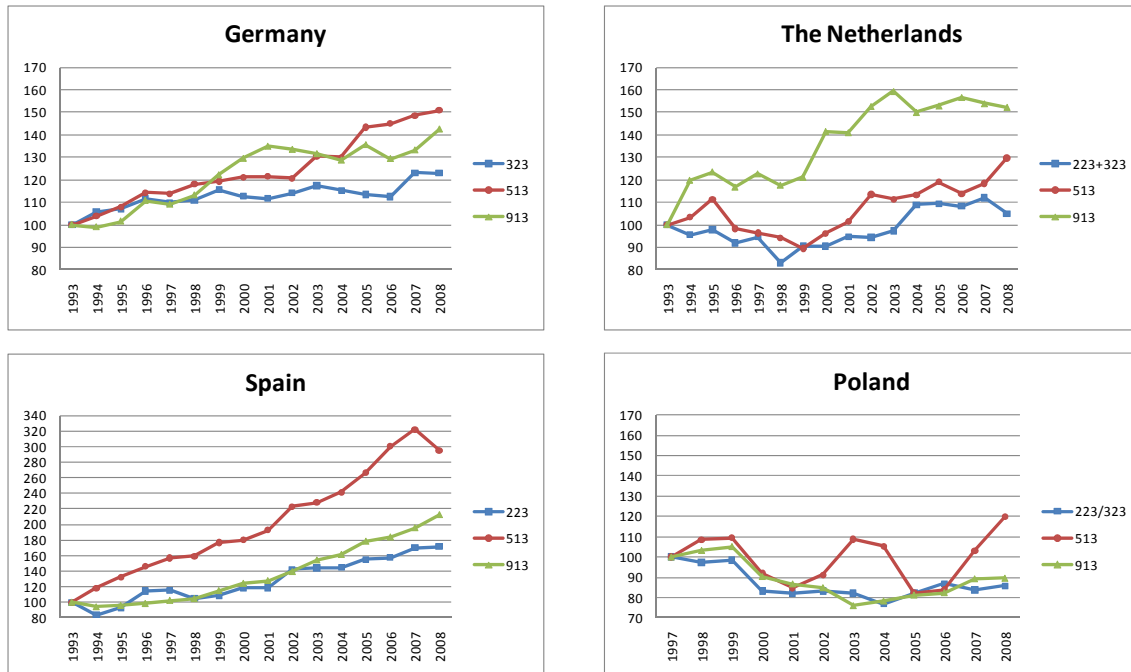
According to EU LFS data, Germany witnessed a rapid growth in the number of care workers relative to its older population in the period after the introduction of the long-term care insurance (Pflegeversicherung) in 1995, and a declining rate in more recent years (see Table 2). In Spain, starting from a level comparable to that of Germany, the density of care workers according to EU LFS data strongly increased between 1993 and 2008, reaching a much higher level in 2008 than Germany. Relative to its older population, in Poland the number of care workers shrank between 1997 and 2005, and despite a rather strong increase afterwards, it had the lowest density of care workers in 2008. According to EU LFS data the Netherlands, on the other hand, had by far the highest density of care workers in 1993 and continued to score highest in 2008.

Table 2 also includes available national data on the size of the long-term care workforce. As expected, for all countries the EU LFS categories include a much larger group of care workers than the number of LTC workers as identified by national data sources. Table 2 further shows that the gap between EU LFS care work and national LTC figures is much smaller for the Netherlands and Germany than for Spain and Poland, which could be partly due to the relative unavailability of accurate LTC data in the latter countries. According to the national data sources, and for all available years, the density of LTC workers is highest in the Netherlands and lowest in Poland. Germany ranks second and Spain ranks third, while according to the EU LFS data, by 2008 Spain had a much higher care worker density than Germany. For Spain, although national care worker density figures are much lower than EU LFS figures, both data sources show a similarly increasing trend.

As already emphasised, both cross-national and national data sources have their own limitations. These limitations are not removed by combining both data sources, but this approach makes an international comparison possible, by relying on more or less harmonised international data, while, at the individual country level, taking into account discrepancies between the broadly defined international data and more detailed national data.

While in Germany personal care and domestic occupations contributed rather equally to care employment growth, in the Netherlands employment of domestic helpers grew faster than personal care employment and the reverse was true in Spain (see Figure 2). In Poland personal care employment moved up and down, but has increased rather sharply in recent years. The numbers of domestic helpers and nursing (associate) professionals however, decreased over the 1997-2008 period. In general, employment growth in nursing (associate) professions lagged behind growth in the other care-related occupational groups.

Figure 2. Trends in care employment by occupation, 1993-2008 (1993=100)

