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PERFORMANCE OF LONG-TERM CARE SYSTEMS IN EUROPE

ESTHER MOT AND ANIKÓ BÍRÓ

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Abstract

The evaluation of long-term care (LTC) systems carried out in Work Package 7 of the ANCIEN project shows which performance criteria are important and – based on the available information – how European countries score on those criteria. This paper summarises the results and discusses the policy implications. An overall evaluation was carried out for four representative countries: Germany, the Netherlands, Spain and Poland. Of the four countries, the Dutch system has the highest scores on quality of life of LTC users, quality of care and equity of the LTC system, and it performs the second-best after Poland in terms of the total burden of care (consisting of the financial burden and the burden of informal caregiving). The German system has somewhat lower scores than the Dutch on all four dimensions. The Polish system excels in having a low total burden of care, but it scores the lowest on quality of care and equity. The Spanish system has few extreme scores. Some important lessons are the following. The performance of a LTC system is a complex concept where many dimensions have to be included. Specifically, the impact of informal caregiving on the caregivers and on society should not be forgotten. The role of the state in funding and organising LTC versus individual responsibilities is one of the most important differences among countries. Choices concerning private funding and the role of informal care have a large effect not only on the public expenditures but also on the fairness of the system. International research into the relative preferences for the different performance criteria could produce a sound basis for the weights used in the overall evaluation.

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ESTHER MOT AND ANIKÓ BÍRÓ*

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1. Introduction

Evaluation of long-term care (LTC) systems is a relatively underdeveloped but important subject. Countries such as Sweden, Denmark and the Netherlands were already spending around 4% of their GDP on LTC in 2010.[1] While many new member states spent less than 1% of GDP in 2010, all European countries expect a large increase in LTC expenditures over the coming decades because of population ageing. Ageing will not only make the expenditures rise, it will also increase the importance of having a well-organised LTC system.

The aim of work package 7 (WP7) of ANCIEN is to assess the performance of LTC systems. We attempt to make progress with this complex subject to the extent that the available data permit. The ANCIEN project selected a set of criteria against which the performance of LTC systems can be evaluated. The information about performance is based on previous ANCIEN work packages, external sources and additional analyses within WP7. This Policy Brief describes the performance criteria and summarises the results of the additional analyses regarding: the quality of life of LTC users, equity of LTC systems and projections of LTC expenditures. It also presents results for other important aspects of performance (such as quality of care and the burden of informal caregiving). The research report on WP7 (Mot et al., 2012) presents an overview of available information on performance criteria for all countries studied in ANCIEN. This Policy Brief summarises the final evaluation that concentrates on four representative countries, for which we have more complete information on performance. The selection of these countries took place in WP1, where typologies of LTC systems were developed (see Kraus et al., 2010). We selected Germany, the Netherlands, Spain and Poland to represent each of four types of LTC systems. WP2 and WP6 of ANCIEN developed models of need and use of LTC for those four countries. WP2 models and projects the number of persons with one or more limitations in activities of daily living (ADL). Many analyses in ANCIEN thus concentrate on the more severe limitations. Accordingly, WP6 analyses the use of personal and nursing care.

2. Evidence and analysis

Performance framework

We studied the criteria that international organisations and national governments use for the performance of LTC systems. From those criteria, we selected criteria that are strongly affected by the LTC system and capture all important aspects of these systems without too much overlap. Also considering data availability, this yielded the following set of core criteria for the performance framework:

1. The quality of life of (potential) LTC users.
2. The quality of care
3. The total burden of care: financial burden and the burden of informal caregiving
4. Equity of the LTC system
5. Choice

* Esther Mot is senior researcher in the Netherlands Bureau for Economic Policy Analysis (CPB). Anikó Bíró is a Lecturer in the School of Economics, The University of Edinburgh.

[1] See European Commission and the Economic Policy Committee (2012).

The total burden of care consists of two aspects: expenditure on paid care (the financial burden), but also the resources that are supplied by unpaid informal caregivers. These caregivers spend time and effort on LTC. Depending on the circumstances, informal caregiving can lead to labour market problems and mental health problems. It is thus important not to neglect the burden of informal caregivers in determining the total burden of care.

Below, we describe how European countries score on these criteria, followed by the overall evaluation.

