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HEALTH STATUS TRANSITIONS

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Health Status Transitions

ENEPRI Research Report No. 35/June 2007

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Abstract

The purpose of this work package was to build up a picture of the movements in health status of the elderly population of each country by age and sex. Residential care and death were considered as well as states of health. Due to the scarcity of data regarding residential care, however, we calculated **transition probabilities** between the different states of health only for Belgium, Germany and UK. In addition, we calculated **healthy life expectancies** for those three countries. The calculations/estimations were derived from various micro- and macro-data sources (e.g. ECHP), and build upon results of WP III. The Stone-algorithm was used as a means of calibration.

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1 Introduction

This report describes activities carried out and results achieved in Work Package IV of the Project *AHEAD – Ageing, Health Status and Determinants of Health Expenditure* under the EC 6th Framework Programme.

The purpose of this work package was to build up a picture of the movements in health status of the whole population of each country by age. In WP III transition probabilities for the migration between the different states of health, and for selected countries migration into residential care and death, were calculated. We use these probabilities together with demographic data from various sources to produce demographic accounts and then use these once again to produce transition probabilities. This circular process is necessary to assess the probabilities calculated in WP III and to produce probabilities for categories (like death rates in residential care), which were not explored in WP III.

In order to build the demographic accounts, we had to collect data from various sources in the relevant countries. We want to express our thanks to all partner institutes participating in the AHEAD project that contributed in the data collection.

Long-term care for the elderly in Europe is provided in different ways. It comprises both public and private nursing homes, but also formal and informal home care concepts. Public expenditure on long-term care in Europe shows a north-south differential: With 3 percent of GDP the Scandinavian countries spend most and thereby finance a high level of inpatient and home nursing care. In Southern Europe such expenditure is hardly provided for, and the family's role in nursing care is much more important. Furthermore, huge differences exist between the volumes of intramural care provided by public or private institutions. In Finland, Sweden, and Norway the share of private institutions providing intramural care is below 20 percent, while in Germany, the United Kingdom, the USA, and Japan it is over 80 percent (Lunsgard (2002)).

The heterogeneity of provision for long-term care results in a difficult data situation. It seems that a high share of public providers of care facilitates data collection. In Nordic countries which have a larger share of public provider data availability is somewhat better than in countries with higher private shares. To complicate matters, if data are available on a national basis, delineations of care institutions covered need not coincide, resulting in difficulties when comparing data.

Even using the help of local partner institutes, we were able to collect sufficient data for the purpose of this work package only for a minority of countries. The planned exercise was to start with transition probabilities from Work Package III, augment them with macro data on residential care, and thus produce transition probabilities, which better correspond with

demographic data. The combination of limited macro data availability on residential care with limited possibilities to calculate the planned transition rates between health states in households for some countries, however, made it impossible to carry out this task for most countries. In this report, we therefore present transition probabilities for the three countries where data availability was comparatively best: United Kingdom, Belgium, and Germany.

2 Proposed methodology

The idea for this work package was to produce a demographic accounting matrix as depicted in Table 1 for each age/sex group.

Table 1: Schematic demographic accounting matrix showing the disparate sources as planned to be used in its construction

			In year t				
			In household			In residential care	Totals
			(Very) Good health	…	(Very) Bad health		
In year t + 1	In household	(Very) Good health	ECHP	ECHP	ECHP	0	ECHP
		…	ECHP	ECHP	ECHP	0	ECHP
		(Very) Bad health	ECHP	ECHP	ECHP	0	ECHP
	In residential care		ECHP	ECHP	ECHP	Derived	Census etc.
	Dead		ECHP	ECHP	ECHP	Derived	Death registration
	Totals		ECHP	ECHP	ECHP		

Source: IHS HealthEcon (2006).

The assumption was that a health distribution of the population could be calculated from ECHP data. The number of deaths and of residents in institutional care were assumed to be known from sources like death registrations or census. A source for the number of deaths in residential care, however, was less obvious. Assuming sufficient availability of ECHP data as well as data on residents in institutional care and overall deaths, the number of deaths in residential care could be derived. Transitions from residential care back into households, however, were assumed to be zero. The intention was to use transitions calculated from ECHP data not only for transitions between health states in households, but also for

transitions into residential care and into death. Those estimates then should have been calibrated using the additional data sources as stated above.

Unfortunately, for quite a number of countries it was not feasible to estimate the transitions into death or into residential care from ECHP data, as those transitions were severely underreported, see comments in the report on WP III (Bebbington, Shapiro (2005)). Hence quite often, it was not possible to derive the number of deaths in residential care per age group by subtraction:

$$\text{deaths in residential care} = \text{overall deaths} - \text{deaths in household (ECHP)}.$$

Table 2 provides an overview of transitions estimated in WP III. We see that for France, Spain, Austria (and obviously Sweden, Luxembourg) absolutely no transitions could be estimated. For the Netherlands and Finland only the estimation of very selected transitions was feasible.

Table 2: Availability of transition probabilities estimated in Work Package III

Transitions available from WP III								
Variable:	SAH		Hampering Condition		Institutions		Absorbing state	
Age:	< 65	> 65	< 65	> 65	< 65	> 65	< 65	> 65
Denmark	√	√	√	√			√	√
Netherlands						√		
Belgium	√	√	√	√		√	√	√
France								
Ireland	√	√	√	√		√	√	√
Italy	√	√	√	√		√	√	√
Greece	√	√	√	√			√	√
Spain								
Portugal	√		√				√	
Austria								
Finland	√		√			√	√	
Germany	√	√	√	√			√	√
UK	√	√	√	√		√	√	√
Sweden								

Source: Bebbington, Shapiro (2005).

Transitions into institutions and into death could be estimated only for some countries (UK, Italy, Ireland, Belgium, Finland).

Unfortunately, this set of countries furthermore comprises countries with a severe lack of transition probabilities between health states for age groups above 65, the very group this work package is focussed on.

For some countries transitions between health states are available, but either those to residential care or those into death are missing. In those cases, transitions between health states have to be interpreted as conditional probabilities, with the condition being that people stay in households for another year or die.

3 Data

3.1 Health states in household population – ECHP

The European Community Household Panel (ECHP) is a longitudinal survey conducted yearly from 1994 to 2001. The first wave of the ECHP in 1994 comprised 140.000 individuals older than 16 years in 60,000 households of 12 member countries of the European Union. From 1995 onwards ECHP data is available for Austria. Finland joined in 1996, Sweden in 1997. Original ECHP data for Germany is available for the first three waves of the panel, data on all eight waves is provided in the national SOEP survey. The situation is similar in the UK, where data for all eight waves comes from the national BHPS survey.

Out of the 23 questions related to health, self-assessed-health (SAH) is asked as “How is your health in general?” (PH001). The possible answers in English are “Very good”, “Good”, “Fair”, “Bad”, and “Very bad”. Issues regarding self-assessed health and issues concerning the comparability across countries were already discussed in the final paper of the AGIR project, WP I (Ahn et al. (2003)) and AHEAD WP III (Bebbington, Shapiro (2005)).

The original proposal for WP IV planned to get information on the residential care population out of the ECHP. The same is true for deaths in households. Deaths in residential care then should be calculated as the residual of overall deaths minus deaths in households. Unfortunately, both, death rate in households and residential care population are seriously underreported in the ECHP. For some countries like the UK and the Netherlands there are no recorded transfers to institutions at all. (Bebbington, Shapiro (2005)). Therefore it is not possible to gain reliable estimates of the population living in residential care institutions and the death rate in these institutions. Hence, it became necessary to gain information about these population figures from other sources. Information concerning data collection from alternative sources and the processing of this data is given in the appendix and the following sections.

As any other longitudinal survey the ECHP faces the problem of panel attrition. In 2002 Eurostat carried out an inquiry into country wise attrition and attrition by health state (Eurostat (2002)). Eurostat found out, that attrition varies largely between countries, with attrition being lowest in the UK (BHPS) and the Netherlands. The highest attrition rates can be found in Italy, Spain, and Ireland. Attrition according to health states affects especially people with poor health.[1]

The Eurostat weights, applied to the starting wave of a health transition, increase the proportion of deaths in most national samples. So the age distributions more closely fit the

[1] For detailed results on attrition by health states in the ECHP, see Eurostat Doc. Pan 179-02, Appendix 1.

population distributions (Peracchi, Nicolletti (2002)), as the oldest age-groups are underrepresented, partly as a result of slightly higher attrition among people over 75, even excluding deaths. As Eurostat offers a variety of weights, it should be noted that we consistently use the longitudinal weights (PiG003).

3.2 Collection of data on residential care

The data required to achieve the goal of our work package comes from a variety of sources. Whereas main demographic indicators like population and deaths can easily be obtained from standard national sources and Eurostat, data on residential care are scarce and difficult to access.

To deal with these circumstances, we drafted a data collection sheet, which has been sent to partner institutes (namely CEPS, CPB, ISAE, DIW, ETLA, FEDEA, ESRI, FPB, NIESR, LEGOS) in week 11/2005. The datasheet asked for midyear population, residential care population, and deaths in residential care for the years 1994-2003, both for single years and age groups. To assure the greatest possible comparability between the data collected for the crucial part of residential care, we asked the participating institutes to assign their data to one of the following ICHA-HP-definitions:

- **HP. 2 Nursing and residential care facilities:** Comprises establishments primarily engaged in providing residential care combined with either nursing, supervisory, or other types of care required by the residents. In these establishments, a significant part of the production process and the care provided is a mix of health and social services with the health services being largely at the level of nursing services.

- **HP. 2.1 Nursing care facilities:** Comprises establishments primarily engaged in providing inpatient nursing and rehabilitative services. The care is generally provided for an extended period of time to individuals requiring nursing care. These establishments have a permanent core staff of registered or licensed practical nurses who, along with other staff, provide nursing and continuous personal care services.

- **HP. 2.2 Community care facilities for the elderly:** Comprises establishments primarily engaged in providing residential and personal care services for elderly and other persons (1) unable to fully care for themselves and/or (2) unwilling to live independently. The care typically includes room, board, supervision, and assistance in daily living, such as housekeeping services. In some instances these establishments provide skilled nursing care for residents in separate on-site facilities. Assisted living facilities with on-site nursing care facilities are included in this item. Homes for the elderly without on-site nursing care facilities are also included.

3.2.1 Availability of residential care data

Table 3 shows the results of our data collection. Provided data for residential care population and deaths in residential care are categorized by country and by level of disaggregation. A symbol "√ " indicates that the data provided is comprehensive and representative. By contrast, the "o" emblematises in some way data with limited scope, scale, or quality. A country wise description of the data provided by partner institutes can be found in the appendix.

Table 3: Availability of residential care data

	Residential care population				Deaths in residential care			
	Availability	5-year age groups	Single years	By sex	Availability	5-year age groups	Single years	By sex
Denmark	1994-2003	√			none			
Netherlands	1995-2001 (ex. 1997)		√	√	1998-2003 (ex. 2002)		√	√
Belgium	1996-2001	√	√	√	2001			o
France	1994, 1998	o	o		1994-2002	√	o	
Ireland	2002	√			none			
Italy	1999-2001	o		o	1999-2000	o		o
Greece								
Spain	1994-2001	√		√	none			
Portugal								
Austria	1991, 2001		√	√	none			
Finland	1995-2003		√	√	1995-2003		√	√
Germany	1997-2003	√		√	none			
UK	1994-2001		o	o	none			
Sweden	1994-2001	o		o	1994-2001	o		o

Source: IHS HealthEcon (2006).

Only for Greece and Portugal, participating institutes could not provide data on residential care. Data for France, Italy, and Sweden were of limited use for us. Data for Denmark and Ireland are not separated by sex and are in five-year age bands only.

In our questionnaire we asked respondents to specify to which categories of residential care provided data apply. Unfortunately, definitions for „residential care" vary largely from country to country and do not necessarily fit into the classification we provided. Thus, countries differ

with regard to the type of care institution covered by the available data. E.g. in Finland and the Netherlands not only homes for the disabled and hospitals, but also mental health institutions, substance abuse rehabilitation facilities, and homes for the aged are included. In contrast to this very comprehensive definition of residential care, other countries like Belgium refer to homes for the aged and homes for the disabled only. As transition patterns must be expected to vary with the types of institutions involved, a country-specific estimation is necessary.

In several countries we must be aware of the problem of underestimation of the total number of residential care population: Persons living in a residential care institution, who are not registered there (because spouse etc. still lives at home), might not be counted. This problem was mentioned e.g. for the Netherlands.

Information on deaths in RCIs seems to be very scarce in Europe, see Table 3. In response to our questionnaire, we received data according to our specification (i.e. death rates by single years of age and by sex) for only two countries, Finland and the Netherlands. We further received some limited information for Belgium, France, Italy, and Sweden, with the information for Belgium being reduced to some estimates out of a survey conducted by the Belgian annuity assurance institute INAMI/RIZIV. This survey, carried out in 2001, found a death rate in homes for the elderly and nursing homes of 25.9%[2].

Death rates in Dutch RCIs seem to be consistently lower than in RCIs in Finland, see Figure 3. For both countries, reported death rates are in a more or less linear relationship with age (a regression with age as only and significant independent variable results in an R2 value of between 0.98 and 0.87). If we define institutionalisation as number of residents in RCIs as a share of the population in respective age, institutionalisation in Finland is on a medium level, compared to other data available, see Table 4 According to the data provided by the partner institutes, institutionalisation in Germany and UK is lower, that in Belgium and in the Netherlands is higher than in Finland[3]. Thus, comparing Netherlands and Finland, higher institutionalisation in the Netherlands is compatible with lower death rates, if we assume that average health status of residents in RCIs is better if available RCI capacity is higher. But given the known data limitations, it is hard to derive any justifiable interpretations from this difference.