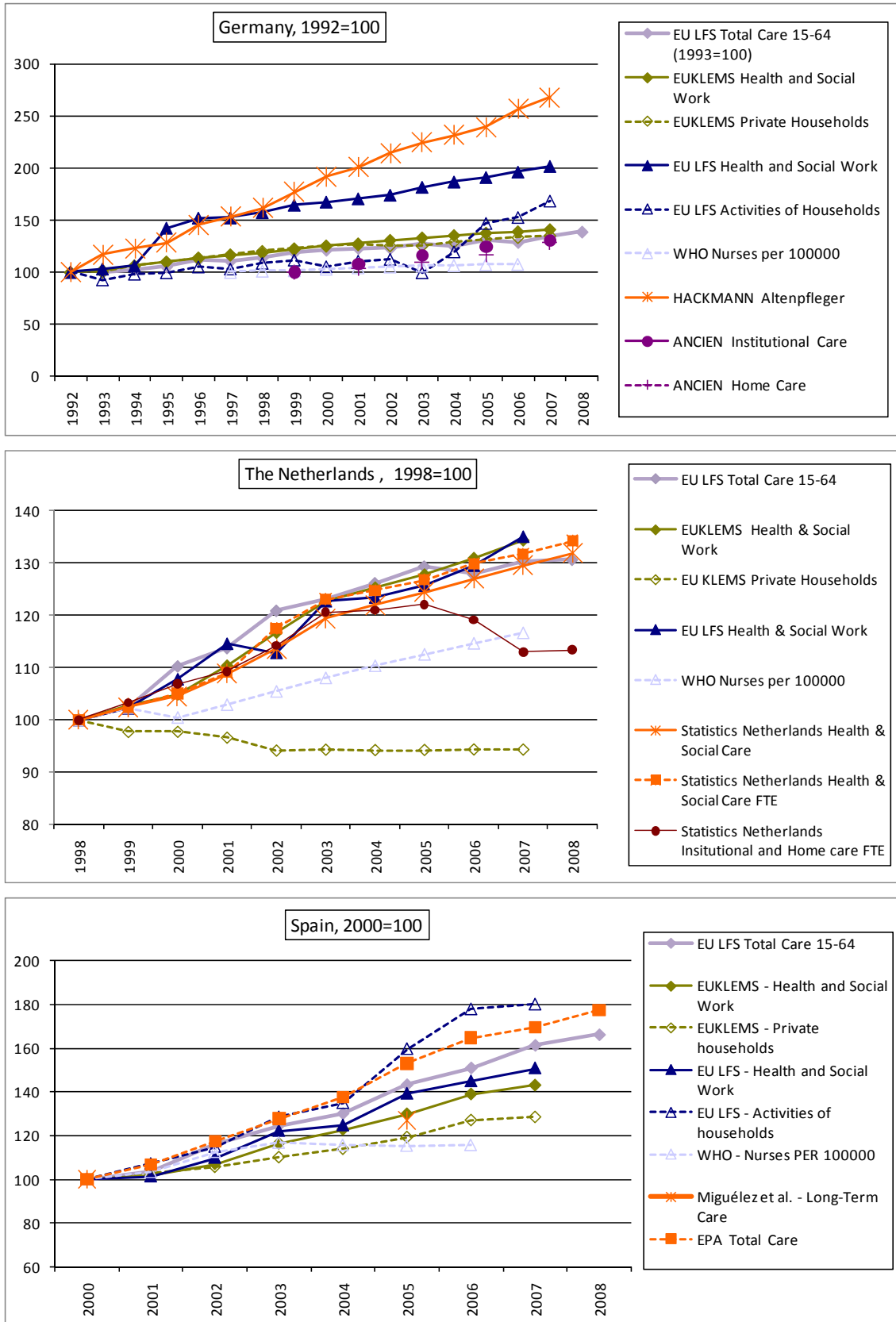


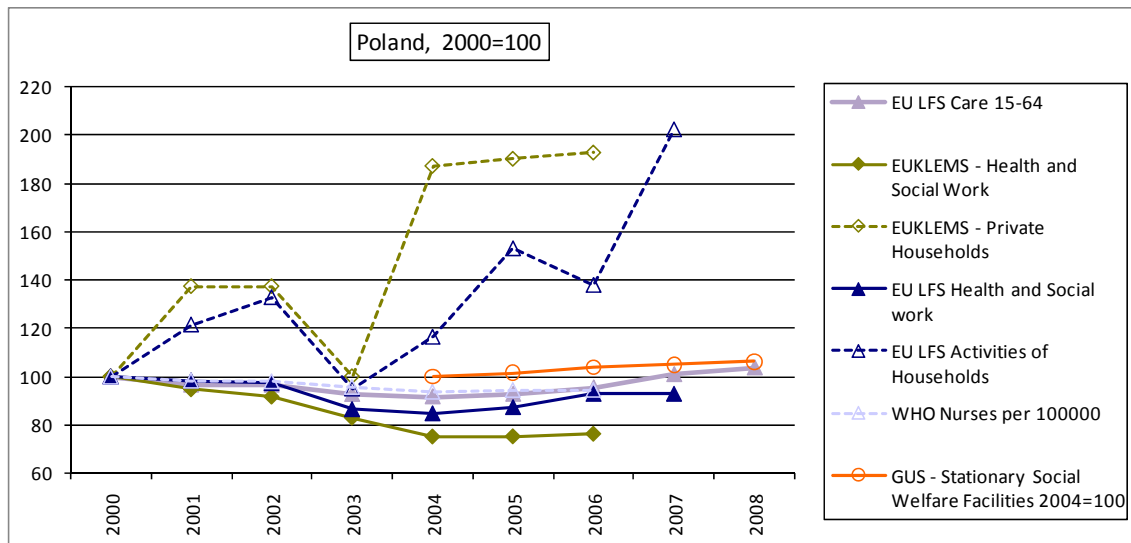
223: Nursing and midwifery professionals; 323: Nursing and midwifery associate professionals; 513: Personal care and related workers; 913: Domestic and related helpers, cleaners and launderers.

Sources: EU LFS and FPB calculations.

In Figure 3, observed trends in total care employment based on EU LFS data are further compared with employment trends observed in other international and national data. The reporting period differs depending on data availability for the individual countries. Generally, the observed trends in total care employment based on EU LFS occupational categories are in line with trends identified in other datasets and based on other definitions of care employment. While, for the Netherlands, Figure 3 shows a slight decrease in full-time equivalent employment in institutional and home care in recent years, most other Dutch data series show an increasing trend. In Germany the number of persons employed in the occupation of elderly care worker (*Altenpfleger*, data reported by Hackmann, 2009) rose faster than employment in all care-related occupations and also faster than employment in the total health and social work sector. The trend in employment in institutional and home care however, is quite similar to the trend in total care employment as observed from EU LFS data. For Spain and Poland too, the few available national data sources indicate that long-term care employment follows a trend similar to that for total care employment.

Figure 3. Trends in care employment, comparison of international and national data sources





### 3.2 Employment structure

Several studies have shown that employment in (long-term) care jobs presents some special characteristics compared with other sectors (see for instance Fujisawa & Colombo, 2009; Simonazzi, 2009). Across countries, the overwhelming majority of care workers are female and the share of part-time employment is high. Elderly care workers are typically older than the total workforce average. This part of the section on trends in care employment takes a closer look at similarities and differences between the four countries considered, in the composition of the care workforce according to gender, age, educational level, nationality and working time. For each country, care workforce characteristics are compared to general workforce composition data.

#### 3.2.1 Gender composition

Employment in care is predominantly female in all four countries (

Table 3). According to EU LFS data the share of female care workers is highest in Poland (95.6) and lowest in the Netherlands, but even there 88.5% of all workers in care occupations is female. National data show similarly high levels of female employment in home care and in institutional care. In Germany and Spain, female employment is most concentrated in the occupational category of domestic workers, while in the Netherlands the share of female workers is highest among personal care workers and in Poland among nursing professionals.