Quality of life of LTC users

To study the impact of LTC systems on the quality of life of users, we analyse the experience of users on three aspects of the LTC system on which we have data via the international SHARE database. These aspects are the probability that a person receives help in case of limitations (in mobility, iADL or ADL), the probability that this help is sufficient, and the difference between the life satisfaction of people with and without limitations in different countries. Via this latter aspect, we aim to measure the properties of the LTC system on which we do not have data, such as control over daily life and the dignity of older persons with limitations. The main idea is that the difference in life satisfaction of people with and without limitations is an approximation of these unobserved properties once we control for the health status of people, the country of residence, whether people receive help and the sufficiency of this help (we also control for many other characteristics and the reporting style of respondents). An important caveat to keep in mind is that the SHARE database only includes persons who live at home.

Table 1 presents the results. For the probability of receiving help and the probability of the help meeting the needs all the time, we show the impact that living in a specific country has after correction for the usual socio-economic variables, household situation, limitations and health. This represents the effect of the LTC system by country on the probability of receiving help for older persons with limitations and – given that they receive help – the probability of the help meeting their needs all the time. The results presented are differences in probabilities compared to Germany (the reference country).

Table 1. Experience of LTC users and ranking of countries

Country name	AME on probability of help*	Rank help	AME on sufficiency of help*	Rank sufficiency	Unobserved properties	Rank unobserved properties
Austria	-0.112	6	0.028	6	-0.403	12
Belgium	-0.094	3	0.042	5	0.230	3
Czech Republic	-0.06	2	0.042	4	-0.506	13
Denmark	-0.153	7	0.008	7	-0.185	5
France	-0.175	9	-0.034	9	0.694	1
Germany	0	1	0	8	-0.275	11
Greece	-0.334	12	-0.066	12	0.047	4
Italy	-0.303	10	0.132	2	-0.239	10
Netherlands	-0.096	4	0.068	3	-0.206	7
Poland	-0.374	13	-0.057	11	0.270	2
Spain	-0.311	11	-0.124	13	-0.207	8
Sweden	-0.154	8	-0.051	10	-0.199	6
Switzerland	-0.109	5	0.160	1	-0.227	9

* AME stands for average marginal effect.

Source: Faber & Mot (2012).

The table shows that the probability of receiving help differs widely among countries; it is the highest in Germany and the lowest in Poland, where this probability is 37.4% point lower than in Germany.

The probability of the help meeting the needs all the time is the highest in Switzerland, 16% point higher than in Germany.[2] Among the countries studied in the ANCIEN project, the probability of the help meeting the needs all the time is the highest in Italy and the lowest in Spain. The fifth column in the table represents the impact of unobserved characteristics of the LTC system on life satisfaction. These unobserved characteristics have the most favourable impact in France and the least favourable impact in the Czech Republic.

Table 1 also shows how the countries rank on the three aspects. Ranking the countries is an accessible way of presenting the results, but differences between countries can be small and non-significant. Table 2 presents groups of significantly differing countries for each of the three aspects. The classification in groups is translated into a description of the relative position of a country. For example, for the probability of the help meeting the needs all the time, we distinguished three groups of countries. The sufficiency of the help in these three groups is indicated as high, medium and low. The two tables show that many countries score high on some aspects and not so high on others. Germany, for example, scores very high on persons with limitations getting help, but the scores for the help meeting the needs and the unobserved properties of the LTC system are much lower. The Netherlands scores high on the sufficiency of the help, but the results are mediocre for the other aspects. Poland scores low on all aspects except the unobserved properties of the LTC system, where it scores medium high. It is important to note that Poland has a high number of people with a limitation and this may impact the results. Spain scores low or medium-low on all aspects. However, Spain carried out LTC reforms since the data were collected in 2006-07, which on the one hand had the potential to improve the score, but on the other hand were severely hindered by budget cuts because of the economic and financial crisis. Switzerland, Belgium and France score consistently high on all three aspects.