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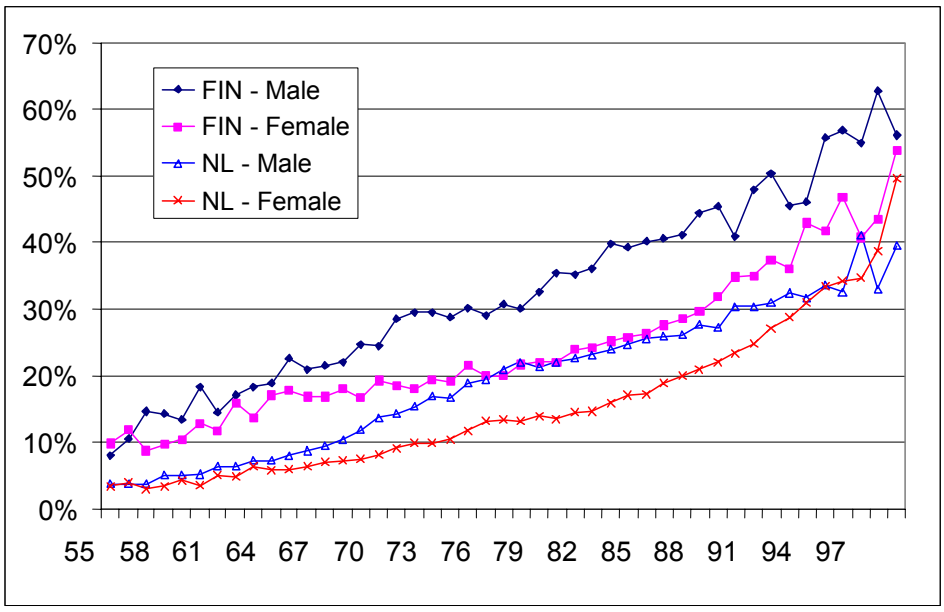
[2] Death rate men: 30.59%, women 69.41%.

[3] Despite the narrower definition of institutionalization in Belgium and the Netherlands: In the Finnish data the institutionalized population comprises inhabitants of homes for the aged, homes for the disabled, mental health institutions, substance abuse rehabilitation facilities, and people who stay in a hospital longer than 90 days. RCI population in Belgium and the Netherlands comprises inhabitants of homes for the aged and homes for the disabled only.

Like the number of residents in residential care, also the number of deaths in residential care, is likely to be underreported. This arises from inhabitants of RCIs being transferred to acute care in the last days of their life, and the deaths then being reported as a death in hospital rather than in a RCI. This problem was mentioned for Finland, but might apply to other countries as well. Unfortunately, we do not have information on the possible size of the discrepancy between "true" and reported death rates in residential care, or on the discrepancy between "true" and reported residents in RCIs.

Figure 1: Death rates in residential care by sex and age



Source: See appendix.

Table 4: Mean institutionalisation rate by age in selected countries 1994-2001

Mean institutionalisation rate by age in selected countries 1994-2001										
	Finland		Netherlands		Germany		UK		Belgium	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
65	0.64%	0.50%	0.96%	1.00%	0.37%	0.29%	0.65%	0.59%	0.56%	0.51%
66	0.71%	0.61%	1.01%	1.09%	0.39%	0.33%	0.34%	0.60%	0.62%	0.61%
67	0.84%	0.70%	1.09%	1.22%	0.41%	0.39%	0.62%	0.50%	0.71%	0.70%
68	0.99%	0.84%	1.17%	1.40%	0.43%	0.44%	0.77%	0.78%	0.78%	0.84%
69	1.12%	1.02%	1.26%	1.58%	0.46%	0.49%	0.77%	0.70%	0.89%	1.02%
70	1.28%	1.21%	1.38%	1.80%	0.50%	0.56%	0.96%	0.89%	1.00%	1.25%
71	1.41%	1.45%	1.52%	2.09%	0.54%	0.63%	1.09%	1.28%	1.17%	1.52%
72	1.67%	1.74%	1.70%	2.45%	0.62%	0.78%	0.99%	1.58%	1.30%	1.80%
73	1.96%	2.10%	1.92%	2.91%	0.71%	1.02%	1.23%	1.86%	1.50%	2.23%
74	2.20%	2.48%	2.23%	3.53%	0.81%	1.32%	1.87%	1.68%	1.75%	2.73%
75	2.56%	3.02%	2.57%	4.22%	0.92%	1.64%	1.66%	2.13%	2.02%	3.32%
76	3.05%	3.74%	2.95%	5.06%	1.07%	2.05%	1.82%	2.27%	2.45%	4.27%
77	3.38%	4.39%	3.50%	6.07%	1.25%	2.53%	1.90%	2.69%	2.96%	5.44%
78	4.05%	5.22%	4.15%	7.47%	1.44%	3.03%	2.43%	3.70%	3.49%	6.63%
79	4.67%	6.26%	5.04%	9.04%	1.63%	3.55%	2.93%	4.53%	4.19%	8.12%
80	5.25%	7.38%	6.14%	10.99%	1.84%	4.11%	3.23%	5.07%	4.88%	9.75%
81	6.28%	8.60%	7.40%	13.28%	1.95%	4.43%	3.53%	6.09%	5.72%	11.51%
82	7.04%	9.92%	9.16%	16.09%	2.15%	5.06%	4.60%	7.53%	6.43%	13.06%
83	7.99%	11.66%	10.88%	18.94%	2.61%	6.33%	4.58%	8.45%	7.45%	14.91%
84	9.14%	13.72%	12.70%	21.81%	3.26%	7.97%	5.65%	10.45%	9.48%	17.72%
85	10.61%	15.69%	15.16%	25.19%	4.03%	9.70%	7.48%	12.60%	11.58%	21.06%
86	11.90%	18.08%	17.85%	28.92%	5.19%	12.19%	8.60%	13.60%	14.08%	25.33%

Source: See Appendix: Data availability by country.
Finland: Homes for the aged, Homes for the disabled, Mental health institutions, Substance abuse rehabilitation facilities, Hospitals (patients who stay longer than 90 days).
Netherlands: Homes for the aged, Homes for the disabled.
Germany: Statutory long-term care recipients in stationary care.
UK: Residential care homes, nursing homes.
Belgium: Homes for the aged, Homes for the disabled.

3.2.2 Necessary adjustments of residential care data

In order to calculate single year transitions, we obviously need data by single year of age. Some data, however, like residential care population in Germany, were supplied for 5-year age bands only.

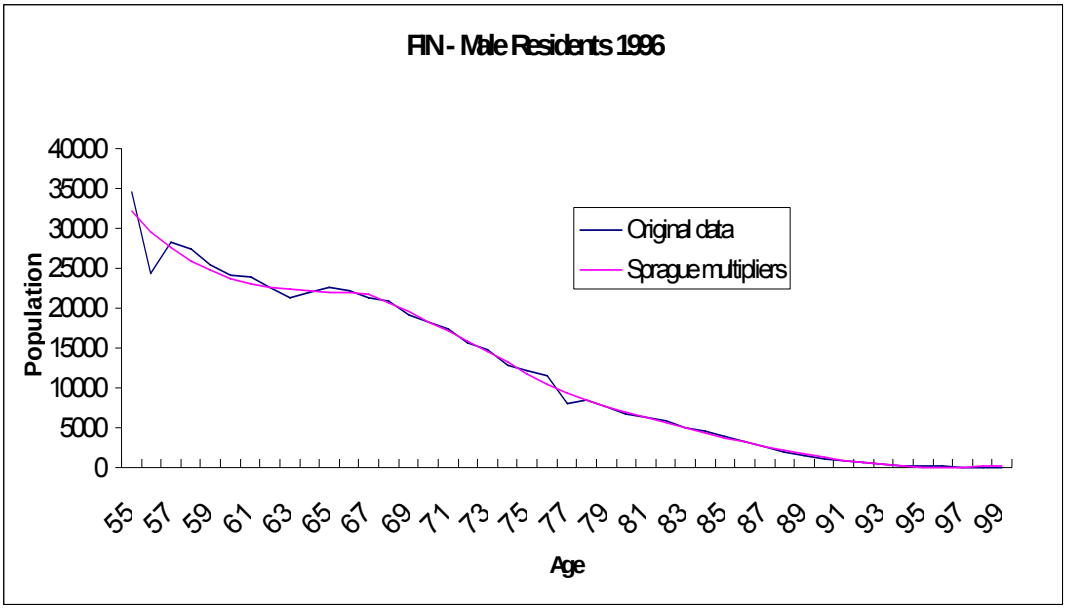
We used the Sprague method, a form of osculatory interpolation, to calculate a likely distribution of such data over the single years of age. Put into simple words, the Sprague method uses polynomials to divide the age band in a pattern that follows the pattern of neighbouring groups. The Sprague method is based on two polynomials of the fourth degree (Shyrock et al. (1976)):

$$y_{n+2+x} = y_n + \frac{x+2}{1!}\Delta y_n + \frac{(x+2)(x+1)}{2!}\Delta^2 y_n + \frac{(x+2)(x+1)x}{3!}\Delta^3 y_n + \frac{(x+2)(x+1)x(x-1)}{4!}\Delta^4 y_n + \frac{x^3(x-1)(5x-7)}{4!}\Delta^5 y_n$$

where y denotes given observations,
x denotes fractions less than unity,
n denotes any integral number.

We tried several similar procedures to divide the 5-year age groups into single year age groups (even though all methods we experimented with are based on the same principle: copy the pattern of neighbouring groups into the group itself). When checking with data where both were available single year data and 5-year age bands, we found the Sprague method to match most satisfactorily.

Figure 2: Original data versus data constructed using the Sprague method



Source: IHS HealthEcon (2006).

We found two main groups of errors produced by this method: An erratic pattern or kinks in an otherwise smooth line are not reproduced, and the very first and the very last years are not reproduced properly (which in our case presented here coincides with kinks in a more or less smooth line). For a comparison of calculated and original data see Figure 2, which represents male residents in Finland 1996.

3.3 Population data

For some but not all countries, partner institutes could provide data on population and deaths. In case partner institutes failed to provide data or delivered grouped data on these variables, New-Cronos data could be supplemented.

Table 5: Availability of population data as provided by partner institutes

	Population				Overall Deaths			
	Availability	5-year age groups	Single years	By sex	Availability	5-year age groups	Single years	By sex
Denmark	1994-2003	√		√	1994-2003	√	√	√
Netherlands	1994-2003		√	√	1994-2003		√	√
Belgium	1994-2001	√		√				
France	1994-2002	√	√	√	none			
Ireland	1991, 1996,		√	√	none			
Italy	1999-2001		√	√	none			
Greece	1994-2001		√	√	1994-2001		√	√
Spain	1994-2001		√	√	none			
Portugal	1994-2001		√	√	1994-2001		√	√
Austria	1994-2001		√	√	1994-2001		√	√
Finland	1994-2003		√	√	1994-2003		√	√
Germany	1994-2003	√		√	1994-2003	√	√	√
UK	1994-2001	√	√	√	none			
Sweden	1994-2001		√	√	none			

Source: IHS HealthEcon (2006).

Table 3 shows the results of our data collection, a "√" symbol indicates that the data provided is comprehensive and representative. By contrast, the "o" emblematises in some way data with limited scope, scale, or quality. Table 5 provides a summary of provided data for the overall population and deaths by country. As it can be seen from Table 5 data on population and death are – where provided – always in sufficient quality.

For reasons of data comparability, we decided to focus on New-Cronos population data. New-Cronos database provides population figures as of January 1st of each year. For our purpose, however, average population is more appropriate; this better corresponds with ECHP and residential care data. We therefore calculated mid-year figures by taking the average of two consecutive years.

3.4 Summary on data availability and choice of countries for further calculations

Summing up, we found that data availability poses two main problems. Firstly, it was proposed that our calculations start from results achieved in Work Package III, which again heavily relies on ECHP. Due to insufficient ECHP results for some countries (Netherlands, France, Spain, Austria, Finland, Sweden) no or not all transitions between health states in households are available, and a similar situation applies to transitions between household and residential care or death (underreporting).

Good data on residential care, on the other hand, is available only for an even more limited number of countries. The main problem is that good data on residential care (Netherlands, Finland) coincides with lack of transition rates calculated from ECHP in WP III. Residential care data with less precision (aggregated for age and/or sex) do not suffice for the task at hand.

Following from what was said above, the choice of countries for which calculations can be made is severely limited by the availability of the necessary data. In order to proceed with the proposed task, i.e. combine ECHP results with residential care data from other sources, we had to "borrow" information from other countries. We thus selected Belgium, Germany, and UK, as for all three countries we have transition probabilities from WP III as well as age and sex specific information on residents in RCIs. Furthermore, for those three countries residential care information is available for a series of years (in case of UK, we were provided with a series calculated from two observation years, 1994 and 2001). For these countries we do not have death rates for the RCI population, with the only exception of Belgium, where we know of an approximate death rate of 25.9%, aggregated for all ages and both sexes. We thus decided to "borrow" the age and sex distribution of death in RCIs from countries with such information, Netherlands and Finland[4].

Test runs using either Finnish or Dutch death rates, however, showed no remarkable difference in results. In two of the selected countries, Germany and UK, the share of residential care inhabitants in total population is by far lower than in countries with information on death rates in residential care (Netherlands, Finland). In Belgium, on the other hand, the share of residential care population is higher than in any other of the four countries. Given the limited impact of the choice between Finnish and Dutch death rates, we chose the distribution of deaths from the country with lower residential care population, Netherlands, for application in all three calculations, Belgium, Germany, and UK.

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[4] Trials to proceed in the other direction were less successful. "Borrowing" ECHP results from Denmark and combining this information with RCI information from Finland resulted in very erratic patterns of the calculated transitions. Furthermore, because one of the purposes of this work package is to assess the results achieved from work package III, proceeding in this way would be pointless.