Table 3. Share of female care employment (in %), EU LFS and national data, 2008

2008 <sup>1</sup>	EU LFS				National data		
	223	323	513	913	Total Care	LTC Home Care	LTC Institutional Care
GERMANY		85.1	91.0	93.5	90.2	87.6	84.7
THE NETHERLANDS	83.4	90.8	96.7	78.0	88.5	94.8	90.2
SPAIN	86.0		89.9	93.8	92.2	93.0	88.7
POLAND	99.1		92.3	94.3	95.6		

<sup>1</sup> or latest available

223: Nursing and midwifery professionals; 323: Nursing and midwifery associate professionals; 513: Personal care and related workers; 913: Domestic and related helpers, cleaners and launderers.

Source: EU LFS and national data, calculations FPB.

National data for Germany are from Schulz, 2010; for the Netherlands from van der Windt et al., 2009; for Spain from Miguélez et al., 2006.

In the Netherlands, Spain and Poland, the share of female care workers increased between 1993 (1996 for Poland) and 2008 (see Table 4), in Germany it slightly decreased. A persistent higher share of females in care jobs compared to the general workforce is a feature that is shared by all four countries. However, while the gap in female employment rates between care work and the total labour market diminished slightly in Germany and Spain, and stagnated in the Netherlands, it even increased in Poland.

Table 4. Trends in share of female workers, care occupations and total workforce, 1993-2008

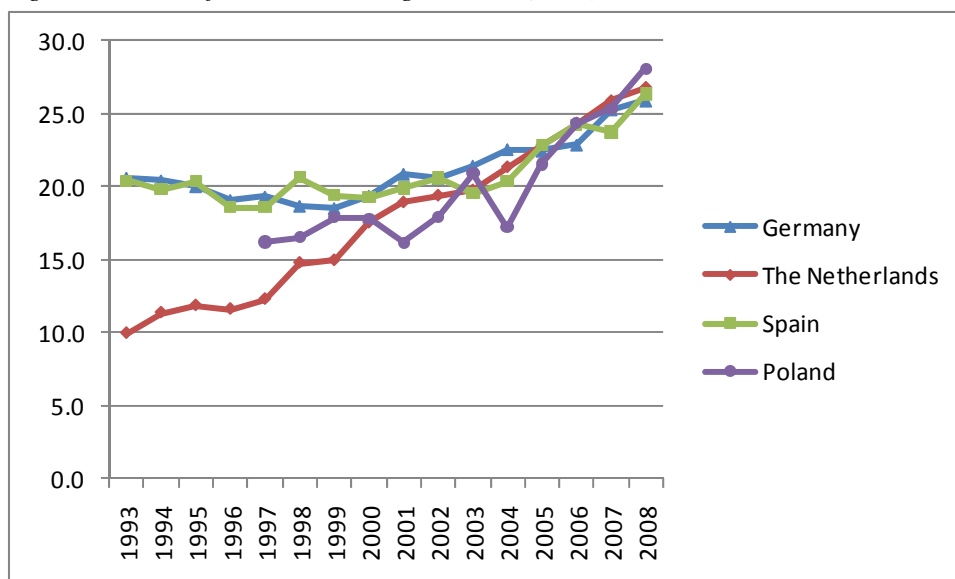
% of female workers	1993	1996	1999	2002	2005	2008
GERMANY						
Care occupations	90.9	90.2	90.5	89.9	90.4	90.2
Total workforce	41.7	42.8	43.6	44.7	45.7	45.9
THE NETHERLANDS						
Care occupations	82.2	86.5	88.6	88.5	88.4	88.5
Total workforce	39.6	40.8	42.5	43.9	45.0	45.9
SPAIN						
Care occupations	86.8	87.8	88.5	90.1	90.7	92.2
Total workforce	34.4	34.6	35.7	37.6	40.0	42.2
POLAND						
Care occupations		90.8	90.0	92.9	93.9	95.6
Total workforce		44.7	45.6	45.6	44.8	44.9

Sources: EU LFS and FPB calculations.

### 3.2.2 Share of older workers

Between 1993 and 2008, the share of care workers aged 50-64 increased in all countries, and converged to slightly over 25% in 2008 (see Figure 4). The increase was particularly strong in the Netherlands, where the older workers' share in care employment grew from 9.9% in 1993 to 26.8% in 2008.

Figure 4. Share of care workers aged 50-64 (in %), 1993-2008



Sources: EU LFS and FPB calculations.

In 2008, in Spain, the Netherlands and Poland, the proportion of older workers was higher in care jobs than in the total labour force. In comparison with the ageing of the total labour force, the ageing of the care workforce was particularly prominent in the Netherlands and Poland (see Table 5).

Table 5. Trends in share of older workers, care occupations and total workforce, 1993-2008

% of workers aged 50-64	1993	1996	1999	2002	2005	2008
GERMANY						
Care occupations	20.6	19.1	18.6	20.6	22.5	25.9
Total workforce	22.9	22.2	21.9	23.1	24.0	25.8
THE NETHERLANDS						
Care occupations	9.9	11.6	14.9	19.4	22.8	26.8
Total workforce	14.0	15.1	17.6	19.9	21.9	24.2
SPAIN						
Care occupations	20.4	18.6	19.4	20.6	22.8	26.3
Total workforce	17.7	19.6	18.8	18.9	19.5	21.4
POLAND						
Care occupations		16.2	17.9	17.9	21.6	28.1
Total workforce		17.1	18.2	17.7	19.7	22.0

Sources: EU LFS and FPB calculations.

### 3.2.3 Educational attainment

The figures in Table 6 indicate that considerable variation exists in the educational profile of the care workforce between the four countries. In 2008, around two thirds of all care workers had medium level educational qualifications in Germany and Poland. The share of medium-skilled care workers amounted to slightly more than 50% in the Netherlands. The Spanish care workforce is clearly more 'polarised', with a much higher share of low-skilled care workers than the other countries, but also relatively many high-skilled carers.

Table 6. Educational attainment, care occupations and total workforce, 1998 and 2008

Level of educational attainment (%),	1998				2008			
	DE <sup>1</sup>	NL	ES	PL	DE <sup>1</sup>	NL	ES	PL
CARE OCCUPATIONS								
Low	29.4	36.7	65.5	25.1	24.0	34.4	51.9	22.8
Medium	57.0	54.5	15.3	74.4	62.1	52.4	27.0	66.7
High	13.6	8.8	19.3	0.5	13.9	13.2	21.1	10.5
TOTAL WORKFORCE								
Low	17.7	30.0	56.8	16.0	13.9	26.3	41.4	8.6
Medium	57.3	46.4	17.8	71.6	59.9	42.4	24.4	67.6
High	25.0	23.6	25.4	12.4	26.2	31.4	34.5	23.8

<sup>1</sup> Figures for Germany are for 1999.