Table 2. Relative experience of LTC users for groups of countries

Country name	Level of help	Level of sufficiency	Unobserved system properties
Austria	medium high	medium	medium low
Belgium	medium high	medium	medium high
Czech Republic	medium high	medium	low
Denmark	medium	medium	medium
France	medium	medium	high
Germany	high	medium	medium low
Greece	medium low	low	medium
Italy	medium low	high	medium low
Netherlands	medium high	high	medium low
Poland	low	low	medium high
Spain	medium low	low	medium low
Sweden	medium	low	medium low
Switzerland	medium high	high	medium
Number of groups	5	3	5

Source: Faber & Mot (2012).

We reach several conclusions. For receiving help with their limitations, older persons living at home are best off in Germany out of the 13 countries in our sample. Given that help is available, the sufficiency of the help is best ensured in Switzerland, Italy and the Netherlands. The unobserved properties of the LTC system are most favourable in France. An older person who considers all three aspects of the LTC experiences important might be best off living in Belgium, Switzerland or France.

[2] As a non-EU country, Switzerland is not included in the set of countries to be studied in ANCIEN, but we included the SHARE data on Switzerland for additional comparison opportunities.

Quality of care

The Eurobarometer 67.3 survey provides a general measure of the quality of LTC services for a wide range of European countries. The respondents were asked to evaluate the quality of care services for dependent people in their home and the quality of nursing homes. Table 3 shows the average of the reported indicators by country. The indicators are scaled so that 1 corresponds to very bad quality, and 4 corresponds to very good quality. Based on these indicators, only a relatively small variation can be observed in the quality of services across the analysed countries. According to these statistics, the quality of services is generally low in the new member states, whereas it is relatively high in Austria, Germany, France, the Netherlands and Sweden.

Table 3. Quality indicators (countries sorted by nursing home quality)

	Eurobarometer quality (1-4)	
	At home	Nursing homes
France	3.08	3.06
Sweden	2.94	2.92
Austria	2.95	2.81
Netherlands	2.92	2.79
Slovenia	2.82	2.75
Spain	2.8	2.74
Finland	2.72	2.74
United Kingdom	2.83	2.7
Germany	2.82	2.58
Latvia	2.52	2.56
Hungary	2.5	2.56
Slovakia	2.53	2.52
Italy	2.39	2.46
Estonia	2.51	2.43
Poland	2.38	2.28

Source: Bíró (2012), based on Eurobarometer 67.3.

The total burden of care

The burden of formal caregiving

The predicted financial burden of care in 2040 is an indicator for the sensitivity of the LTC systems to ageing. We measure this burden by the predicted expenditures on residential and formal home care relative to GDP in 2040. Tables 4 and 5 show the predicted public and private expenditures. These projections are produced by multiplying the projected numbers of care users (from WP6 of ANCIEN)[3] with average costs per user. Details on the methodology can be found in Geerts &Willemé (2012a). Tables 4 and 5 also show the results of a simulation exercise designed to disentangle the effect of demographic factors (differences in age and gender composition) and disability from other influencing factors. Thus we apply the population structure of the "country depicted in the row", but use the usage probabilities and unit costs of care of the "country in the column". These simulations are based on the DELAY bio-demographic scenario of Bonneux et al. (2012), and it is assumed that the unit costs of care evolve in line with the GDP per hour worked, reflecting the highly labour intensive character of LTC services. Missing simulation results in the tables are due to the lack of appropriate data.

[3] WP6 assumes that care use will develop in line with background characteristics such as age, gender, disability and household composition. Given these characteristics, the pattern of care use in each country is assumed to be constant.

Table 4. 2040 public LTC expenditures as percentage of GDP (row country: demography)

Usage and unit cost country							
	DE		ES		NL		PL
	Formal home care	Residential care	Formal home care	Residential care	Formal home care	Residential care	Residential care
DE	**0.6**	**0.932**	0.191	0.467	1.526	4.794	0.035
ES	0.497	0.854	**0.165**	**0.383**	1.285	3.885	0.03
NL	0.391	0.532	0.126	0.339	**1.014**	**3.325**	0.028
PL	1.231	2.64	0.427	0.762	2.829	10.01	**0.087**

Source: Bíró (2012), simulation results supplied by FPB.