Even where we have some information on death rates in RCIs at hand, we have to assume that deaths in residential care are underreported. In addition to that, we also have to assume some degree of underreporting in the numbers of residents in RCIs. As both inaccuracies work in the same direction (under- rather than overreporting), and we need the ratio between the affected numbers, their combined effect might cancel each other. Of course, we cannot verify if or to which degree this is the case, as we have no suitable data for an adjustment for underreporting in both cases. On the other hand, we borrow the death rates from a different country. An adjustment for underreporting (in case of Belgium, plus a geographical adjustment to reach the non age-adjusted death rate in residential care) seemed to introduce more bias rather than eliminate any bias. We therefore decided to abstain from any correction for underreporting.

4 Method

4.1 The technical problem

The technical problem is to apply appropriate methods to balance the following transition matrices. The structure of those transition matrices is shown in Table 6.

Table 6: The structure of a transition matrix

			In year t					
			In household				In residential care	Total
			Very good	Good	Fair	Bad		
In year t+1	In household	Very good	$X_{1,1}$	$X_{1,2}$	$X_{1,3}$	$X_{1,4}$	0	$X_{1,.}$
		Good	$X_{2,1}$	$X_{2,2}$	$X_{2,3}$	$X_{2,4}$	0	$X_{2,.}$
		Fair	$X_{3,1}$	$X_{3,2}$	$X_{3,3}$	$X_{3,4}$	0	$X_{3,.}$
		Bad	$X_{4,1}$	$X_{4,2}$	$X_{4,3}$	$X_{4,4}$	0	$X_{4,.}$
	In residential care		$X_{5,1}$	$X_{5,2}$	$X_{5,3}$	$X_{5,4}$	$X_{5,5}$	$X_{5,.}$
	Dead		$X_{6,1}$	$X_{6,2}$	$X_{6,3}$	$X_{6,4}$	$X_{6,5}$	$X_{6,.}$
	Total		$X_{.,1}$	$X_{.,2}$	$X_{.,3}$	$X_{.,4}$	$X_{.,5}$	$X_{.,.}$

Source: IHS HealthEcon (2006).

The matrix element $X_{i,j}$ describes the number of persons who change from health status j in year t to health status i in the following year t+1. The six different health states, which are considered in this context, are “Very good” (i,j=1), “Good” (i,j=2), ”Fair” (i,j=3), “Bad” (i,j=4), “In residential care” (i,j=5), and “Dead” (i=6). $X_{5,2}$ for example indicates those persons who have changed from good health in year t to residential care in the next year. Therefore the total number of persons with health status i in the period t+1 is given by $X_{i,.}$ (i=1,…,6), whereas the corresponding total number of persons with health status j in the period t is given by $X_{.,j}$ (j=1,…,5). This is shown by the following equation:

$$X_{i,.} = \sum_{j=1}^{5} X_{i,j} \text{ resp. } X_{.,j} = \sum_{i=1}^{6} X_{i,j} .$$

The overall number of persons is correspondingly given by the following equation:

$$X_{.,.} = \sum_{i=1}^{6} \sum_{j=1}^{5} X_{i,j} .$$

In principle (without smoothing activities, see chapter 4.3), own transition matrices are constructed separately for each single year of age, both sexes, and each transition period, but all transition matrices have the structure as presented in Table 6.

4.2 The data

The sums of the rows $X_{i,.}$ (i=1,…,6) and the sums of columns $X_{.,j}$ (j=1,…,5) are taken as given. These data sets are separately available for different ages, countries, and transition periods as well as for both genders.

The values $X_{i,j}$ (i=1,…,6; j=1,…,5) are unknown.

In order to reduce the number of unknowns we assume that persons who are in residential care will not return to their households. More formally, this corresponds to $X_{1,5}$= $X_{2,5}$=$X_{3,5}$=$X_{4,5}$=0.

As a consequence the remaining number of unknowns is reduced from 30 to 26 in a (6x5)-table.

4.3 Data smoothing

The next step is the smoothing of the data. In order to reduce the influence of stochastic fluctuations the data is smoothed according to two dimensions: age and transition period. We experimented with moving averages of different lengths:

- In the case of the ages g, the use of a moving average of length 1 indicates, needless to say, no smoothing, whereas a moving average of length 3 averages over the adjacent years. A moving average of length 5 averages all ages from age g−2 to g+2.

- Concerning the transition period, we use again moving averages of length 1, indicating no smoothing, and 3, indicating the average over the adjacent transition periods. The final moving average used however includes **all** data, which means that we are averaging over all transition periods.

This gives 9 possible combinations and therefore models for each country: one with no smoothing for both, age and transition period, one with no smoothing in case of age and averaging over the adjacent transition periods as far as the transition period is concerned etc..

4.4 The applied method: the Stone-algorithm

We applied the Stone-algorithm to balance the transition matrices[5]. This methodological approach as well as its results will be described in more detail in the following sections.

In adjusting entries in a matrix care should be taken of the relative accuracy of the original data: Relatively accurate direct estimates should not be changed a lot, while relatively inaccurate estimates may be changed considerably. In order to meet this criteria, reliability ratings of the direct estimates must be used to construct a variance matrix for them. The constraints could then be met by minimizing the sum of the squares of the adjustments, weighted by the reciprocals of the variances. The procedure can be formalized as follows:

Let y be a $\nu \times 1$ vector with the true values of the unknowns. Those are subject to μ independent linear constraints given by

$$A \cdot y = b,$$

where A is the $\mu \times \nu$ constraint matrix of rank μ; and b is a $\mu \times 1$ vector of known constants. Let y* be a vector of unbiased estimates of the elements of y and let V*, of order ν and rank greater than μ, be the variance matrix of the elements of y*. Moreover, the assumption must be made that any constraints satisfied by y* are linearly independent of (1).

The best linear unbiased estimator of y, y**, can then be shown to be given by

$$y^{**} = y^{*} - V^{*} \cdot A' \cdot \left(A \cdot V^{*} \cdot A'\right)^{-1} \cdot \left(A \cdot y^{*} - b\right).$$

4.5 The start vector, constraints, variance

As described above, the Stone-algorithm needs a start vector y* from which the table containing the new values can be calculated. In our case, the vector y* is constructed based on the results of Work Package III.

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[5] The Stone-algorithm is described in Stone (1982).

4.5.1 The start vector

As an observation table is neither available for the transitions nor for the transition probabilities, we have to construct an appropriate start matrix.

As far as the transition to residential care is concerned, Work Package III provides only an "overall probability" (op) for the transition from household to residential care. Based on this probability the number of persons who change to residential care is estimated by:

$$c = op \cdot \sum_{j=1}^{4} X_{.,j} .$$

The distribution of these persons between the four different initial health states is given by the following key, resulting in $u_{5,j}$ (j=1,…,4): 3% are supposed to have a very good, 8% a good, 36% a fair and 53% a bad health condition prior to admission to residential care[6].

The transition probabilities $p_{i,j}$ from Work Package III were calculated without taking into account the transitions to residential care. This fact must however be considered in the calculation of the missing start values: The multiplication of the transition probabilities p_i by the corresponding sums of columns *minus* the number of persons changing to residential care therefore results in the missing start values:

$$u_{i,j} = p_{i,j} \cdot \left(X_{.,j} - u_{5,j} \right).$$

The transition probability $y_{i,j}$ (i=1,…,6; j=1,…,5) describes the probability for the event that a person currently being in health condition j changes to health condition i in the next period.

Using the $u_{i,j}$ (i=1,…,6; j=1,…,5) and the sums of columns $X_{.,j}$ (j=1,…,5) start values for the transition probabilities can be calculated by

$$y^{*}_{i,j} = \frac{u_{i,j}}{X_{.,j}} .$$

[6] This key is taken from Table 4, page 56 from Bebbington, Shapiro (2005) and applies to the overall ECHP population. The approach as outlined in the project proposal, i.e. to assume that all transitions into residential care are from bad health, produced an estimation including a higher number of negative transitions.

The start vector is constructed by setting up the matrix ($y_{i,j}$*) as a vector. The start vector z_i is defined as:

$$z_{6\cdot j+i-6} := y^*_{i,j}, \qquad i=1,\ldots,6;\ j=1,\ldots,4;$$

$$z_{20+i} := y^*_{i,5}, \qquad i=5,\ 6.$$

4.5.2 The constraints

The transition probabilities $y_{i,j}$ (i=1,…,6; j=1,…,5) have to satisfy the following constraints:

1. The transition probabilities $y_{i,j}$ must sum up to 1 for each starting health condition j (j=1,…,5):

$$\sum_{i=1}^{6} y_{i,1} = 1, \qquad j=1,\ldots,4;$$

$$y_{5,5} + y_{6,5} = 1.$$

2. Multiplying the transition probability by the number of persons with the corresponding starting health condition and summing up these terms must result in the total number of persons showing the respective health condition in the next period. This holds for every row respectively health condition in the next period:

$$\sum_{j=1}^{4} y_{i,j} \cdot X_{.,j} = X_{i,.}, \quad i=1,\ldots,4;$$

$$\sum_{j=1}^{5} y_{i,j} \cdot X_{i,j} = X_{i,.}, \quad i=5,\ 6.$$

This results in a problem with 11 constraints and 26 unknowns. As the 11 constraints are not linearly independent, we drop the last constraint (i=6), which renders the remaining constraints linearly independent.

4.5.3 The variance matrix

The variance matrix V* can be constructed in many ways. As the quality of the estimators (start values) are unknown, we use one of the most popular construction methods of the variance matrix V*. The covariances between different estimations are assumed to be zero:

$$v^*_{k,m} = 0, \qquad k \neq m .$$

As far as the variances of the estimations are concerned, it is assumed that these variances only depend on the corresponding unknowns, which are exponentiated by non-negative integer values. The most successful variant was to take squares:

$$v^*_{k,k} = z_k^2, \qquad \text{if } z_k \leq 0.5 ,$$

$$v^*_{k,k} = (1 - z_k)^2 , \qquad \text{if } z_k > 0.5 .$$

As the transition probabilities are restricted to a value not higher than one, the second equation proved to be helpful. The BLUE of the variance matrix is given by:

$$V^{**} = V^* - V^* \cdot A' \cdot \left(A \cdot V^* \cdot A'\right)^{-1} \cdot A \cdot V^*$$

4.6 Variable sums of rows and sums of columns

As the sums of the rows and the sums of the columns are also only estimations, we modeled a scheme, based on the Stone-algorithm, in which these sums are variable as well. The only exceptions are the number of residents and the number of deaths, which are taken as reliable information and therefore remain fixed.

This scheme uses the same start matrix as presented above to form the base for the start vector for the Stone-algorithm.

4.6.1 The start vector

The number of unknowns increases to 36 (we have 11 sums of rows and sums of columns minus the sums of deaths). This time we use the transitions instead of the transition probabilities as start vector.

The start vector is constructed by setting up the matrix ($u_{i,j}$*), the sums of the rows, and the sums of the columns as a vector. The start vector z_i is defined as:

$$z_{6\cdot j+i-6} := u_{i,j}, \qquad i=1,\ldots,6;\ j=1,\ldots,4;$$

$$z_{20+i} := u_{i,5}, \qquad i=5,\ 6;$$

$$z_{26+j} = X_{.,j}, \qquad j=1,\ldots,5;$$

$$z_{31+i} = X_{i,.}, \qquad i=1,\ldots,5.$$

4.6.2 The constraints

The transitions $X_{i,j}$ (i=1,…,6; j=1,…,5), the sums of the rows, and the sums of the columns have to satisfy the following constraints:

1. The transitions $X_{i,j}$ have to be equal to the corresponding sum of the column for each starting health condition j (j=1,…,5), i.e. the sum of the transitions minus the sum of the column has to be zero:

$$\sum_{i=1}^{6} X_{i,j} - X_{.,j} = 0, \qquad j=1,\ldots,4;$$

$$y_{5,5} + y_{6,5} = 1.$$

2. The transitions $X_{i,j}$ has to be equal the corresponding sum of the row for each ending health condition i (i=1,…,6), i.e. the sum of the transitions minus the sum of the row has to be zero:

$$\sum_{j=1}^{5} X_{i,j} - X_{i,.} = 0, \qquad i=1,\ldots,6.$$

3. The sums of the rows have to sum up to the total population minus the sum of deaths:

$$\sum_{i=1}^{5} X_{i,.} = X_{.,.} - X_{6,.}.$$

4. The sums of the columns have to sum up to the total population:

$$\sum_{j=1}^{5} X_{.,j} = X_{.,.} .$$

This results in a problem with 13 constraints and 36 unknowns. As the 13 constraints are not linearly independent, we drop the constraint for i=6 (point 2), which renders the remaining constraints linearly independent.

4.6.3 The variance matrix

In principle, the variance matrix is constructed in a similar way as in the first model. The covariances are again zero, but the variances are:

$$V^{*}_{k,k} = z_k , \qquad k= 1,\ldots,36.$$

4.7 Confidence intervals

Due to the lack of information regarding the structure of the transition distributions, it is assumed that these are normally distributed. Hence the confidence interval is given by:

$$\left[y^{**} - z(1-\tfrac{\alpha}{2})\sigma; y^{**} + z(1-\tfrac{\alpha}{2})\sigma\right]$$

with

$$\sigma = \sqrt{v^{**}_{k,k}} .$$

4.8 Estimation of life expectancy and healthy life expectancy and expected time in residential care

In a next step we use transition matrices to calculate life expectancies, healthy life expectancy and the expected time in residential care. Healthy life expectancy is given as the probability of being either in “very good” or “good” state given the condition of being in a “very good” state at the beginning of the observation period. The calculations of life expectancies, healthy life expectancies and expected time in residential care follow the multistate method which is described in the Working Paper by Khoman and Weale (Khoman and Weale (2006)). Please consult their paper for a description of calculation details. A comparison of results by Khoman and Weale and our results, however, has to take account of some differences, like the age group analysed or the assumed life expectancy. The results

of theses estimations are discusses in chapter 5, the numerical results are can be see in Table 65 to Table 68.

4.9 Estimation of Policy Scenarios

In 5.3 we discuss the evaluation of two policy scenarios affecting the expected time spent in residential care. The results are presented in 5.3, here we will briefly discuss the necessary technical aspects.