Sources: EU LFS and FPB calculations.

In all countries, the share of low-skilled workers decreased between 1998 and 2008. Although this decrease was particularly prominent in Spain (from 65.5% in 1998 to 51.9% in 2008), it still has a much higher share of low-skilled care workers than the other countries. The proportion of high-skilled carers rose in all countries, and especially in Poland, where nearly none of the care workers were high-skilled in 1998. Compared to the total workforce, the educational attainment level of care workers remains low in all countries.

### 3.2.4 Nationality

As is illustrated by Table 7, the share of foreign nationality care workers differs widely between the four countries. Differences in the share of migrant workers in the total economy are reflected in the share of migrant care workers. EU LFS data show a rapid increase in the share of foreign nationality care workers for Spain, from 2.3% in 1998 to 28.9% in 2008. Other sources report a similar increasing level of migrant carers for Spain. According to Lamura (2010), the number of permits for domestic workers to foreigners rose from 33,000 in 1990 to almost 230,000 in 2006. Miguélez et al. (2006) mention steeply rising shares of immigrant workers for several occupations in the elderly care sector: for geriatric nursing assistants from 3.7% in 2001 to 19.3% in 2005, and for home-help assistants from 3.9% to 15.0%, over the same period. Immigrant workers in the Spanish elderly care sector are mostly from Spanish speaking Latin American countries, and, like in the other countries, mostly women.

Table 7. Foreign nationality workers (in %), 1998 and 2008

Foreign nationality workers (%)	1998 <sup>2</sup>					2008					
	ISCO-88 OCCUPATIONAL CATEGORY <sup>1</sup>	223/323	513	913	Total Care	Total Labour Force	223/323	513	913	Total Care	Total Labour Force
Germany		5.3	7.1	22.2	11.9	7.9	4.4	6.9	26.2	13.2	8.6
The Netherlands		1.8	1.7	8.3	3.8	3.1	1.8	2.7	10.7	4.9	3.7
Spain		0.0	2.1	2.8	2.3	1.6	0.0	12.9	39.7	28.9	14.3
Poland <sup>3</sup>		0.0	0.0	0.9	0.5	0.1	0.0	0.4	0.1	0.1	0.2

<sup>1</sup> 223: Nursing and midwifery professionals; 323: Nursing and midwifery associate professionals; 513: Personal care and related workers; 913: Domestic and related helpers, cleaners and launderers

<sup>2</sup> Data relate to 1998 for Germany and Spain, to 1999 for The Netherlands and to 2004 for Poland

<sup>3</sup> For 2008, foreign nationality figures for Poland relate to only two groups: EU27 and Europe outside EU27, all other nationalities were recoded to “No Answer”

Sources: EU LFS and FPB calculations.

Starting from an already rather high level, in Germany the share of foreign nationality care workers increased slightly between 1998 and 2008, from 11.9% to 13.2%. According to statistics by the Statistisches Bundesamt, in 2006 18.3% of all elderly care workers were persons with an own migration experience, and this is more than for health care (11.5%), for social care (15.8%) and for the total economy (13.9); 6.1% of all elderly care workers had a foreign nationality and this is slightly higher than the share of foreign nationality workers in health care (4.5%) and in social care (5.3%) occupations, but less than for the total economy (7.0%) (Statistisches Bundesamt, 2009).

The Netherlands show a relatively small increase in foreign nationality care workers, from 3.8% in 1999 to 4.9% in 2008. In Poland, the share of migrant care workers was very small in 2004. For Poland, the figures for 2004 and 2008 are not comparable, due to changes in coding non-national/non-native workers. According to the ANCIEN country report (Golinowska, 2010), there is evidence that in Poland most employees in households of care dependent elderly persons are women from abroad, most often Ukrainians.

In general, the proportion of foreign nationality workers is higher in care occupations than in other occupations, but evolves in line with total labour market trends. Of all care-related occupational categories, ISCO category 913 – domestic and related helpers has the highest share of foreign nationality workers, and this holds for all countries considered except Poland in 2008.

### 3.2.5 Working time

In all four countries, the prevalence of part-time employment is much higher for care jobs than for the total labour market, but there are rather large between-country differences in part-time employment rates (see Table 8). There are relatively few part-time care workers in Spain and Poland. In Germany and the Netherlands, on the other hand, part-time arrangements are very common for persons employed in care occupations. In the Netherlands, which has by far the highest prevalence of part-time employment in the total labour market, more than 80% of care workers were in part-time employment in 2008. In line with general labour market trends, the share of part-time care workers increased over the last decade in the Netherlands, Germany and Spain. National reports on the long-term care sector confirm this increasing trend (see van der Windt et al. (2009) for the Netherlands; Schulz (2010) for Germany, and Miguélez et al. (2006)

for Spain). While in general, part-time employment slightly decreased in Poland, it increased for care workers. With the exception of Spain, part-time care employment was more prevalent in the 55-64 age category than for younger care workers, both in 1998 and in 2008.

*Table 8. Part-time work by age group (in %), 1998 and 2008*

Part-time work (%), by age group	1998		2008	
	Care Occupations	Total Workforce	Care Occupations	Total Workforce
GERMANY				
Age 15-24	14.4	9.6	28.0	19.8
Age 25-54	51.4	18.4	60.6	25.1
Age 55-64	69.4	21.1	70.1	27.3
Total	47.2	17.8	57.8	24.8
THE NETHERLANDS				
Age 15-24	74.9	58.0	87.1	69.8
Age 25-54	82.7	33.0	87.7	40.4
Age 55-64	91.1	37.5	90.3	48.9
Total	81.9	37.2	87.7	46.2
SPAIN				
Age 15-24	39.0	13.8	34.8	25.2
Age 25-54	29.1	7.0	38.4	11.0
Age 55-64	34.8	7.3	37.6	10.4
Total	30.7	7.8	38.1	12.2
POLAND				
Age 15-24	15.8	13.9	32.1	14.2
Age 25-54	11.4	6.5	14.5	5.7
Age 55-64	70.0	44.4	38.8	18.8
Total	12.7	9.2	17.2	7.7