Based on Table 4, the projected Dutch public expenditures on residential and formal home care are the highest among the four analysed countries (4.3% of GDP). The second highest expenditures are projected for Germany (1.5% of GDP in 2040). However, the simulated expenditures are considerably higher if the Polish demographic structure and disability are applied to the usage rates and unit costs of the Netherlands (12.8% of GDP). The predicted public expenditures in the Netherlands are high because of the high utilisation of formal LTC services, but still these expenditures are tempered by the relatively favourable demographic structure of the country.

The predicted private expenditures on residential and formal home care (Table 5) are lower than the public expenditures, but the pattern of the differences among the countries is similar to the public expenditures. The main difference is that the predicted total private expenditures relative to GDP are similar with using the German or the Dutch usage rates and unit costs. Again, applying the Polish demographic structure and disability strongly increases the predicted expenditures.

Table 5. 2040 private LTC expenditures as percentage of GDP (row country: demography)

Usage and unit cost country						
	DE		ES		NL	PL
	Formal home care	Residential care	Formal home care	Residential care	Total	Residential care
DE	**0.146**	**0.508**	0.05	0.23	0.741	0.005
ES	0.121	0.526	**0.044**	**0.213**	0.614	0.005
NL	0.095	0.29	0.033	0.188	**0.501**	0.004
PL	0.301	1.441	0.112	0.423	1.444	**0.013**

Source: Bíró (2012), simulation results supplied by FPB.

Although due to the lack of appropriate data we do not have predictions for the expenditures on formal home care in Poland, based on the available evidence we can still assume that those expenditures are of similarly small magnitude as the expenditures on residential care. Based on these considerations the Netherlands is estimated to face the highest expenditures on formal LTC within the next 30 years, followed by Germany, Spain, and Poland. The Polish demographic structure and disability rates increase the predicted expenditures to a high extent, but this effect still leaves the public and private expenditures small in Poland, mainly due to the small usage rates.

The burden of informal caregiving

To give an idea of the burden of informal caregiving under conditions of ageing, WP7 generates an indicator of the demand for informal caregivers in 2040. This is based on the number of informal caregivers giving personal care in 2010, as reported by Pickard and King (2012b). We assume that the ratio of informal caregivers relative to the disabled people aged 65 and above remains constant. Using the projections of Bonneux et al. (2012) (DELAY scenario) on disabilities, we can thus generate an estimate of the future number of caregivers needed. Table 6 presents the ratio of the so predicted number of caregivers relative to the predicted 50+ population in 2040. The demand for informal

caregivers relative to the 50+ population will be highest in Spain and Germany. In comparison, the demand in the Netherlands for informal personal care will be relatively very low.

Table 6. Predicted demand for informal caregivers in 2040

	Caregivers per 50+ population
	Constant ratio caregiver/disabled (%)
Germany	7.14
Netherlands	2.07
Poland	5.92
Spain	7.77

Source: Bíró (2012), based on Pickard & King (2012b) and Bonneux et al. (2012).

Equity of the LTC system

WP7 of ANCIEN analyses equity in the LTC systems of the representative countries using two equity concepts: horizontal and vertical equity (see Comas-Herrera, 2012). Horizontal equity requires the like treatment of like individuals. For example, persons with the same resources should contribute to the funding of LTC to the same extent. Vertical equity requires the unlike treatment of unlike individuals. An example is that persons with higher needs should receive more LTC services.

These concepts of horizontal and vertical equity were applied to two dimensions of LTC systems: revenue raising and resource allocation.

Revenue-raising

Two aspects are particularly important for equity in revenue-raising: the extent of risk pooling and the progressivity of funding. The degree of risk pooling (or level of coverage of the dependency risk) is a key determinant of the performance of the system in terms of horizontal equity. The lower the degree of risk pooling, the more likely it is that people with higher levels of need (and possibly lower levels of resources) have to contribute higher resources to their care. Countries with a low degree of risk pooling tend to rely greatly on informal care. The degree of progressivity of the way in which resources are raised will affect the performance of the system in terms of vertical equity. Where most resources are raised as informal care, or with forms of payment that are regressive, the system will perform worse in terms of vertical equity.

Table 7 presents an assessment of risk pooling and progressivity for the four representative countries. The Netherlands scores best on both aspects, so it has the highest equity in revenue raising of these four countries.