A part of the results of WPIV are the matrices describing the transition probabilities between health states. In 4.8 we discussed how using these matrices as a starting point or base scenario, one can calculate the amount of time spent in a final state such as the time in *residential care* or Life Expectancy, Healthy Life Expectancy. Following the suggestion of a referee we would like to illustrate how our model can be used as a framework to address certain policy questions.

Suppose the policy maker's goal is to reduce the amount of time an individual spends in residential care:

Let K_{65}^{0} be the estimated expected time in residential care of a 65 year-old

Let K_{65}^{d} be the desired expected time in residential care of a 65 year-old

The time spent in residential care as well as the transition probabilities are results of our model. They are not variables a policy maker could influence directly. In order to achieve a desired reduction in the time spent in residential care one would have to implement policies that affect the transition probabilities, which in turn would yield a different amount of time spent in an absorbing state.

The structure of our model does not allow simply reversing the calculations. Hence – given a desired change in the estimated expected time in residential care – one has to apply an iterative algorithm to identify the appropriate change in probabilities. This (percentage) change will yield new transition probabilities which in turn will yield the desired change in the estimated expected time in residential care:

Let $y_{i,j}^{0}$ be the estimated transition probability (of going from state j to i) representing the result of our model

It is exactly these transition probabilities between states of health, (i.e. the results of our base scenario) a policy scenario would have to affect in order to achieve a reduction in time spent in *residential care.*

Here, we will examine two possible policy scenarios. Given our results we will ask how much would a policy scenario have to influence or change the transition probabilities[7] in order that they yield the desired reduction in time spent in residential care. [8]

Policy scenario 1 focuses on the transition from any given health status into residential care. The idea is to implement policies that positively influence[9] the probability of such a direct transition in favor of a transition to the health state bad. An individual's health is "improved" in such a way that his or her chance of not going directly into residential care is smaller and that the person could still stay at home.

Policy scenario 2 on the other hand takes a more encompassing approach. Again the ultimate goal is to reduce the time spent in residential care. The focus is not only on decreasing the probability of a direct transition into residential care in favor of a higher probability of transition to health state bad. Policy scenario 2 summarizes a number of policies, which aim at an overall improvement of health by increasing the probabilities of being in the same subsequent state of health as in the base scenario or even moving to a better subsequent state of health.

Put differently, policy scenario 1 could be summarized as "enabling individuals to stay at home" whereas policy scenario 2 could be summarized as "enabling individuals to stay at home and keeping them healthier".

In order to compare the two scenarios we will have to identify the change in transition probabilities necessary in order to achieve a desired change in the outcome of our model, i.e. in the estimated expected time in residential care:

Let $y^1_{i,j}$ and $y^2_{i,j}$ be the transition probabilities (of going from state j to i) associated with scenario 1 and scenario 2 which yield K^d_{65}

Let f^1 and f^2 be the change in transition probabilities necessary to achieve K^d_{65} in Policy scenario 1 and Policy scenario 2, where $\mathrm{f}^1, \mathrm{f}^2 \in (0,1)$

Given K^d_{65}, f^1 and f^2 will have to be identified iteratively using

$$y^1_{4,j} = y^0_{4,j} + y^0_{5,j} f^1$$

$$y^1_{5,j} = y^0_{5,j}(1 - f^1)$$

---

[7] in both scenarios we assume that the transition probabilities to *death* will not be influenced

[8] The according mathematical formulation of how these scenarios would have to influence the transition probabilities can be found in 4.9

[9] increasing or decreasing probabilities is meant w.r.t. the results of our model

in policy scenario 1 and

$$y^2_{1,j} = y^0_{1,j} + y^0_{2,j} f^2$$

$$y^2_{i,j} = y^0_{i,j}(1 - f^2) + y^0_{i+1,j} f^2 \text{ for i=2,…,4}$$

$$y^2_{5,j} = y^0_{5,j}(1 - f^2)$$

in policy scenario 2.

4.10 Panel regression analysis

WP IV provides 30 tables for the age- and gender-dependent transition probabilities in three different countries (UK, GER, BEL). There are five possible health states of origin and six different health states for the next period (including death). In order to summarize the information contained in these tables we performed a panel regression analysis taking into account differences in country levels, age and gender. The results provide information about age-, gender- and country-specific differences in the transition probabilities.

We modeled transition probabilities in panel data regression model:

$$y_{it} = \alpha + X'_{it}\beta + u_{it},$$

where $i = 1,\mathrm{K}\ N$ is the cross section dimension, $t = 1,\mathrm{K}\ T$ is the time dimension, α is a scalar, β is a vector of dimension $K \times 1$ and X_{it} is a matrix containing K explanatory variables.[10]

We specify a fixed-effects model with the error term assumed to be:

$$u_{it} = \mu_i + \nu_{it},$$

where ν_{it} are independent and normally distributed random variables and μ_i is a fixed effect in the cross section dimension (Baltagi (1995)).

The explanatory variables are age, a gender dummy and country dummies. In addition, we included a country-specific age variable allowing for country-specific evolutions of transition probabilities over age. The fixed effect enters as a country dummy. This allows us to test

[10] The dependent variable (y_{it}) in this case is the transition probability for a pair of health states per age group, the explanatory variables are age, sex (a dummy variable), age*country dummy variable and, initial health state and initial health state*dountry dummy.

whether there are country effects that explain systematic differences in transition probabilities. If there is a significant difference for health state transitions across countries then the country dummy is significantly different from zero. It should be noted that this ways only allows for pair wise comparisons, where we have to define one country as a reference point.

In estimating the model, we conditioned on initial health states because in a simple pooled regression framework the effects of age and health states are averaged out due to the specific construction of the tables. We also ran 26 regressions conditioning on being in one health state first and transiting to the same or another health state afterwards for all health states, but this did not reduce the information contained in the tables a lot. Therefore we conditioned only on the initial health states and obtained information on the above-mentioned effects for each initial health state, i.e. *very good*, *good*, *fair*, *bad*, *residential care* and *death*. Because the health state *residential care* is an absorbing state by construction (i.e. being in this health state one can only remain in this state or die), we additionally modeled transition probabilities.

The estimated coefficients give us information on how the transition probabilities differ over countries, age and gender.

4.11 Benchmarking

A referee suggested the development of an EU benchmark model. Unfortunately, the number of countries for which data were available is too small for such an endeavour. In principle however, such a benchmark model should be possible. A method that would lend itself to developing a benchmark model would be Data Envelopment Analysis (DEA).

The Data Envelopment Analysis (DEA) is an optimization based non-parametric technique proposed by Charnes et al. (Charnes et al. (1978)) in 1978, to evaluate the relative performance of decision making units (DMUs) which are characterized by a multiple outputs and/or multiple inputs structure. Operational DMUs of this kind often include non-profit and governmental units such as schools, hospitals, and universities, which produce outputs or use inputs for which prices are usually unknown. In these DMUs, the presence of a multiple output – multiple input situation makes it difficult to identify an evident efficiency indicator such as profit and complicates the search for satisfactory efficiency measures. DEA combines the multi-dimensional data to one single index via benchmarking without the necessity of the a priori knowledge of the production structure. Efficiency in this form can be regarded as a multi-criteria based metric.

The DEA efficiency measure is defined as a ratio of a weighted sum of outputs to a weighted sum of inputs. This requires a set of (objective) weights to be defined. DEA evades ad-hoc judgments, as for each DMU the most favorable weights are chosen. With such a choice, the

weights will generally differ for the various DMUs. However, a DMU that proves to be inefficient with respect to other ones even with the most favorable weights cannot call upon the fact that this depends on the choice of weights. The higher the efficiency ratio is, the more efficient the DMU.

The most favorable weights are chosen as the ones which maximize the efficiency ratio of the DMU considered, subject to the constraint that the efficiency ratios of all DMUs, computed with the same particular weights, have an upper bound of one. Therefore, an efficiency measure equal to one characterizes the efficient DMUs: at least with the most favorable weights, the other ones in the set cannot dominate these DMUs.

Let us have n DMUs, each DMU j ($j = 1,...,n$) produces with m different resources s different products. DMU j_0 needs the quantity x_{ij0} of the resource i ($i = 1,...,m$) to produce the quantity y_{rj0} of the product r ($r = 1,...,t$). The fractional problem mentioned above could be converted into an equivalent linear programming problem, which can be solved easily, for example by Simplex algorithm. Using the input-oriented form, we obtain the input-oriented CRS (constant returns to scale) linear model presented in equation 1.

$$max \sum_{r=1}^{t} u_r y_{rj_0} \qquad (1)$$

subject to

$$\begin{aligned} \sum_{i=1}^{m} v_i x_{ij_0} &= 1, \\ \sum_{r=1}^{t} u_r y_{rj} - \sum_{i=1}^{m} v_i x_{ij} &\le 0, \qquad j = 1,...,n, \\ -u_r &\le -\varepsilon, \qquad r = 1,...,t, \\ -v_i &\le -\varepsilon, \qquad i = 1,...,m. \end{aligned}$$

v_i and u_r are the input and output weights ($i = 1,...,m$, $r = 1,...,t$), respectively. The dual problem looks like:

$$min\, z_0 - \varepsilon \sum_{r=1}^{t} s_r^+ - \varepsilon \sum_{i=1}^{m} s_r^- \qquad (2)$$

subject to

$$
\begin{aligned}
x_{ij_0} z_0 - s_i^- - \sum_{j=1}^{n} x_{ij} \lambda_j &= 0, \qquad i = 1,...,m, \\
-s_r^+ + \sum_{j=1}^{n} y_{rj} \lambda_j &= y_{rj_0}, \qquad r = 1,...,t, \\
\lambda_j &\geq 0, \qquad j = 1,...,n, \\
s_i^- &\geq 0, \qquad i = 1,...,m, \\
s_r^+ &\geq 0, \qquad r = 1,...,t.
\end{aligned}
$$

This gives a piecewise linear production surface (the so-called efficiency frontier), which is a production frontier from an economic point of view: it represents the maximum output empirically obtainable from a DMU given its level of inputs. At the same time, it represents the minimum amount of input required to achieve the given output levels. DEA-models measure the relative distance between the DMUs and this efficiency frontier. The evaluated distance describes the efficiency of the given DMUs. More precisely, the input-oriented models focus on the maximum radial movement toward the frontier through a reduction of all inputs, whereas the output-oriented ones consider the maximum radial movement via an augmentation of all outputs. $0 \leq z_0 \leq 1$ is the corresponding efficiency value; the higher this value, the more efficient is DMU j_0. For $z_0 = 1$ and $s_i^-, s_r^+ = 0,\ i = 1,...,m,\ r = 1,...,t$ DMU j_0 is efficient.

Though created to evaluate the efficiency of non-profit organizations, soon afterwards DEA was applied to measure the efficiency of any organizational unit, for example, it has largely been used to compare the performance of different bank branches or airlines.

An important feature of DEA is its ability to both verify, if a DMU is efficient, relative to the other DMUs, and also suggest for the inefficient ones a virtual DMU that they could imitate in order to improve their efficiency. Additionally, for each inefficient DMU a set of peer units is detected, which are efficient with the inefficient DMU's weights. The peer units are associated with the strictly positive multipliers λ_i. Therefore, for each inefficient DMU j_0 it is possible to build a composite DMU with outputs

$$\sum_{j=1}^{n} \lambda_j y_{rj} \qquad (3)$$

and inputs

$$\sum_{j=1}^{n} \lambda_j x_{ij} \qquad (4)$$

that outperforms DMU j_0 and lies on the efficiency frontier. As a consequence, DEA enables an analysis of the weaknesses and strengths of each specific DMU and enables policy makers to search for improvements.

The work of Charnes et al. (Charnes et al. (1978)) is based on the seminal paper by Farrell (Farell (1957)) on concepts of efficiency and their computation. On the same basis, another researcher, J.N. Boles (Boles (1971)), developed the concept of DEA seven years before the work of Charnes et al. was published, but this was hardly recognized (see (Forsund and Sarafoglou (2002)) for the historical development of DEA).

In 1983, the concept of constant returns to scale was softened by Faere et al. (Faere et al. (1983)) and in 1984 by Banker et al. (Banker et al. (1984)) who formulated the variable returns to scale (VRS)-model. The main differences to the CRS-model (Eqs. 1 and 2) are the addition of the convexity constraint into the dual, and that the hyperplanes which form the efficiency frontier are not necessarily going through the origin.

It holds that

$$z_0^{CRS} \le z_0^{VRS} \quad \Rightarrow \quad z_0^{CRS} \big/ z_0^{VRS} \le 1 \,. \tag{5}$$

The corresponsing ratio is defined as scale efficiency. It is an indicator for optimal DMU size; the VRS efficiency is called technical efficiency and is an indicator of the performance considering the given size. The CRS efficiency is called overall efficiency.

A variety of models have now been developed for implementing the concepts of DEA, which differ for example in the choices of orientation, in the structures of the efficiency frontier, in the assumptions concerning the return to scale or in the measurement methods for the evaluation of the distance to the efficiency frontier (see (Ali and Seiford (1993)) for a survey). Some DEA models allow incorporating stochastic (Gstach (1998)) or qualitative data (Banker and Morey (1986), Cook et al. (1996)). Ecological models consider pollution as special (negative) output components (Dyckhoff and Allen (2001)). Other models consider ex-ante data or expert-knowledge concerning the weights (Allen et al. (1997)).

When applying DEA indicators are needed. The indicators, which are defined as “inputs”, should ideally be as small as possible. The indicators defined, as “outputs” should ideally be as large as possible.

In the problem at hand of comparing or benchmarking EU-countries with respect to health transition probabilities one could use the results of the panel regression analysis. The country specific coefficients could serve as indicators. The coefficients for transition

probabilities into favourable health states (*very good* and *good*) are defined as outputs and the ones associated with unfavourable health states (*death* and *residential care*) are defined as inputs.