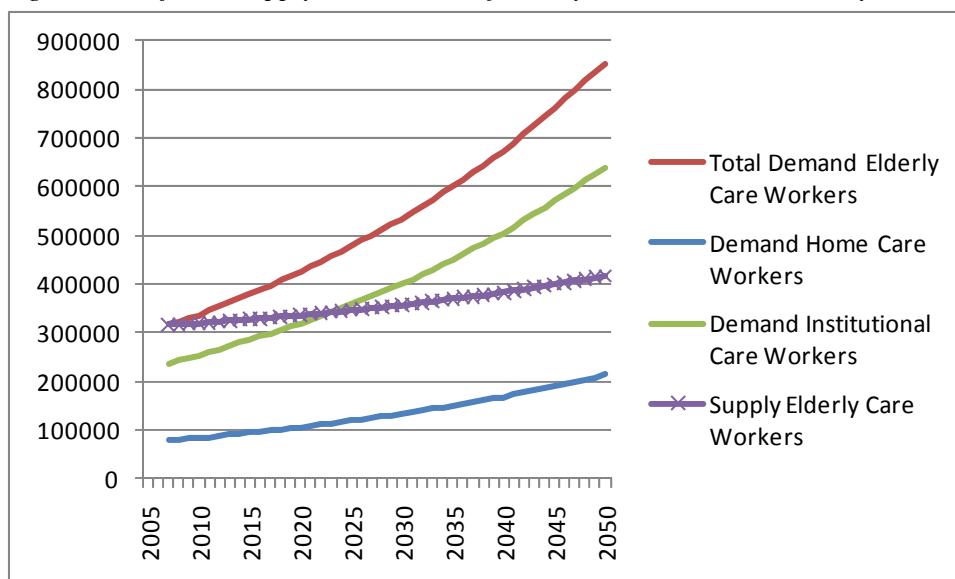
*Sources:* EU LFS and FPB calculations.

## 4. Projecting the future supply of long-term care workers

### 4.1 National models

For several countries, projection models of the future supply of LTC workers have been developed. For instance, Hackmann (2009) estimated future supply and demand for elderly carers (Altenpfleger) in Germany until 2050. Hackmann's projections are based on time series regression models, using time series data for the 1975-2007 period on supply and demand related factors influencing the number of elderly carers. In his base scenario, total demand for elderly carers will rise from 316,000 FTE in 2007 to 850,000 in 2050, while supply will expand up to 420,000 FTE only (see Figure 5). In alternative scenarios, Hackmann explored the gap-reducing effect of improving elderly carers' job retention.

Figure 5. Projected supply and demand of elderly care workers, Germany, 2007-2050



Source: Hackmann, 2009.

Several care labour market projection models have been developed for the Netherlands. Using a stock-flow cohort model, based on age-specific transition rates into and out of care work as observed in recent years, Zandvliet et al. (2009) estimated the future volume of labour supply in the health and social care sector up to 2025. These authors project an annual change in the social care labour supply of 0.1%, while demand would rise with 1.25%. Table 9 gives an overview of this and other health and social care labour market prognoses for the Netherlands.

Table 9. Health and social care labour market prognoses, the Netherlands

Model	Period	Indicator	Sector		
SEOR (ZANDVLIET ET AL., 2009)	2009-2025	Annual % change		Demand	Supply
			Total Economy	0.10	-0.10
			Health and Social Care	1.25	0.1
			Health Care	1.25	0.0
			Social Care	1.25	0.1
NETHERLANDS BUREAU FOR ECONOMIC POLICY ANALYSIS (BOS ET AL., 2004)	2002-2040	Annual % change		Employment	
				Lowest scenario	Highest scenario
			Total Economy	-0.5	0.4
			Health and Social Care	0.6	1.8
ARBEID IN ZORG EN WELZIJN 2009 (VAN DER WINDT, VAN DER VELDE & VAN DER KWARTEL, 2009) (review of care sector models)	2002-2040	Annual % change		Demand	
				Lowest	Highest
			Care	0.6	3.5

REGIONMARGE 2009 (VAN DER WINDT, SMEETS & ARNOLD, 2009)	2009-2013	Supply shortage by 2013 (in %, + = shortage, - = surplus)	Lowest scenario	Highest scenario	
			Institutional care	+1.8	+3.6
			Home care	-1.7	0.0

As neither sufficiently long time-series data on (determinants of) care employment, nor detailed data on transitions into and out of care work were readily available for Spain and Poland, it was not possible to build similar projection models for these two countries as the one available for Germany and the Netherlands, and compare their results. To have at least a basic comparative understanding of the likely future availability of care workers, we used a simple stock/flow cohort projection model, based on EU LFS data. The model and results are discussed in section 4.2.

#### 4.2 Evolution of the size and structure of the care workforce: a comparative perspective

Using data from the EU LFS on changes in the age and gender structure of employment in care occupations between 2001 and 2006, a stock/flow cohort projection was developed. This model allows us to examine differences in the potential impact of population ageing on the size and structure of the care workforce between the four countries, each representative of a different LTC system cluster. The methodology applied is similar to that of Simoens et al. (2005), in their projections of the nurse age structure for a number of OECD countries.

Projections of the age and gender structure of employment in care work are based on assumptions regarding the number of young people entering the care workforce and changes in the number of care workers from one age group to the next age group five years later. EU LFS data are used for these analyses and care work is defined in the same way as for the descriptive analyses of section 3, i.e. the following four ISCO-88 occupational categories are included: 513 – personal care and related workers; 223 – nursing and midwifery professionals; 323 – nursing and midwifery associate professionals; 913 – domestic and related helpers, cleaners and launderers.

The number of persons working in care and aged between 15 and 24 years is used as a proxy for the inflow of young workers into the care workforce. For this projection exercise it is assumed that this inflow as a percentage of the total population in the 15-24 age band will remain constant over the projection horizon. In WP 6 and WP 7, this assumption will be evaluated, and alternative assumptions could be explored.

Table 10 shows the inflow of young workers into the care workforce for the four countries considered.