Table 7. Equity in revenue-raising

	Germany	**The Netherlands**	**Poland**	**Spain**
Degree of risk pooling and coverage	Medium high	Very high	Low	Medium low
Progressivity	Medium	High	Low	Medium low

Source: Comas-Herrera (2012).

Resource allocation

Important aspects affecting the equity of resource allocation are equity of access to the care system and equity in the level and mix of services that persons receive relative to their needs. Table 8 presents the assessment of these two aspects for the four countries, both concerning horizontal and vertical equity. Access based on needs and not on means testing promotes horizontal equity. Both Germany and the Netherlands score high in this respect.

However, national eligibility criteria with strict thresholds for entry to the system, as used in Germany, lower the vertical equity, resulting in Germany scoring less well on vertical equity. Both Poland and Spain score relatively low on equity in resource allocation compared to the Netherlands and Germany.

Table 8. Equity in resource allocation: main characteristics

	Germany		**The Netherlands**		**Poland**		**Spain**	
	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical
Equity of access: means vs. needs testing	High	Medium	High	High	Low	Low	Medium	Low
Equity in levels and mix of services relative to needs	High	Low	High	High	Medium low	Low	Low	Low

Source: Comas-Herrera (2012).

Of the four countries, the Netherlands performs well in terms of equity, both horizontal and vertical. Germany's system performs well on horizontal equity but less so on vertical equity. The Spanish system's reforms of 2006 introduced new features that potentially increased the equity of the system, but the system has not been fully implemented and major cuts have undermined its potential to deliver in terms of equity. The Polish system is characterised by a very small formal care sector and universal care-related cash benefits to everyone over 75 (regardless of the need for care) which does not perform well in terms of vertical equity.

Choice

Information on choice in the ANCIEN countries can be found in Mot et al. (2012). This information was collected in WP1 and concerns the choice of provider (in institutions and at home) and the availability of cash benefits. As an indicator of choice we simply add up the available information on the freedom of choice of providers and on the availability of benefits in cash. This gives an equal choice score for all four representative countries, and thus we cannot differentiate them according to this dimension in the final evaluation. Due to the equal values, omitting this category from the final ranking does not influence the results.

Overall evaluation

We evaluate the LTC systems of the four representative countries using the core criteria from our performance framework (excluding choice because of the equal scores). Due to the complex nature of the LTC systems, such an overall evaluation exercise is necessarily based on a set of simplifying assumptions. An important simplification is that we have to make assumptions on the weights of the different performance dimensions in the overall evaluation, since there is no research that we can base those weights on.

To give an overall evaluation of the performance of the LTC systems, we construct aggregate indicators for the selected five performance criteria that are directly comparable. For quality of life, quality of care, equity and total burden, we start by aggregating the sub-dimensions (e.g. the three aspects of quality of life) to one indicator per performance criterion, assuming equal weights for each of the sub-dimensions. Following that, we standardise the values for each indicator (with a mean of zero and standard deviation of one). All details can be found in Bíró (2012). We also ensure that higher values always imply better performance, thus under standardisation we reverse the sign of the total burden indicator. Table 9 presents the original indicator values for the four countries as described above, as well as the standardised values.

Table 9. Evaluation of LTC systems in the four representative countries, based on the core criteria

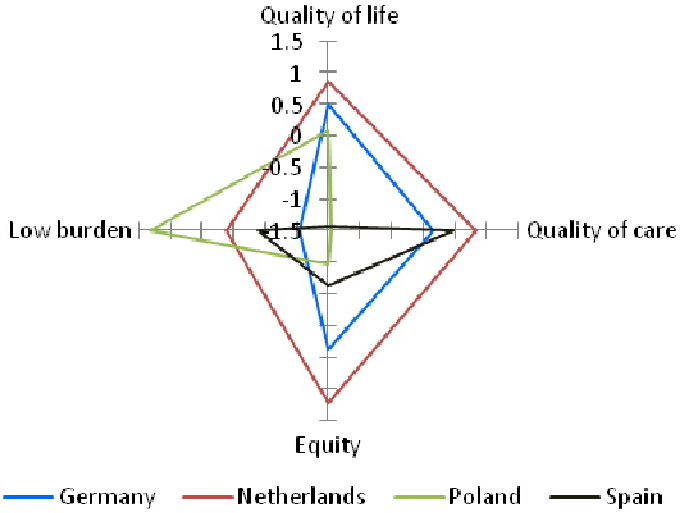
Original values			Quality of life	Quality of care (1-4)		Equity (1-5)	Total burden		Choice (0-4)
	AME on help	AME on help meets needs	Unobserved properties		Revenue raising	Resource allocation	Formal (%GDP)	Informal (% 50+)	
DE	0	0	-0.275	2.699	3.5	3.5	2.186	7.14	3
NL	-0.096	0.068	-0.206	2.855	5	5	4.84	2.07	3
PL	-0.374	-0.057	0.27	2.33	1	1.25	0.1	5.92	3
ES	-0.311	-0.124	-0.207	2.772	2	1.5	0.805	7.77	3