5 Results

In the following, we present results for three countries – Belgium, Germany, and UK. All results are in single years of age, restricted to the age group 65-86, and calculated separately for both sexes. As outlined above, transitions between health states “Very good”, “Good”, “Fair”, “Bad” (including the ECHP category “Very bad”), “Staying in residential care” plus the absorbing state ”Dead” are considered. We technically allowed transitions between almost all health states; the only exception being that we excluded ways back from residential care into households, i.e. into health state “Very good”, “Good”, “Fair”, or “Bad”. In addition to transition probabilities we provide tables with calculated head counts in each cell. Finally, we present a set of tables with life expectancies and healthy life expectancies derived from those. Before commenting on results for each country, we summarize some general features. Table 11 to Table 67 present the results by country.

The Stone-algorithm does not guarantee that the resulting values of the unknowns are non-negative. As negative transition probabilities are meaningless, this property caused a lot of problems during the calculation process (especially when it came to interpreting the results in a meaningful way) and was one of the main reasons for smoothing the data. As smoothing over three years of age or three periods did not improve the course of probabilities with increasing age very much, we concentrated on results smoothed over 5-years of age and all periods. All results discussed below were achieved using the Stone-method with variable sums of rows and columns, as this technique produced a lower number of “unreasonable” probabilities. Using variable sums of rows and columns, of course, can be criticised: The available information is devalued, and the relation between estimated and real (even though unobserved) transitions might get looser compared to using fixed sums.

5.1 General characteristics

Estimated transition probabilities evolve less smoothly with increasing age than transition probabilities from Work Package III. This result was to be expected as WP III used a probit function approach and parameterised age. Work Package IV in contrast estimates probabilities separately for each age. By using the probit function approach with age being the only explanatory variable, estimated transitions are forced into a smooth form and can evolve with increasing age only in a certain way, i.e. rapid changes between steeper and less steep sections cannot result from this functional form.

Transition probabilities are not consistently lower than estimated in Work Package III. The direction of deviations varies e.g. with age. Examples are probabilities for staying in bad health, especially for women. As Work Package III for all three countries estimated probabilities conditional on no transition into residential care, on average lower probabilities had to be expected: Starting from one state of health, transition probabilities into all health

states considered plus death have to sum up to unity. A direct comparison between WP III and WP IV results on transitions into institutions is hampered by differing states of origin: In WP III, all origins are collapsed, while WP IV estimates transitions from all possible four states of health, “Very good”, “Good”, “Fair”, or “Bad” separately. Thus, transitions from “Bad” are likely to be higher, other transitions into residential care are likely to be lower than estimated in WP III, as can be seen in UK and Belgium.

Discrepancies between WP III results and WP IV results are higher in higher age. As WP III estimates transitions conditional on staying out of residential care, and in reality transitions into residential care are more likely in old age, this result is plausible.

Discrepancies between WP III results and WP IV results are higher for women. We have not yet found an interpretation for this result.

Life expectancies (at the age 65) derived from WP IV transitions tend to be lower than WP V. Calculations in WP V, both unadjusted and adjusted with mortality tables, yield higher life expectancies than WP IV. Differences between WP V and WP IV results can be seen for both sexes, but more pronounced for women. We have to note, though, that the calculation procedures are not completely comparable, as Khoman and Weale (2006) calculate their life expectancies starting at the age 16 and assume a life expectancy of 100, while our calculations are confined to elderly people assuming a life expectancy of 90 due to lack of observations for older persons (The comparison refers to “adjusted” (healthy) life expectancies in Khoman and Weale 2006).

Comparing healthy life expectancies (again at the age of 65) derived from WP IV transitions to those derived from WP V, we find large sex- and country specific differences.

As the estimation approach allows a considerable degree of freedom, the results have to be considered with caution. In order to achieve results that are compatible with the logic of health transitions, the applied method (Stone-algorithm) had to be implemented in a way allowing a high degree of freedom. I.e., we had to allow the sums of columns and rows to be variable rather than fixed. Using the original version of the Stone-method resulted in some implausible results, like increasing probabilities to move to better health states with increasing age in Germany. We assume that better data quality would allow to reduce this degree of variability, which in turn would allow to produce more reliable results.

5.2 Country specific results[11]

United Kingdom

Some transition probabilities for UK evolve smoother with increasing age than results for Germany or Belgium, e.g. transitions starting from “Very good” or “Good” health. Results for transitions out of bad health, however, seem a bit more volatile than those coming from (very) good health.

A possible explanation for smoother results is that residential care data provided were not derived from single year observations, but were calculated from two observation years, 1994 and 2001. Thus, our raw data were already smoother than those for other countries. But if this explains why British transition probabilities are comparatively smooth, it does not explain why probabilities starting from better health states are smooth compared to the other two countries, while those “closer to residential care” are relatively volatile.

Belgium

Transition probabilities on average are in good correspondence to results achieved from WP III. Added over all calculated probabilities for each country, the sum of squares of all relative deviations from respective WP III transitions is smaller for Belgium than for UK or Germany. Transitions from “Very good” to “Very good” or “Good” health and from “Bad” to “Bad” or “Fair” health seem somewhat problematic, however, as they evolve less smoothly with increasing age. Furthermore, they deviate more from WP III results in higher age. This refers to men as well as to women.

Germany

Transition probabilities on average evolve less smoothly with increasing age than results for UK or Belgium. This is a problem first of all regarding “Very good” and “Good” health and transitions to next best or next worse health states. Regarding “Very good” health, a possible explanation is the extremely low number of observations in “Very good” health. Compared to other countries, “Very good” health above the age of 65 seems to be a much rarer event in Germany than for instance in UK. Less than 2% of all German males aged between 80 and 86 report “Very good” health compared to almost 14% in UK. Trials to collapse “Very good” and “Good” health into one health state did not improve results. As comparability to WP III results is one of the tasks of this work package, we decided to keep the same structure of

[11] Numerical results and their corresponding tables can be found in chapters 5.5 to 5.13.

health states as in WP III for all three countries, i.e. not to collapse “Very good” and “Good” health into one health state.

5.3 Policy implications: The example of reducing the time spent in Residential Care

Starting from our results (the transition matrices as a base scenario) suppose the policy maker’s goal is to reduce the amount of time an individual spends in residential care by 10% in average.

The time spent in residential care as well as the transition probabilities are results of our model. They are not variables a policy maker could influence directly. In order to achieve a reduction in the time spent in residential care, for instance one would have to implement policies that affect the transition probabilities, which in turn would yield a different amount of time spent in a final state.

As discussed in 4.9, in order to achieve a 10% reduction in the time spent in residential care, various policies would have to affect the transition probabilities between states of health, which in turn would yield a different outcome in our model, i.e. the desired reduction in time spent in residential care.

Policy scenario 1 focuses on the transition from any given health status into residential care. The idea is to implement policies that positively influence[12] the probability of such a direct transition in favor of a transition to the health state bad. An individual’s health is “improved” in such a way that his or her chance of not going directly into residential care is smaller and that the person could still stay at home.

Policy scenario 2 on the other hand takes a more encompassing approach. Again the ultimate goal is to reduce the time spent in residential care. The focus is not only on decreasing the probability of a direct transition into residential care in favor of a higher probability of transition to health state bad. Policy scenario 2 summarizes a number of policies, which aim at an overall improvement of health by increasing the probabilities of being in the same subsequent state of health as in the base scenario or even moving to a better subsequent state of health.

[12] increasing or decreasing probabilities is meant w.r.t. the results of our model

Put differently, policy scenario 1 could be summarized as “enabling individuals to stay at home” whereas policy scenario 2 could be summarized as “enabling individuals to stay at home and keeping them healthier”.

Assessing these scenarios in terms of our model would mean identifying the change in transition probabilities that would ultimately yield a 10% reduction in the time spent in residential care. Table 7 summarizes the results for policy scenario 1. Table 8 summarizes them for Policy scenario 2.

Table 7: Shift of probability in policy scenario 1

	Male (%)	Female (%)
Belgium	12.5	13.8
Germany	12.4	13.1
UK	12.0	12.6

Source: IHS HealthEcon (2006).

Table 8: Shift of probability in policy scenario 2

	Male (%)	Female (%)
Belgium	4.9	6.3
Germany	9,4	9.0
UK	5.4	5.6

Source: IHS HealthEcon (2006).

Assume we want to achieve a 10% reduction in the time spent in residential care by a Belgian male for instance.

Applying policy scenario 1, policies would have to decrease the probability of transition from any health state into residential care by 12.5% and increase his transition probability of going into health state bad by the same amount for men in Belgium.

Applying policy scenario 2 instead, the same reduction could be achieved by policies that result in an overall “shift” of 4.9%. Such policies would mean not only avoiding residential care but improving health in general. This would result in a general “shift” of probability towards transitions into more favorable states of health.

As shown in Table 9 Policy scenario 2 would also yield a small but significant increase in life expectancy and especially in healthy life expectancy

Table 9: Change in life expectancy and healthy life expectancy in policy scenario 2

	Life expectancy (LE) (in years)		Healthy life expectancy (HLE) (in years)		HLE/LE (%)	
	Male	Female	Male	Female	Male	Female
Belgium	+0.3	+0.3	+0.7	+1.2	+0.04	+0.06
Germany	+0.5	+0.5	+1.4	+1.4	+0.1	+0.1
UK	+0.3	+0.3	+0.8	+0.8	+0.04	+0.04

Source: IHS HealthEcon (2006).

To conclude: Our results show that in order to achieve the same reduction in time spent in residential care the second approach seems more realistic as the magnitude of the necessary changes in transition probabilities is significantly smaller. Moreover the more encompassing approach proves to be more successful in enhancing quality of life as represented by healthy life expectancy and life expectancy in general.

5.4 Results from the regressions

In the following, we look at the regression results in more detail (see tables in the appendix).

In Table 70 (subsequent health state: very good), Table 71 (subsequent health state: good) and Table 74 (subsequent health state: residential care) we observe a negative coefficient of the gender dummy compared to a positive coefficient in Table 72 (subsequent health state: fair) and Table 73 (subsequent health state: bad).

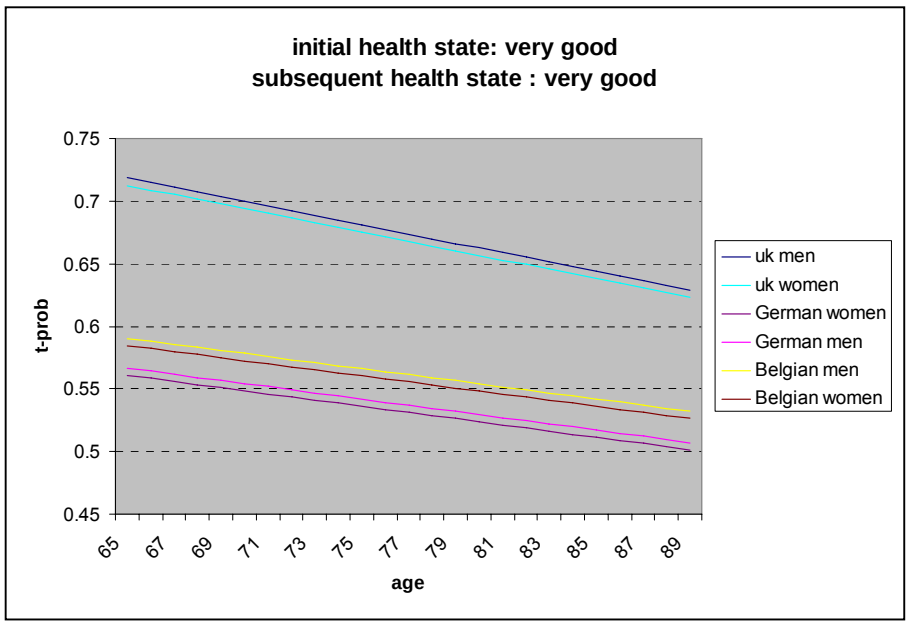
Table 75 and Table 76 (subsequent health state: death) show a negative gender effect, which is consistent with a higher life expectancy of women. Table 72 and Table 73 show a positive gender effect, which is consistent with a generally more pessimistic self-assessment of women, a result that is well known in the literature.

As far as ageing is concerned all tables display the correct sign, which means that the probability of entering into a worse health state is increasing with age. In almost all tables significant country differences can be seen. However it is not possible to identify a clear best- or underperformer in all health state categories.

The initial health state has a significant and systematic influence on the transition probabilities. Hence the initial health states clearly influence future health states.

Figure 3 for example shows the probability of staying in the state *very good*. A significant difference between the UK, Germany and Belgium can be observed. The probability of staying in very good health is highest for UK men and women, followed by Germans and Belgians.

Figure 3: Transition probabilities from health state 'very good' to 'very good'



Source: IHS HealthEcon (2006).

Some transition probability tables indicate non-linearities, which can be captured by including non-linear terms in the regression. This however did not improve the results.

The health state *residential care* is an absorbing state. Hence we separately modeled transition probabilities conditional on being in residential care initially. In Table 74 a significant gender effect as well as a significant age effect can be observed. Germany has a lower and Belgium a higher transition probability compared to the UK. Note that such a difference can be the result of different definitions of residential care. It is not necessarily a result of the health care systems.

The probability of death while in residential care is lowest in Germany and highest in Belgium (see Table 10), the probability of death while in all other health states is lowest in UK.

Table 10: Country-dependent coefficients (UK is reference)

	Subsequent health state						
	Very good	Good	Fair	Bad	RC	Death	From RC to death
UK	reference						
Germany	-0.01517	0.102	0.072	-0.069	-0.008	0.045	-0.830
Belgium	-0.1278	0.069	-0.011	0.093	-0.239	0.221	0.389

Source: IHS HealthEcon (2006).