Table 10. Care workers aged 15-24, by gender, absolute and relative numbers, 2006

Occupational category		Care workers aged 15-24					
		Absolute numbers				% of total care workers	% of total population aged 15-24
		223/323	513	913	All care occupations	All care occupations	All care occupations
GERMANY	Females	84,694	199,608	36,512	320,814	13.2	6.8
	Males	16,236	26,301	13,719	56,255	20.9	1.1
NETHERLANDS	Females	31,462	45,729	45,244	122,435	16.2	12.7
	Males	2,643	2,048	25,170	29,860	31.5	3.1
SPAIN	Females	14,591	50,949	70,088	135,629	7.6	5.4
	Males	451	3,697	5,635	9,782	5.7	0.4
POLAND	Females	1,718	5,429	12,357	19,503	3.0	0.6
	Males	0	1,601	3,393	4,994	10.3	0.2

Sources: EU LFS and Eurostat population data, and FPB calculations.

Changes in the age structure of female and male employment in care work from 2001 to 2006 are used to project the future age structure of the care workforce. Net inflow/outflow rates in five year age groups were calculated. They relate the absolute numbers of persons employed in care work in a particular age group in  $t$  (2006) to that of the younger age group in  $t-5$  (2001), as in the following example:

$$\text{Net inflow/outflow rate age group } 30 - 34 = \frac{\# \text{ employed age } 30 - 34_t}{\# \text{ employed age } 25 - 29_{t-5}}$$

Figures above 100 indicate a net inflow into the workforce, and figures below 100 indicate a net outflow. For this projection exercise these net inflow/outflow rates are assumed to remain constant over the projection period. Of course, that is a very strong assumption. It will be evaluated in WP 6 and WP 7, and alternative assumptions will be formulated.

Table 11 gives the net inflow/outflow rates between 2001 and 2006.

Table 11. Net inflow/outflow rates, all care occupations, 2001-2006

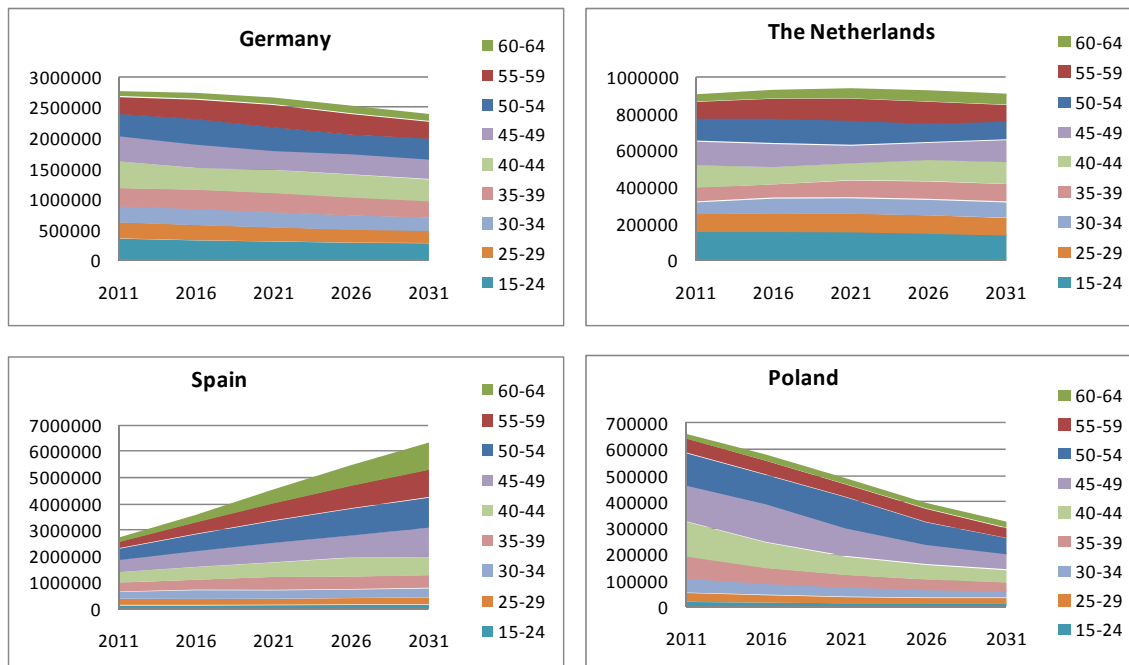
Net inflow/outflow rates for all care occupations		Age category							
		25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64
Germany	Females	64.1	110.5	122.3	114.2	97.2	101.2	86.9	33.0
	Males	99.1	64.5	116.9	108.3	50.8	84.0	81.2	37.0
	Total	67.7	103.1	121.6	113.6	93.6	99.9	86.5	33.3
Netherlands	Females	70.5	91.7	113.6	111.3	105.8	99.1	89.6	51.9
	Males	25.3	102.8	88.9	201.5	98.0	151.3	97.2	42.6
	Total	59.7	92.7	110.9	117.1	105.1	102.4	90.3	51.3
Spain	Females	160.7	147.6	145.1	151.8	153.7	137.4	102.1	121.6
	Males	161.1	189.4	75.4	159.6	96.6	88.9	126.5	96.4
	Total	160.7	151.8	137.0	152.6	147.4	132.3	104.0	119.5
Poland	Females	143.4	149.6	111.7	114.0	112.7	78.4	41.9	44.4
	Males	95.1	33.8	69.4	146.7	104.6	98.7	35.5	57.3
	Total	132.2	135.4	106.6	115.5	112.2	79.2	41.2	45.9

Sources: EU LFS and FPB calculations.

Remarkably high net inflow rates are reported for Spain. The total number of care occupations grew from 1,343,228 in 2001 to 1,957,457 in 2006, an increase of almost 46%. Banyuls et al. (2009) report an equally high growth rate for Spain in the number of jobs in residential, non-residential and home care services, from approximately 663,000 in 2000 to almost 1,150,000 in 2007, coinciding with a period of dramatic economic and employment growth, which came to an end in 2008 when the crisis gave way to a period of uncertainty. The authors mention three interrelated processes linked to the recent growth of the care sector in Spain: changes in family models, particularly with regard to the increasing integration of adult women in the labour market, the resulting income growth of middle class households, and the ageing population. Different kinds of services have been developed to meet the increasing demand: public sector services, initially regulated at municipal level and more recently through regional and national policies, private sector services, and informal sector services based on recruitment of carers by private individuals (Banyuls et al., 2009).