Standardised values (higher score - better performance)						
	Quality of life	Quality of care	Equity	Total burden	Mean score	Mean score, burden of informal caregiving excluded
DE	0.494	0.151	0.374	-1.044	-0.006	0.23
NL	0.851	0.825	1.229	0.106	0.753	0.385
PL	0.078	-1.442	-0.98	1.324	-0.255	-0.361
ES	-1.423	0.466	-0.624	-0.382	-0.491	-0.255

Source: Bíró (2012).

Figure 1 presents the standardised information from Table 9 in a visual form.

Figure 1. Standardised performance scores of LTC systems on four dimensions



The Dutch system has the highest scores on all dimensions except the total burden of care, where it has the second-highest score after Poland. The Dutch score on total burden is based on a relatively very high future expenditure on formal care combined with a low burden of informal caregiving. In the performance of the Dutch system we see to some extent the trade-off in action between the total burden of care and the other dimensions: equity and quality can be relatively high because the Netherlands spends a lot on publicly financed formal care. The high reliance on formal care, combined with the ageing of the large post-war baby boom generation in the Netherlands, leads to high expenditure projections compared to other countries. However, the total burden of care is lower than

in Germany and Spain because of the relatively low use of informal care.[4] Over the four dimensions taken together, the Dutch system seems to score relatively well.

The German system has somewhat lower scores than the Dutch on all four dimensions. For quality of life and equity, the German system ends up in the second place after the Dutch system. Here we should keep in mind that these dimensions themselves are multi-dimensional. The German system is somewhat less equitable than the Dutch mainly because of the large role of informal care and the exclusion of people with lower care needs from the publicly financed system. Remarkably, the German system has the least favourable score of the four systems on the total burden of care. The financial burden in Germany is a lot lower than in the Netherlands, but still considerably higher than in Spain and Poland, while the burden of informal caregiving in Germany is comparable to the high burden in Spain. Even though Germany carries the highest burden of LTC according to our scores, it does not have the best results on quality and equity. One of the reasons is that the high burden consists for a considerable part of the burden of informal caregiving, and this is a less equitable way of organising the LTC system.

The Polish system excels in having a low total burden of care. Naturally, considering the relation among the dimensions, this is likely to have a negative impact on other dimensions of performance. In Poland, we see a clear trade-off between the burden of care and the other dimensions. The Polish system scores lowest on quality of care and equity. Concerning indicators of quality of life for LTC users it ends up in the third place, because of the good unobserved properties of the Polish LTC system. The probability of receiving help with limitations is rather low in Poland, while at the same time the level of disability is high compared to other countries.

The Spanish system has few extreme scores. It scores lowest on indicators for quality of life of LTC users, but we have to keep in mind that results may have changed since the data collection for the second wave of SHARE because of the partial introduction of a new LTC system in Spain. Recently, the economic and financial crisis led to large budget cuts on publicly financed LTC. For quality of care, the Spanish system ranks in second place. For equity and the total burden of care, the Spanish system ends up in third place.

If we just take a simple average over the four key dimensions despite the fact that we have no information on the preferences, we see that the Netherlands scores first, despite the high total burden of care. It is followed by Germany in second place, Poland in third place and Spain in the fourth place. If the burden of informal caregiving is omitted from the overall evaluation, then Germany performs relatively better, and Spain performs better than Poland. Thus, our results are sensitive to the inclusion of the burden of informal caregiving.