5.5 Transition probabilities: United Kingdom

Table 11: Transition probabilities for men from "Very good" to other health states – UK

	Very Good			Good			Fair			Bad			Residential care			Death		
Men	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	0.5775	0.5799	0.5824	0.3316	0.3339	0.3361	0.0644	0.0655	0.0666	0.0111	0.0116	0.0120	0.0002	0.0003	0.0003	0.0084	0.0089	0.0094
66	0.5701	0.5722	0.5743	0.3379	0.3399	0.3418	0.0649	0.0659	0.0668	0.0117	0.0121	0.0125	0.0002	0.0003	0.0004	0.0092	0.0097	0.0101
67	0.5669	0.5688	0.5707	0.3375	0.3393	0.3410	0.0676	0.0685	0.0693	0.0122	0.0126	0.0130	0.0003	0.0004	0.0004	0.0101	0.0105	0.0109
68	0.5576	0.5596	0.5615	0.3442	0.3461	0.3479	0.0678	0.0687	0.0696	0.0128	0.0132	0.0136	0.0004	0.0004	0.0005	0.0116	0.0120	0.0125
69	0.5462	0.5482	0.5502	0.3522	0.3540	0.3559	0.0691	0.0701	0.0710	0.0137	0.0141	0.0145	0.0005	0.0006	0.0006	0.0126	0.0131	0.0136
70	0.5350	0.5371	0.5392	0.3573	0.3592	0.3612	0.0722	0.0732	0.0741	0.0147	0.0152	0.0156	0.0006	0.0007	0.0008	0.0141	0.0146	0.0151
71	0.5250	0.5271	0.5293	0.3610	0.3631	0.3651	0.0755	0.0766	0.0776	0.0155	0.0160	0.0164	0.0008	0.0009	0.0010	0.0158	0.0164	0.0169
72	0.5108	0.5131	0.5153	0.3740	0.3762	0.3784	0.0749	0.0760	0.0771	0.0158	0.0163	0.0168	0.0010	0.0011	0.0013	0.0167	0.0172	0.0178
73	0.5013	0.5036	0.5060	0.3763	0.3786	0.3809	0.0788	0.0800	0.0812	0.0166	0.0171	0.0177	0.0013	0.0014	0.0016	0.0186	0.0192	0.0198
74	0.4903	0.4928	0.4952	0.3807	0.3831	0.3855	0.0815	0.0827	0.0840	0.0176	0.0182	0.0188	0.0016	0.0018	0.0020	0.0208	0.0215	0.0222
75	0.4734	0.4759	0.4785	0.3926	0.3952	0.3977	0.0835	0.0849	0.0863	0.0179	0.0185	0.0191	0.0020	0.0022	0.0024	0.0225	0.0233	0.0240
76	0.4646	0.4673	0.4701	0.3951	0.3979	0.4007	0.0861	0.0875	0.0890	0.0184	0.0191	0.0198	0.0025	0.0028	0.0030	0.0245	0.0254	0.0262
77	0.4703	0.4732	0.4761	0.3854	0.3883	0.3912	0.0861	0.0877	0.0893	0.0190	0.0198	0.0205	0.0030	0.0033	0.0036	0.0268	0.0277	0.0286
78	0.4558	0.4587	0.4616	0.3921	0.3952	0.3982	0.0902	0.0918	0.0935	0.0191	0.0199	0.0207	0.0032	0.0035	0.0039	0.0299	0.0308	0.0318
79	0.4524	0.4555	0.4586	0.3888	0.3920	0.3952	0.0923	0.0941	0.0959	0.0188	0.0197	0.0206	0.0037	0.0040	0.0044	0.0336	0.0346	0.0357
80	0.4480	0.4512	0.4544	0.3873	0.3907	0.3941	0.0923	0.0942	0.0962	0.0200	0.0209	0.0219	0.0040	0.0044	0.0049	0.0373	0.0385	0.0396
81	0.4499	0.4532	0.4565	0.3834	0.3869	0.3904	0.0913	0.0933	0.0953	0.0197	0.0206	0.0216	0.0043	0.0048	0.0053	0.0399	0.0411	0.0423
82	0.4241	0.4273	0.4306	0.3963	0.3999	0.4035	0.0961	0.0982	0.1003	0.0205	0.0216	0.0226	0.0047	0.0051	0.0056	0.0466	0.0479	0.0491
83	0.4249	0.4285	0.4322	0.3877	0.3917	0.3956	0.0939	0.0963	0.0986	0.0232	0.0244	0.0255	0.0056	0.0062	0.0068	0.0515	0.0530	0.0544
84	0.4139	0.4176	0.4214	0.3975	0.4017	0.4058	0.0910	0.0934	0.0959	0.0247	0.0259	0.0272	0.0060	0.0067	0.0073	0.0531	0.0546	0.0562
85	0.4205	0.4246	0.4286	0.3800	0.3844	0.3889	0.0965	0.0992	0.1018	0.0247	0.0261	0.0274	0.0067	0.0074	0.0082	0.0566	0.0583	0.0600
86	0.3994	0.4035	0.4076	0.3966	0.4012	0.4059	0.0951	0.0980	0.1008	0.0257	0.0272	0.0286	0.0068	0.0075	0.0083	0.0608	0.0626	0.0644

Source: IHS HealthEcon (2006).

Table 12: Transition probabilities for women from "Very good" to other health states – UK

	Very Good			Good			Fair			Bad			Residential care			Death		
Women	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	0.5525	0.5552	0.5579	0.3578	0.3602	0.3627	0.0631	0.0643	0.0654	0.0128	0.0133	0.0139	0.0002	0.0003	0.0004	0.0061	0.0067	0.0072
66	0.5499	0.5522	0.5546	0.3605	0.3626	0.3647	0.0636	0.0646	0.0657	0.0129	0.0134	0.0139	0.0003	0.0004	0.0004	0.0063	0.0068	0.0073
67	0.5411	0.5432	0.5453	0.3662	0.3681	0.3701	0.0661	0.0670	0.0679	0.0134	0.0138	0.0143	0.0004	0.0004	0.0005	0.0069	0.0074	0.0078
68	0.5361	0.5382	0.5404	0.3660	0.3680	0.3700	0.0694	0.0704	0.0713	0.0141	0.0145	0.0150	0.0005	0.0006	0.0007	0.0078	0.0083	0.0088
69	0.5302	0.5324	0.5346	0.3676	0.3697	0.3717	0.0717	0.0727	0.0738	0.0147	0.0152	0.0157	0.0007	0.0008	0.0009	0.0087	0.0092	0.0097
70	0.5164	0.5186	0.5209	0.3779	0.3801	0.3822	0.0734	0.0745	0.0755	0.0152	0.0157	0.0162	0.0009	0.0011	0.0012	0.0095	0.0100	0.0106
71	0.5020	0.5044	0.5067	0.3837	0.3860	0.3882	0.0785	0.0797	0.0808	0.0167	0.0172	0.0177	0.0013	0.0015	0.0016	0.0107	0.0113	0.0119
72	0.5013	0.5038	0.5063	0.3820	0.3844	0.3868	0.0786	0.0798	0.0811	0.0174	0.0180	0.0185	0.0018	0.0020	0.0022	0.0113	0.0120	0.0126
73	0.4850	0.4875	0.4900	0.3925	0.3950	0.3974	0.0820	0.0833	0.0846	0.0183	0.0189	0.0195	0.0023	0.0025	0.0027	0.0121	0.0128	0.0135
74	0.4781	0.4807	0.4833	0.3923	0.3949	0.3975	0.0860	0.0873	0.0887	0.0192	0.0198	0.0204	0.0031	0.0034	0.0036	0.0131	0.0139	0.0146
75	0.4704	0.4731	0.4758	0.3959	0.3986	0.4013	0.0870	0.0884	0.0899	0.0198	0.0205	0.0212	0.0040	0.0043	0.0046	0.0143	0.0151	0.0159
76	0.4623	0.4650	0.4678	0.4004	0.4032	0.4060	0.0876	0.0890	0.0905	0.0203	0.0210	0.0217	0.0049	0.0053	0.0056	0.0156	0.0165	0.0173
77	0.4529	0.4557	0.4585	0.4038	0.4067	0.4096	0.0899	0.0915	0.0930	0.0213	0.0220	0.0228	0.0059	0.0063	0.0067	0.0169	0.0178	0.0187
78	0.4576	0.4605	0.4635	0.3940	0.3971	0.4001	0.0912	0.0928	0.0945	0.0217	0.0225	0.0233	0.0070	0.0075	0.0080	0.0187	0.0196	0.0206
79	0.4449	0.4478	0.4507	0.4045	0.4075	0.4105	0.0915	0.0932	0.0949	0.0213	0.0221	0.0230	0.0076	0.0081	0.0086	0.0203	0.0213	0.0222
80	0.4347	0.4376	0.4406	0.4039	0.4070	0.4102	0.0967	0.0985	0.1003	0.0228	0.0237	0.0246	0.0089	0.0095	0.0101	0.0226	0.0237	0.0247
81	0.4350	0.4381	0.4412	0.3978	0.4011	0.4043	0.0984	0.1003	0.1022	0.0227	0.0236	0.0245	0.0105	0.0112	0.0118	0.0246	0.0258	0.0269
82	0.4239	0.4269	0.4300	0.3992	0.4026	0.4059	0.1028	0.1048	0.1067	0.0230	0.0239	0.0249	0.0117	0.0124	0.0131	0.0282	0.0294	0.0306
83	0.4054	0.4086	0.4117	0.4098	0.4134	0.4169	0.1031	0.1051	0.1072	0.0255	0.0265	0.0276	0.0137	0.0145	0.0152	0.0307	0.0320	0.0332
84	0.4010	0.4045	0.4079	0.4053	0.4091	0.4129	0.1038	0.1060	0.1082	0.0270	0.0281	0.0293	0.0169	0.0178	0.0188	0.0330	0.0344	0.0358
85	0.3907	0.3943	0.3979	0.4064	0.4105	0.4145	0.1054	0.1078	0.1102	0.0279	0.0291	0.0303	0.0195	0.0206	0.0216	0.0362	0.0378	0.0393
86	0.3754	0.3793	0.3832	0.4058	0.4102	0.4147	0.1105	0.1132	0.1159	0.0308	0.0322	0.0335	0.0235	0.0248	0.0260	0.0387	0.0404	0.0421

Source: IHS HealthEcon (2006).

Table 13: Transition probabilities for men from "Good" to other health states – UK

	Very Good			Good			Fair			Bad			Residential care			Death		
Men	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	0.1607	0.1617	0.1627	0.6224	0.6239	0.6254	0.1778	0.1789	0.1799	0.0256	0.0260	0.0265	0.0003	0.0003	0.0004	0.0089	0.0093	0.0096
66	0.1569	0.1578	0.1586	0.6256	0.6269	0.6282	0.1770	0.1779	0.1788	0.0266	0.0270	0.0274	0.0003	0.0003	0.0004	0.0097	0.0100	0.0103
67	0.1549	0.1556	0.1564	0.6197	0.6208	0.6220	0.1833	0.1841	0.1849	0.0278	0.0281	0.0285	0.0003	0.0004	0.0004	0.0106	0.0109	0.0111
68	0.1506	0.1514	0.1522	0.6227	0.6239	0.6251	0.1817	0.1826	0.1834	0.0289	0.0293	0.0297	0.0004	0.0005	0.0005	0.0121	0.0124	0.0127
69	0.1447	0.1455	0.1463	0.6247	0.6259	0.6271	0.1828	0.1837	0.1845	0.0305	0.0309	0.0313	0.0005	0.0006	0.0006	0.0131	0.0134	0.0137
70	0.1393	0.1401	0.1408	0.6213	0.6225	0.6237	0.1880	0.1889	0.1897	0.0326	0.0330	0.0334	0.0007	0.0007	0.0008	0.0146	0.0148	0.0151
71	0.1349	0.1356	0.1364	0.6167	0.6180	0.6192	0.1939	0.1948	0.1957	0.0339	0.0343	0.0347	0.0008	0.0009	0.0010	0.0161	0.0164	0.0167
72	0.1286	0.1294	0.1302	0.6260	0.6273	0.6286	0.1894	0.1903	0.1913	0.0343	0.0347	0.0351	0.0010	0.0011	0.0011	0.0168	0.0172	0.0175
73	0.1244	0.1252	0.1259	0.6194	0.6207	0.6220	0.1968	0.1978	0.1987	0.0357	0.0361	0.0366	0.0011	0.0012	0.0013	0.0186	0.0190	0.0193
74	0.1198	0.1206	0.1214	0.6158	0.6171	0.6184	0.2008	0.2018	0.2028	0.0375	0.0380	0.0385	0.0014	0.0015	0.0016	0.0207	0.0211	0.0214
75	0.1130	0.1138	0.1146	0.6198	0.6211	0.6224	0.2018	0.2028	0.2038	0.0376	0.0381	0.0386	0.0016	0.0017	0.0019	0.0221	0.0225	0.0228
76	0.1096	0.1104	0.1111	0.6156	0.6170	0.6183	0.2061	0.2072	0.2082	0.0386	0.0391	0.0396	0.0019	0.0020	0.0021	0.0240	0.0244	0.0248
77	0.1124	0.1132	0.1140	0.6054	0.6068	0.6082	0.2086	0.2097	0.2108	0.0405	0.0410	0.0415	0.0022	0.0023	0.0024	0.0266	0.0270	0.0275
78	0.1074	0.1082	0.1091	0.6029	0.6045	0.6060	0.2135	0.2147	0.2159	0.0400	0.0405	0.0411	0.0026	0.0027	0.0029	0.0289	0.0294	0.0298
79	0.1063	0.1072	0.1081	0.5952	0.5968	0.5984	0.2184	0.2197	0.2210	0.0395	0.0402	0.0408	0.0029	0.0031	0.0033	0.0326	0.0331	0.0336
80	0.1050	0.1060	0.1069	0.5900	0.5917	0.5934	0.2180	0.2193	0.2207	0.0420	0.0427	0.0434	0.0034	0.0036	0.0038	0.0361	0.0367	0.0372
81	0.1042	0.1052	0.1062	0.5849	0.5867	0.5886	0.2190	0.2205	0.2219	0.0424	0.0432	0.0439	0.0039	0.0041	0.0044	0.0397	0.0403	0.0409
82	0.0949	0.0959	0.0969	0.5833	0.5852	0.5872	0.2230	0.2246	0.2262	0.0431	0.0439	0.0447	0.0044	0.0047	0.0050	0.0451	0.0457	0.0464
83	0.0960	0.0971	0.0981	0.5738	0.5758	0.5779	0.2197	0.2214	0.2231	0.0490	0.0499	0.0508	0.0049	0.0052	0.0055	0.0499	0.0506	0.0513
84	0.0924	0.0935	0.0947	0.5807	0.5829	0.5851	0.2113	0.2131	0.2149	0.0517	0.0527	0.0536	0.0056	0.0060	0.0063	0.0510	0.0518	0.0526
85	0.0944	0.0956	0.0968	0.5589	0.5612	0.5635	0.2256	0.2276	0.2295	0.0525	0.0535	0.0545	0.0062	0.0065	0.0069	0.0548	0.0557	0.0565
86	0.0868	0.0881	0.0895	0.5670	0.5696	0.5723	0.2183	0.2205	0.2227	0.0538	0.0549	0.0561	0.0073	0.0077	0.0082	0.0581	0.0591	0.0601

Source: IHS HealthEcon (2006).