The net inflow/outflow rates are combined with Eurostat projections of the working age population. The projected numbers of care workers for the 2011-2031 period (see Figure 6) suggest that if current transition rates prevail, care employment is likely to evolve very differently in the four countries. In the Netherlands, the number of care workers is expected to remain more or less stable, while in Germany, it will decrease slightly. The projection results for Spain and Poland are completely different. The high net inflow rates for Spain are projected to translate into a more than doubling of the number of care workers between 2011 and 2031. In Poland, on the other hand, the number of care workers is projected to more than halve over the same period, and this is largely due to the substantially shrinking numbers of younger persons in the working age population and, as a consequence, a decreased inflow of young care workers.

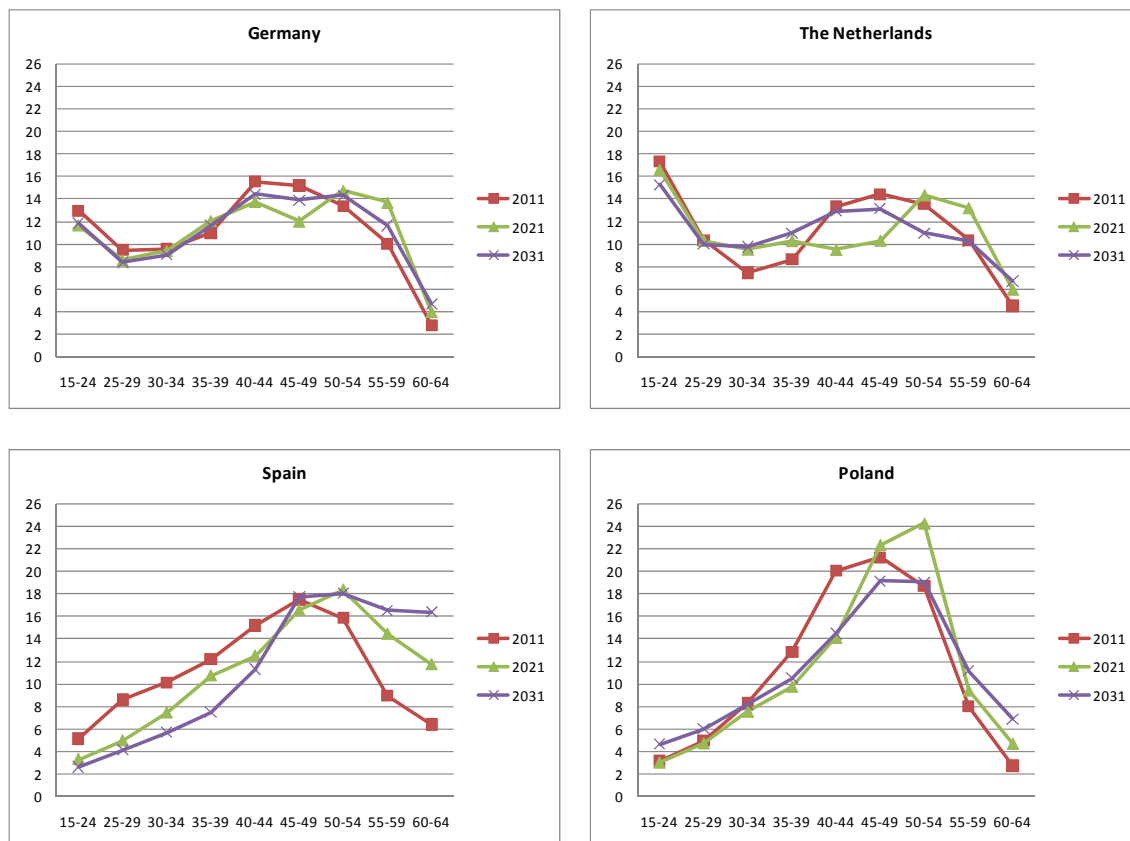
Figure 6. Projected size of the care workforce, 2011-2031



Sources: EU LFS and Eurostat population projections, and FPB calculations.

Figure 7 shows the projected age distributions of the care workforce from 2011 to 2031. The projections suggest that the ageing of the care workforce will be particularly pronounced in Spain, where the shares of care workers aged 55-59 and aged 60-64 will rise from 8.9% and 6.4% in 2011 to 16.5 and 16.4% respectively in 2031, a much stronger increase than is projected for the other countries, and the shares of younger care workers show a relatively strong decrease. In the Netherlands and Germany the share of care workers aged 50-64 is expected to peak by 2021 and to fall afterwards. The Polish care workforce, which was already made up of a high proportion of workers in the 45-54 age category, will experience a rather substantial ageing process in the years to come if current trends persist.

Figure 7. Projected age profile of the care workforce, 2011-2031



Sources: EU LFS and Eurostat population projections, and FPB calculations.

## 5. Concluding remarks

This report describes trends in the size and composition of the care workforce in four European countries that were selected in work package 1 of ANCIEN as representative of different types of LTC systems. By focussing on this limited set of countries and combining both international and national data, we have tried to overcome to a certain extent data comparability problems.

As could be expected, the size and structure of the formal care workforce clearly differ between countries belonging to different clusters of LTC systems. The Netherlands, belonging to a cluster of countries characterised by high public spending and low informal care use, has the highest formal care worker density according to EU LFS data, followed by Spain, which belongs to a type of countries characterised by a medium level of public LTC spending and high informal care use. In Germany and Poland, representative of two clusters that are both showing a low level of public spending and high informal care use, the density of formal care workers is

relatively low. The analyses also revealed remarkable differences with regard to the expansion or reduction of the care workforce in the recent past. In this regard, Spain and Poland differ greatly: between 1993 and 2008 total employment in care occupations more than doubled in Spain, whereas in Poland the number of persons employed in care occupations was lower in 2008 than it was a decade earlier. In the Netherlands and Germany the care workforce expanded, but at a far lower rate than that observed for Spain.

With regard to the structure of the care workforce, all four countries share some common features. Employment in care is predominantly female in all countries. According to EU LFS data for 2008 the share of female workers in care occupations ranged from 88.5% in the Netherlands to 95.6% in Poland, and national data show similarly high levels of female employment in home care and in institutional care. Another common feature is an increase of the share of care workers aged 50-64, which converged to slightly over 25% in 2008. On the other hand, considerable variation exists in the educational profile of the care workforce, the share of foreign nationality care workers, and part-time employment rates. The Spanish care workforce is clearly more 'polarised', with a higher share of both low-skilled and high-skilled workers than the other countries, but all countries witnessed an increase in the skill level of care workers. However, compared to the total workforce, the educational attainment level of care workers remains low in all countries. The share of foreign nationality care workers is highest in Spain. Germany ranks second, followed by the Netherlands and Poland. This ranking reflects differences in the share of migrant workers in the total economy. In all four countries, part-time employment is more prevalent among care workers than in the total labour market. Large country differences exist in part-time employment rates, again reflecting general labour market patterns.