Naturally, we cannot conclude from these overall scores that every country would be better off by implementing the highest scoring system. This is not just because the weights are unknown and preferences differ among countries, but also because a system as a whole is unlikely to be transferable to other countries. Its functioning will depend in part on a shared history and culture in a country and specific institutions. It is more reasonable not to attempt to copy other national systems, but to be inspired by them, especially concerning aspects where they score well. The lessons learned from other systems can be used, for example, to adapt aspects of a national system that are seen as unsatisfactory within the country itself.

3. Policy implications and recommendations

A number of lessons emerge from our research. First of all, the performance of a LTC system is a complex multi-faceted concept. The experience of people with limitations has many relevant aspects, which in turn have different dimensions. An example is the fact that a LTC system can score differently on horizontal and vertical equity. To complicate matters further, the performance of the system is not just important for people with limitations, but also for their families, potential caregivers

[4] This is under the assumption that the financial burden of care and the burden of informal caregiving have equal weights.

in general and society at large. Ideally, all such aspects are included in an evaluation. The impact of informal caregiving on the caregivers and on society (e.g. the labour market) should not be forgotten. In the evaluation for the four representative countries, inclusion of informal caregiving considerably impacts the results. Since LTC is usually at least partially publicly financed, the LTC system has implications for the future sustainability of public finances**.** However, a complete analysis of sustainability also requires a consideration of other age-dependent public expenditure categories (such as education, pension and healthcare) and of the impact of ageing on public revenues. This was outside the scope of ANCIEN. In WP7 we restricted the financial burden part of the analysis to considering projected future expenditures on public and private LTC.

The second lesson follows from the simulations where we disentangle the effects of demography and the disability level from other effects on the use of care. This lesson is that differences in the projected *level* of LTC use among countries are to a large extent determined by different patterns of care use and – to a smaller extent – by differences in disability levels. Demography (composition of the populations over age and gender) plays a limited role. There are huge differences in care use among countries for a given age, gender and disability of the population. Among the four representative countries, we see that the prevalence of disability among elderly persons is especially high in Poland and relatively low in the Netherlands. This difference has little to do with the composition of the populations over age and gender. The Netherlands, on the other hand, has the most intensive care-use pattern for formal care, while the Polish elderly use little formal care. If the Dutch population with its Dutch demography and disability would follow the Polish care-use pattern, residential care use would almost vanish in the Netherlands (from 7.2% to 0.6% of the 65+ population in 2040). The results show the large impact of the care-use pattern. In countries with generous LTC systems, changing the care-use pattern may be a powerful way to control costs (but at a price). In countries with more rudimentary LTC systems, a possible development towards a more average care-use pattern will lead to a much larger formal burden of care.

A third lesson of the simulations is that whereas demography is not much of a determinant of the *level* of care use, demographic developments are indeed important determinants of the *growth* in the future need for LTC. In countries where ageing plays an important role, the demand for LTC will increase considerably in any case, even when future elderly are going to be healthier than the current elderly. Both demography and prevalence rates have an important impact on the growth of disability.

Fourthly, countries tend to organise their LTC system in very different ways, even comparable countries. Despite the differences in organisation, basic results of the system such as the probability of receiving help for older persons with limitations may be comparable under very different systems. The role of the state in funding and organising LTC versus individual responsibilities is one of the most important differences among countries. A large role for individuals and families means high private funding and/or a large role for informal care. These choices concerning private funding and the role of informal care have a large effect not only on public expenditure but also on the fairness of the system. With informal care and private funding, risk-sharing is limited. Family members have to supply informal care (or pay for private care) because they have someone near them who needs it, independent of their capacity to contribute to funding of care. And for elderly persons with limitations, their chances of receiving help depend to a lesser extent on their needs and to a larger extent on the coincidence of having access to informal carers or not or being able to pay for private care. This makes the funding of the system less equitable.

Thus, more publicly oriented LTC systems tend to be more equitable, but there is a price to be paid. Because such systems depend more on public funding, the financial burden is generally higher and may increase a lot when ageing plays an important role. However, we should not conclude that countries with a large dependence on informal care are safe from future problems with the sustainability of their LTC system (see below).