Table 14: Transition probabilities for women from "Good" to other health states – UK

	Very Good			Good			Fair			Bad			Residential care			Death		
Women	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	0.1313	0.1321	0.1330	0.6412	0.6424	0.6437	0.1831	0.1840	0.1849	0.0329	0.0333	0.0338	0.0002	0.0002	0.0003	0.0075	0.0078	0.0081
66	0.1307	0.1314	0.1321	0.6420	0.6431	0.6443	0.1830	0.1839	0.1847	0.0330	0.0333	0.0337	0.0002	0.0003	0.0003	0.0077	0.0079	0.0082
67	0.1266	0.1272	0.1279	0.6411	0.6421	0.6431	0.1870	0.1878	0.1886	0.0337	0.0340	0.0344	0.0003	0.0003	0.0004	0.0083	0.0085	0.0088
68	0.1243	0.1249	0.1256	0.6327	0.6337	0.6348	0.1950	0.1958	0.1965	0.0352	0.0355	0.0359	0.0004	0.0004	0.0005	0.0094	0.0096	0.0099
69	0.1216	0.1222	0.1229	0.6274	0.6285	0.6295	0.2001	0.2009	0.2017	0.0367	0.0371	0.0375	0.0005	0.0006	0.0006	0.0105	0.0108	0.0110
70	0.1157	0.1163	0.1170	0.6304	0.6315	0.6326	0.2010	0.2019	0.2027	0.0376	0.0379	0.0383	0.0007	0.0008	0.0008	0.0113	0.0116	0.0119
71	0.1100	0.1107	0.1113	0.6230	0.6242	0.6253	0.2099	0.2108	0.2116	0.0403	0.0407	0.0411	0.0009	0.0010	0.0011	0.0125	0.0128	0.0131
72	0.1103	0.1109	0.1116	0.6191	0.6202	0.6213	0.2103	0.2112	0.2121	0.0422	0.0426	0.0430	0.0012	0.0013	0.0014	0.0134	0.0137	0.0140
73	0.1038	0.1045	0.1051	0.6189	0.6200	0.6212	0.2145	0.2154	0.2163	0.0437	0.0441	0.0445	0.0015	0.0016	0.0017	0.0140	0.0144	0.0147
74	0.1008	0.1015	0.1021	0.6097	0.6109	0.6121	0.2231	0.2240	0.2249	0.0456	0.0460	0.0465	0.0019	0.0020	0.0021	0.0152	0.0156	0.0159
75	0.0986	0.0992	0.0999	0.6084	0.6096	0.6109	0.2234	0.2244	0.2254	0.0468	0.0473	0.0478	0.0025	0.0026	0.0027	0.0165	0.0169	0.0172
76	0.0961	0.0967	0.0974	0.6084	0.6096	0.6109	0.2230	0.2240	0.2250	0.0477	0.0481	0.0486	0.0030	0.0031	0.0032	0.0180	0.0184	0.0188
77	0.0927	0.0933	0.0940	0.6041	0.6054	0.6067	0.2265	0.2276	0.2286	0.0497	0.0502	0.0507	0.0035	0.0037	0.0038	0.0194	0.0198	0.0202
78	0.0947	0.0954	0.0961	0.5928	0.5941	0.5954	0.2312	0.2323	0.2334	0.0511	0.0517	0.0522	0.0042	0.0044	0.0045	0.0218	0.0222	0.0226
79	0.0906	0.0913	0.0920	0.5978	0.5992	0.6006	0.2289	0.2301	0.2312	0.0498	0.0504	0.0510	0.0050	0.0052	0.0054	0.0233	0.0238	0.0243
80	0.0869	0.0876	0.0883	0.5860	0.5875	0.5889	0.2382	0.2394	0.2406	0.0528	0.0534	0.0540	0.0057	0.0059	0.0062	0.0257	0.0262	0.0267
81	0.0867	0.0874	0.0881	0.5766	0.5780	0.5795	0.2436	0.2448	0.2460	0.0531	0.0537	0.0544	0.0068	0.0071	0.0073	0.0284	0.0290	0.0295
82	0.0827	0.0835	0.0843	0.5678	0.5694	0.5710	0.2507	0.2520	0.2533	0.0533	0.0540	0.0546	0.0081	0.0084	0.0087	0.0321	0.0327	0.0333
83	0.0771	0.0779	0.0787	0.5689	0.5705	0.5722	0.2465	0.2479	0.2493	0.0581	0.0589	0.0596	0.0094	0.0098	0.0101	0.0344	0.0351	0.0357
84	0.0762	0.0770	0.0778	0.5607	0.5624	0.5641	0.2480	0.2494	0.2509	0.0617	0.0624	0.0632	0.0107	0.0110	0.0113	0.0371	0.0378	0.0384
85	0.0730	0.0738	0.0746	0.5546	0.5564	0.5582	0.2498	0.2514	0.2529	0.0635	0.0643	0.0651	0.0124	0.0128	0.0132	0.0406	0.0413	0.0420
86	0.0681	0.0690	0.0698	0.5409	0.5428	0.5448	0.2575	0.2592	0.2609	0.0693	0.0702	0.0711	0.0146	0.0150	0.0155	0.0429	0.0437	0.0445

Source: IHS HealthEcon (2006).

Table 15: Transition probabilities for men from "Fair" to other health states – UK

	Very Good			Good			Fair			Bad			Residential care			Death		
Men	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	0.0363	0.0369	0.0376	0.2839	0.2855	0.2871	0.5316	0.5334	0.5352	0.1216	0.1227	0.1237	0.0018	0.0019	0.0021	0.0190	0.0196	0.0201
66	0.0357	0.0363	0.0368	0.2852	0.2866	0.2880	0.5256	0.5272	0.5287	0.1258	0.1267	0.1277	0.0020	0.0022	0.0023	0.0206	0.0211	0.0216
67	0.0348	0.0354	0.0359	0.2772	0.2785	0.2797	0.5313	0.5327	0.5342	0.1277	0.1286	0.1295	0.0024	0.0025	0.0026	0.0219	0.0223	0.0228
68	0.0343	0.0348	0.0353	0.2785	0.2798	0.2810	0.5225	0.5239	0.5253	0.1324	0.1332	0.1340	0.0028	0.0029	0.0031	0.0250	0.0255	0.0259
69	0.0331	0.0336	0.0341	0.2775	0.2787	0.2800	0.5170	0.5184	0.5198	0.1376	0.1384	0.1393	0.0035	0.0037	0.0038	0.0268	0.0272	0.0277
70	0.0315	0.0320	0.0325	0.2700	0.2713	0.2726	0.5170	0.5184	0.5199	0.1433	0.1442	0.1452	0.0044	0.0046	0.0048	0.0289	0.0294	0.0299
71	0.0303	0.0308	0.0313	0.2629	0.2642	0.2655	0.5195	0.5210	0.5225	0.1456	0.1466	0.1475	0.0054	0.0056	0.0058	0.0313	0.0318	0.0323
72	0.0296	0.0301	0.0306	0.2698	0.2711	0.2724	0.5086	0.5101	0.5116	0.1476	0.1486	0.1496	0.0064	0.0066	0.0068	0.0330	0.0335	0.0340
73	0.0281	0.0287	0.0292	0.2604	0.2617	0.2631	0.5129	0.5145	0.5161	0.1497	0.1508	0.1518	0.0079	0.0082	0.0085	0.0356	0.0362	0.0367
74	0.0270	0.0275	0.0280	0.2547	0.2560	0.2574	0.5109	0.5125	0.5141	0.1541	0.1551	0.1562	0.0093	0.0095	0.0098	0.0387	0.0393	0.0399
75	0.0257	0.0262	0.0267	0.2556	0.2569	0.2583	0.5082	0.5099	0.5115	0.1531	0.1542	0.1552	0.0108	0.0111	0.0115	0.0411	0.0417	0.0423
76	0.0248	0.0254	0.0259	0.2503	0.2517	0.2531	0.5084	0.5101	0.5118	0.1543	0.1554	0.1565	0.0126	0.0130	0.0133	0.0438	0.0445	0.0451
77	0.0253	0.0258	0.0263	0.2422	0.2436	0.2451	0.5047	0.5065	0.5082	0.1593	0.1605	0.1617	0.0145	0.0149	0.0153	0.0481	0.0487	0.0494
78	0.0242	0.0247	0.0253	0.2388	0.2404	0.2419	0.5077	0.5095	0.5114	0.1549	0.1561	0.1574	0.0168	0.0172	0.0176	0.0513	0.0520	0.0527
79	0.0239	0.0245	0.0250	0.2327	0.2343	0.2359	0.5099	0.5118	0.5138	0.1510	0.1523	0.1536	0.0188	0.0193	0.0198	0.0570	0.0578	0.0585
80	0.0235	0.0241	0.0247	0.2275	0.2292	0.2308	0.5000	0.5020	0.5041	0.1584	0.1598	0.1612	0.0211	0.0216	0.0222	0.0625	0.0633	0.0641
81	0.0237	0.0243	0.0249	0.2249	0.2267	0.2285	0.4945	0.4967	0.4990	0.1571	0.1586	0.1601	0.0251	0.0257	0.0264	0.0670	0.0679	0.0688
82	0.0213	0.0219	0.0226	0.2194	0.2213	0.2232	0.4909	0.4933	0.4957	0.1562	0.1578	0.1594	0.0293	0.0300	0.0307	0.0747	0.0757	0.0766
83	0.0214	0.0221	0.0228	0.2120	0.2140	0.2160	0.4713	0.4739	0.4764	0.1727	0.1745	0.1762	0.0331	0.0340	0.0348	0.0805	0.0815	0.0826
84	0.0207	0.0214	0.0222	0.2139	0.2161	0.2183	0.4516	0.4544	0.4572	0.1819	0.1839	0.1858	0.0397	0.0407	0.0417	0.0823	0.0834	0.0846
85	0.0203	0.0211	0.0219	0.1969	0.1993	0.2018	0.4600	0.4632	0.4665	0.1774	0.1797	0.1819	0.0486	0.0499	0.0511	0.0854	0.0867	0.0881
86	0.0190	0.0199	0.0207	0.2009	0.2035	0.2061	0.4450	0.4484	0.4518	0.1816	0.1840	0.1864	0.0513	0.0527	0.0541	0.0901	0.0916	0.0931

Source: IHS HealthEcon (2006).

Table 16: Transition probabilities for women from "Fair" to other health states – UK