Several projection models of LTC utilisation or expenditures assume that the supply of formal care will adjust to match demand, and that demand will be no more constrained by supply in the future than in the base year. The projection exercise in this report, using a stock-flow cohort projection method, has illustrated that, if current participation trends prevail, care employment is likely to evolve very differently in the four countries due to demographic changes. Projection results differ most for Spain and Poland. Whereas for Spain, the number of care workers is projected to more than double over the 2011-2031 period, it is projected to more than halve for Poland. In the Netherlands, the number of care workers is expected to remain more or less stable, while in Germany, it will decrease slightly. All in all, the situation seems to be least favourable in Poland. First, Poland belongs to the cluster of countries that was ranked as the least attractive from the point of view of elderly persons in need of care. Second, it is at risk of experiencing a sharp decrease in the supply of formal care workers in the years to come.

Of course, the assumption that observed trends in care employment will continue into the future is a very strong one. It is, for instance, not likely that care employment in Spain will continue to increase over the next 20 years at a similarly strong rate, as was observed during the 2001-2006 period. In WP 6 and WP 7, the assumption that recent trends will continue will be evaluated, and alternative assumptions will be formulated. The resulting trends in care staff availability will be confronted with estimates of future care needs (from WP 2), to identify potential future imbalances.

## References

- Banyuls, J., F. Miguelez and A. Recio (2009), “Job Quality: The Experience of Construction and Care Sectors in Spain”, presentation at the Regulating for Decent Work Conference, Geneva, 8-10 July.
- Bos, F., R. Douven and E. Mot (2004), *Vier toekomstscenario's voor overheid en zorg*, Centraal Planbureau, Den Haag.
- Bosworth, D.L., R.A. Wilson and B. Baldauf (2007), *Who Does Workforce Planning Well?: A Rapid review for the Workforce Review Team*, Warwick Institute for Employment Research, Coventry.
- Escobedo, A., E. Fernandez and D. Moreno (2002), *Care Work in Europe: Current Understandings and Future Directions. Surveying Supply, Demand and Use of Care*, Fundacion CIREM, Barcelona.
- European Commission (2009), *Employment in Europe 2009*, Directorate-General for Employment, Social Affairs and Equal Opportunities, European Commission, Brussels.
- Fujisawa, R. and F. Colombo (2009), *The Long-Term Care Workforce: Overview and Strategies to Adapt Supply to a Growing Demand*, OECD Health Working Papers No. 44, OECD, Paris.
- Golinowska, S. (2010), *The System of Long Term Care in Poland*, CASE and UJ Collegium Medicum, Warsaw (<http://www.ancien-longtermcare.eu/node/27>).
- Hackmann, T. (2009), *Arbeitsmarkt Pflege: Bestimmung der künftigen Altenpflegekräfte unter Berücksichtigung der Berufsverweildauer*, Forschungszentrum Generationenverträge, Albert-Ludwigs-Universität Freiburg, Freiburg.
- Hancock, R., R. Wittenberg et al. (2006), *Paying for Long-Term Care for Older People in the UK: Modelling the Costs and Distributional Effects of a Range of Options*, PSSRU, Kent.
- Korczyk, S. (2004), *Long-Term Workers in Five Countries: Issues and Options*, American Association of Retired Persons (AARP), Washington, D.C.
- Kraus et al. (2010), *A Typology of Systems of Long-Term Care in Europe – Results of Work Package 1 of the ANCIEN Project*, Institute for Advanced Studies, Vienna.
- Lamura, G. (2010), “The Role of Migrant Work in the LTC Sector: Opportunities & Challenges”, presentation at the Long-Term Care in Europe – Discussing Trends and Relevant Issues Conference, Budapest, 22-26 February 2010 ([http://www.euro.centre.org/data/1267541472\\_78930.pdf](http://www.euro.centre.org/data/1267541472_78930.pdf)).
- Miguélez, F., A. Lope and I. Olivares (2006), *The Elderly Care Sector in Spain*, DYNAMO Sector Study, QUIT Working Paper Series, Working Paper No. 11, Universitat Autònoma de Barcelona, Barcelona.
- O'Brien-Pallas, L., A. Baumann, G. Donner, G. Tomblin Murphy, J. Lochhaas-Gerlach and M. Luba (2001a), “Forecasting Models for Human Resources in Health Care”, *Health and Nursing Policy Issues*, Vol. 9, No. 1, pp. 120-129.
- Schulz, E. (2010), *The Long-Term Care System in Germany*, Deutsches Institut für Wirtschaftsforschung, Berlin.
- Simoens, S., M. Villeneuve and J. Hurst (2005), *Tackling Nurse Shortages in OECD Countries*, OECD Health Working Papers No. 19, OECD, Paris.

- Simonazzi, A. (2009), *New Skills for New Jobs? Status Quo and Perspectives for the Elderly Care Sector in Europe*, European Employment Observatory (EEO) Thematic Paper, Fondazione Giacomo Brodolini, Rome.
- Statistisches Bundesamt (2009), *Beschäftigte im Gesundheitswesen, Gesundheitsberichterstattung des Bundes, Heft 46*, Robert Koch-Institut, Berlin.
- van der Windt, W., R. Smeets and E. Arnold (2009), *Regiomarge 2009: De arbeidsmarkt van verpleegkundigen, verzorgenden en sociaalagogen 2009-2013*, Utrecht: Prismant.
- van der Windt, W., F. van der Velde and A. van der Kwartel (2009), *Arbeid in Zorg en Welzijn 2009*, Utrecht: Prismant.
- Wanless, D. (2006), *Securing Good Care for Older People: Taking a long-term view*, London: King's Fund.
- Zandvliet, K., J. de Koning and T. Berretty (2009), *Uitwerken 0-scenario arbeidsmarkt zorg*, Rotterdam: SEOR.

# ANCIEN

## Assessing Needs of Care in European Nations



*FP7 HEALTH-2007-3.2-2*

**L**aunched 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, epidemiologic 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.

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 will 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 backbone 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. 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.

*For more information, please visit the ANCIEN website (<http://www.ancien-longtermcare.eu>).*