A fifth lesson from WP6 of the ANCIEN project is that both formal care-oriented and informal care-oriented systems will find it a challenge to ensure a sufficient supply of long-term care in the future with ageing populations. The projections for the four representative countries have shown that the

supply of informal care will not increase as fast as the potential use of informal care.[5] The relatively slow projected increase in the supply of informal care in the four countries is mostly due to the projected trends in intergenerational care. These trends are driven by underlying demographic trends in the numbers of persons aged 50 to 64. The projections of informal care supply in WP6 take into account developments in age, gender and marital status of caregivers. Possibly other developments in society will have an additional negative effect on informal care supply, much of which is still provided by women. A larger labour market participation of women and children living further from their parents may increase the care gap.

WP6 also produced projections for the formal care gap for the four representative countries, where the assumption is used that a constant fraction of the workforce will be employed in providing personal and nursing care for older persons with limitations (Geerts & Willemé, 2012b). Under this assumption, the supply of formal care workers will decrease in every country, while the supply that would be necessary to meet demand will increase by more than 90% to almost 150% depending on the country. Naturally, there is no inherent reason for the fraction of the workforce employed in personal and nursing care to remain constant. It may well be possible to increase the share of LTC workers in the total workforce, but the projected necessary increases are considerable and will certainly take efforts and be costly.

Sixth, we found that there is a lack of internationally comparable data on LTC. If countries consider it important to learn from each other's systems, the collection of comparable data would have to receive more attention. This is especially the case for data on the quality of care. Another difficulty with comparing systems is that these systems are clearly multidimensional and the weights for the different performance dimensions are unknown. Research into these weights, especially internationally-oriented research, would be very useful.

Finally, we can conclude that information about other national systems can provide inspiration for adapting a country's own system. Using the performance framework, policy-makers can identify the weak points of their own system and in the next step, select some countries where the LTC system scores well on those dimensions. They can see how those countries manage to score better on those particular aspects and this may inspire them to improve their own system. Sometimes other countries have found unexpected 'solutions' for certain problems. But policy-makers would still have to consider carefully how well the solutions found in other countries would work in their own country and which trade-offs are involved.

4. Research parameters

ANCIEN is a research project that concerns the future of LTC for older persons in Europe and investigates two questions: 1) How will need, demand, supply and use of LTC develop? 2) How do different systems of LTC perform? This Policy Brief summarises the findings from WP7 of the ANCIEN project, whose main objective is to evaluate the performance of different LTC systems.

This WP tried to add to the existing body of research by taking new steps in assessing the performance of LTC systems. Applying a formal performance framework to existing LTC systems in a quantitative way is not very often done. One important reason is no doubt a lack of internationally comparable data. WP7 attempted to fill in some of the blanks by developing a performance framework, using the SHARE database to determine indicators for quality of life of LTC users, using the projection models of WP6 for projections and simulations regarding the four representative countries selected in WP1 of ANCIEN, and carrying out a separate theoretical analysis of horizontal and vertical equity in LTC systems. These analyses have yielded meaningful new insights, but, given the difficulty of evaluating LTC systems, we also have to point out some caveats regarding the results for different aspects of performance as well as the way these results are combined.

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[5] Pickard & King (2012a) make projections of the number of people aged 50 and over who provide regular personal care to an older person in Germany, the Netherlands, Spain and Poland.

To start with the latter aspect, the weights given to different performance criteria in the overall evaluation would ideally be based on large international surveys to determine the relative preferences in different countries. As stated before, such information is not available. We made the simplifying assumption to use equal weights for all dimensions and sub-dimensions. To give additional insight into the way an overall evaluation can be approached, a multi- criteria decision method was also used.

Concerning the results for separate performance criteria, the results for the quality of life of LTC users are based on the SHARE database. SHARE only includes older persons living at home. Not only do we lack information on the quality of life in institutions, we also have to consider that groups of older people living at home are not directly comparable across countries. This is because countries differ widely in the rate of institutionalisation. Furthermore, interpreting the results for the analysis of life satisfaction as a valid indicator for unobserved aspects of LTC systems requires at least two assumptions: that we corrected for all important factors that may impact on the life satisfaction of persons with limitations and that the life satisfaction of persons without limitations is not materially affected by unobserved properties of LTC systems.

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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).

For more information, please visit the ANCIEN website (www.ancien-longtermcare.eu) or the CEPS website (www.ceps.eu).