	Very Good			Good			Fair			Bad			Residential care			Death		
Women	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	0.0291	0.0297	0.0303	0.2798	0.2814	0.2830	0.5166	0.5185	0.5204	0.1509	0.1520	0.1532	0.0018	0.0020	0.0021	0.0158	0.0164	0.0170
66	0.0290	0.0296	0.0301	0.2801	0.2815	0.2828	0.5161	0.5176	0.5192	0.1514	0.1523	0.1533	0.0020	0.0022	0.0023	0.0163	0.0168	0.0173
67	0.0280	0.0284	0.0289	0.2765	0.2777	0.2789	0.5190	0.5204	0.5218	0.1523	0.1532	0.1541	0.0024	0.0025	0.0027	0.0173	0.0177	0.0182
68	0.0271	0.0276	0.0280	0.2666	0.2678	0.2689	0.5250	0.5263	0.5277	0.1549	0.1557	0.1566	0.0030	0.0032	0.0033	0.0190	0.0194	0.0199
69	0.0264	0.0269	0.0273	0.2602	0.2613	0.2624	0.5262	0.5275	0.5289	0.1583	0.1591	0.1600	0.0037	0.0039	0.0040	0.0209	0.0213	0.0217
70	0.0255	0.0259	0.0263	0.2608	0.2619	0.2630	0.5225	0.5238	0.5251	0.1600	0.1608	0.1617	0.0046	0.0048	0.0049	0.0224	0.0228	0.0232
71	0.0237	0.0241	0.0245	0.2501	0.2512	0.2523	0.5263	0.5276	0.5289	0.1660	0.1669	0.1677	0.0058	0.0060	0.0062	0.0237	0.0242	0.0246
72	0.0239	0.0243	0.0247	0.2468	0.2479	0.2490	0.5203	0.5217	0.5230	0.1721	0.1729	0.1738	0.0071	0.0073	0.0075	0.0254	0.0259	0.0263
73	0.0226	0.0229	0.0233	0.2437	0.2448	0.2459	0.5197	0.5210	0.5223	0.1745	0.1754	0.1763	0.0089	0.0092	0.0094	0.0261	0.0266	0.0271
74	0.0216	0.0220	0.0223	0.2341	0.2352	0.2363	0.5241	0.5254	0.5268	0.1773	0.1782	0.1791	0.0109	0.0112	0.0114	0.0276	0.0280	0.0285
75	0.0211	0.0215	0.0219	0.2319	0.2330	0.2341	0.5190	0.5203	0.5216	0.1808	0.1817	0.1826	0.0129	0.0132	0.0134	0.0298	0.0303	0.0308
76	0.0209	0.0213	0.0217	0.2318	0.2328	0.2339	0.5128	0.5141	0.5155	0.1820	0.1829	0.1838	0.0156	0.0159	0.0163	0.0324	0.0329	0.0334
77	0.0201	0.0205	0.0209	0.2266	0.2277	0.2288	0.5095	0.5109	0.5123	0.1860	0.1869	0.1879	0.0190	0.0193	0.0197	0.0341	0.0347	0.0352
78	0.0206	0.0209	0.0213	0.2193	0.2204	0.2215	0.5083	0.5098	0.5112	0.1868	0.1879	0.1889	0.0227	0.0231	0.0235	0.0373	0.0379	0.0385
79	0.0199	0.0203	0.0207	0.2216	0.2228	0.2240	0.5032	0.5047	0.5062	0.1829	0.1840	0.1850	0.0267	0.0271	0.0276	0.0405	0.0411	0.0418
80	0.0185	0.0189	0.0193	0.2096	0.2108	0.2120	0.5039	0.5055	0.5071	0.1876	0.1887	0.1898	0.0317	0.0322	0.0327	0.0432	0.0439	0.0445
81	0.0184	0.0188	0.0192	0.2032	0.2044	0.2057	0.5044	0.5061	0.5077	0.1852	0.1863	0.1875	0.0362	0.0368	0.0373	0.0469	0.0476	0.0483
82	0.0175	0.0179	0.0183	0.1965	0.1978	0.1990	0.5061	0.5078	0.5094	0.1816	0.1827	0.1839	0.0408	0.0414	0.0420	0.0517	0.0524	0.0531
83	0.0164	0.0169	0.0173	0.1951	0.1964	0.1977	0.4887	0.4904	0.4921	0.1942	0.1954	0.1966	0.0453	0.0460	0.0466	0.0542	0.0550	0.0557
84	0.0160	0.0164	0.0168	0.1876	0.1889	0.1903	0.4779	0.4797	0.4815	0.2007	0.2020	0.2033	0.0543	0.0551	0.0559	0.0570	0.0578	0.0586
85	0.0152	0.0156	0.0160	0.1819	0.1833	0.1847	0.4696	0.4716	0.4735	0.2019	0.2033	0.2047	0.0634	0.0643	0.0652	0.0610	0.0619	0.0628
86	0.0137	0.0141	0.0146	0.1702	0.1717	0.1732	0.4628	0.4648	0.4669	0.2119	0.2135	0.2150	0.0719	0.0729	0.0740	0.0619	0.0629	0.0639

Source: IHS HealthEcon (2006).

Table 17: Transition probabilities for men from "Bad" to other health states – UK

	Very Good			Good			Fair			Bad			Residential care			Death		
Men	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	0.0080	0.0085	0.0089	0.0690	0.0703	0.0717	0.2930	0.2954	0.2978	0.5330	0.5357	0.5385	0.0060	0.0063	0.0067	0.0823	0.0837	0.0850
66	0.0078	0.0082	0.0086	0.0681	0.0693	0.0704	0.2838	0.2859	0.2880	0.5389	0.5413	0.5437	0.0071	0.0074	0.0078	0.0867	0.0879	0.0891
67	0.0075	0.0079	0.0082	0.0653	0.0663	0.0673	0.2825	0.2843	0.2862	0.5391	0.5413	0.5435	0.0080	0.0083	0.0087	0.0907	0.0918	0.0929
68	0.0071	0.0075	0.0079	0.0634	0.0645	0.0655	0.2687	0.2706	0.2725	0.5421	0.5443	0.5466	0.0103	0.0107	0.0111	0.1012	0.1024	0.1035
69	0.0067	0.0070	0.0074	0.0612	0.0622	0.0632	0.2574	0.2593	0.2612	0.5489	0.5511	0.5534	0.0122	0.0127	0.0131	0.1065	0.1077	0.1089
70	0.0062	0.0066	0.0069	0.0580	0.0590	0.0600	0.2495	0.2513	0.2531	0.5535	0.5557	0.5580	0.0140	0.0144	0.0149	0.1118	0.1130	0.1141
71	0.0059	0.0062	0.0066	0.0556	0.0565	0.0575	0.2456	0.2473	0.2491	0.5510	0.5531	0.5553	0.0157	0.0162	0.0167	0.1194	0.1206	0.1217
72	0.0057	0.0060	0.0064	0.0565	0.0574	0.0583	0.2368	0.2386	0.2403	0.5510	0.5531	0.5553	0.0182	0.0187	0.0192	0.1250	0.1261	0.1273
73	0.0054	0.0057	0.0060	0.0537	0.0547	0.0556	0.2339	0.2357	0.2375	0.5463	0.5485	0.5506	0.0213	0.0218	0.0224	0.1324	0.1336	0.1348
74	0.0050	0.0053	0.0057	0.0510	0.0519	0.0528	0.2255	0.2272	0.2290	0.5458	0.5480	0.5502	0.0248	0.0254	0.0261	0.1408	0.1420	0.1432
75	0.0048	0.0051	0.0054	0.0509	0.0518	0.0527	0.2222	0.2239	0.2257	0.5375	0.5397	0.5419	0.0283	0.0290	0.0296	0.1492	0.1505	0.1517
76	0.0046	0.0049	0.0052	0.0490	0.0499	0.0509	0.2176	0.2195	0.2213	0.5309	0.5332	0.5355	0.0335	0.0342	0.0349	0.1570	0.1583	0.1596
77	0.0045	0.0048	0.0051	0.0459	0.0468	0.0478	0.2080	0.2099	0.2118	0.5283	0.5307	0.5331	0.0388	0.0397	0.0405	0.1667	0.1681	0.1695
78	0.0043	0.0046	0.0050	0.0451	0.0461	0.0471	0.2080	0.2100	0.2120	0.5118	0.5142	0.5167	0.0439	0.0448	0.0457	0.1787	0.1802	0.1817
79	0.0042	0.0046	0.0049	0.0433	0.0444	0.0454	0.2050	0.2071	0.2093	0.4895	0.4923	0.4950	0.0534	0.0545	0.0556	0.1955	0.1971	0.1988
80	0.0039	0.0043	0.0047	0.0402	0.0414	0.0425	0.1901	0.1924	0.1948	0.4857	0.4887	0.4918	0.0660	0.0674	0.0687	0.2039	0.2058	0.2077
81	0.0039	0.0042	0.0046	0.0387	0.0399	0.0410	0.1829	0.1854	0.1878	0.4719	0.4752	0.4784	0.0746	0.0761	0.0776	0.2172	0.2193	0.2213
82	0.0033	0.0037	0.0041	0.0364	0.0377	0.0389	0.1746	0.1772	0.1798	0.4519	0.4554	0.4588	0.0870	0.0888	0.0905	0.2350	0.2373	0.2395
83	0.0030	0.0034	0.0038	0.0320	0.0333	0.0346	0.1529	0.1557	0.1584	0.4625	0.4662	0.4700	0.0977	0.0997	0.1017	0.2392	0.2416	0.2440
84	0.0029	0.0032	0.0036	0.0315	0.0327	0.0340	0.1417	0.1443	0.1470	0.4761	0.4797	0.4833	0.0938	0.0957	0.0977	0.2419	0.2442	0.2466
85	0.0029	0.0033	0.0037	0.0294	0.0306	0.0319	0.1458	0.1485	0.1511	0.4657	0.4692	0.4728	0.0919	0.0939	0.0958	0.2521	0.2545	0.2569
86	0.0026	0.0030	0.0034	0.0289	0.0302	0.0315	0.1350	0.1378	0.1407	0.4601	0.4640	0.4679	0.1005	0.1027	0.1049	0.2597	0.2623	0.2649

Source: IHS HealthEcon (2006).

Table 18: Transition probabilities for women from "Bad" to other health states – UK

	Very Good			Good			Fair			Bad			Residential care			Death		
Women	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	0.0150	0.0157	0.0163	0.1100	0.1116	0.1131	0.3237	0.3262	0.3286	0.5046	0.5071	0.5097	0.0053	0.0056	0.0060	0.0327	0.0339	0.0350
66	0.0152	0.0157	0.0163	0.1105	0.1118	0.1131	0.3229	0.3250	0.3271	0.5040	0.5062	0.5084	0.0061	0.0065	0.0068	0.0338	0.0348	0.0358
67	0.0146	0.0151	0.0156	0.1087	0.1099	0.1111	0.3229	0.3248	0.3266	0.5040	0.5060	0.5080	0.0072	0.0076	0.0079	0.0358	0.0367	0.0375
68	0.0141	0.0146	0.0150	0.1039	0.1050	0.1062	0.3220	0.3239	0.3257	0.5052	0.5071	0.5091	0.0092	0.0096	0.0099	0.0390	0.0399	0.0407
69	0.0137	0.0141	0.0146	0.1004	0.1015	0.1026	0.3178	0.3196	0.3214	0.5078	0.5097	0.5117	0.0115	0.0119	0.0122	0.0422	0.0431	0.0440
70	0.0130	0.0135	0.0139	0.0994	0.1004	0.1015	0.3117	0.3135	0.3152	0.5098	0.5117	0.5136	0.0140	0.0144	0.0148	0.0457	0.0465	0.0474
71	0.0120	0.0124	0.0128	0.0936	0.0946	0.0957	0.3068	0.3085	0.3103	0.5170	0.5188	0.5207	0.0169	0.0173	0.0178	0.0474	0.0483	0.0492
72	0.0119	0.0123	0.0127	0.0907	0.0917	0.0927	0.2967	0.2983	0.3000	0.5249	0.5267	0.5285	0.0196	0.0201	0.0206	0.0501	0.0509	0.0518
73	0.0112	0.0115	0.0119	0.0888	0.0897	0.0907	0.2929	0.2945	0.2960	0.5273	0.5291	0.5308	0.0224	0.0228	0.0233	0.0515	0.0523	0.0532
74	0.0107	0.0111	0.0114	0.0849	0.0858	0.0867	0.2916	0.2932	0.2947	0.5272	0.5288	0.5305	0.0262	0.0267	0.0271	0.0537	0.0545	0.0553
75	0.0104	0.0107	0.0111	0.0828	0.0837	0.0846	0.2836	0.2851	0.2866	0.5292	0.5309	0.5325	0.0307	0.0312	0.0317	0.0576	0.0584	0.0592
76	0.0103	0.0106	0.0109	0.0823	0.0832	0.0840	0.2771	0.2786	0.2801	0.5267	0.5283	0.5300	0.0356	0.0362	0.0367	0.0623	0.0631	0.0639
77	0.0098	0.0101	0.0104	0.0793	0.0801	0.0810	0.2701	0.2716	0.2731	0.5284	0.5301	0.5318	0.0418	0.0424	0.0430	0.0648	0.0656	0.0665
78	0.0098	0.0101	0.0105	0.0754	0.0763	0.0771	0.2649	0.2664	0.2679	0.5247	0.5264	0.5281	0.0483	0.0490	0.0497	0.0709	0.0718	0.0727
79	0.0096	0.0100	0.0103	0.0767	0.0776	0.0786	0.2619	0.2635	0.2650	0.5111	0.5129	0.5147	0.0573	0.0581	0.0588	0.0770	0.0780	0.0789
80	0.0088	0.0092	0.0095	0.0710	0.0719	0.0729	0.2546	0.2563	0.2580	0.5078	0.5098	0.5117	0.0711	0.0720	0.0730	0.0797	0.0808	0.0818
81	0.0088	0.0091	0.0095	0.0682	0.0691	0.0701	0.2513	0.2530	0.2548	0.4947	0.4967	0.4987	0.0838	0.0848	0.0859	0.0861	0.0872	0.0883
82	0.0082	0.0086	0.0090	0.0651	0.0661	0.0671	0.2476	0.2494	0.2512	0.4766	0.4787	0.4808	0.1010	0.1022	0.1034	0.0938	0.0950	0.0962
83	0.0072	0.0076	0.0080	0.0606	0.0616	0.0627	0.2250	0.2269	0.2288	0.4847	0.4869	0.4892	0.1196	0.1210	0.1223	0.0947	0.0960	0.0973
84	0.0068	0.0072	0.0076	0.0568	0.0578	0.0589	0.2146	0.2165	0.2183	0.4924	0.4946	0.4968	0.1224	0.1238	0.1251	0.0989	0.1002	0.1015
85	0.0065	0.0069	0.0072	0.0549	0.0559	0.0569	0.2090	0.2108	0.2127	0.4913	0.4935	0.4957	0.1246	0.1260	0.1274	0.1056	0.1069	0.1081
86	0.0058	0.0061	0.0064	0.0501	0.0511	0.0521	0.2000	0.2019	0.2037	0.5022	0.5044	0.5066	0.1290	0.1305	0.1320	0.1047	0.1060	0.1074

Source: IHS HealthEcon (2006).

Table 19: Transition probabilities for men from "Residential care" to other health states – UK

	Residential care			Death		
Men	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	0.7599	0.7756	0.7913	0.2106	0.2244	0.2382
66	0.7416	0.7546	0.7676	0.2338	0.2454	0.2570
67	0.7569	0.7683	0.7797	0.2220	0.2317	0.2415
68	0.8072	0.8184	0.8296	0.1733	0.1816	0.1899
69	0.7087	0.7188	0.7289	0.2723	0.2812	0.2902
70	0.6629	0.6726	0.6824	0.3183	0.3274	0.3364
71	0.7089	0.7185	0.7280	0.2734	0.2815	0.2897
72	0.6243	0.6329	0.6415	0.3588	0.3671	0.3754
73	0.5682	0.5763	0.5844	0.4155	0.4237	0.4320
74	0.5383	0.5460	0.5537	0.4460	0.4540	0.4620
75	0.5200	0.5274	0.5348	0.4648	0.4726	0.4804
76	0.4593	0.4662	0.4731	0.5261	0.5338	0.5415
77	0.4436	0.4504	0.4572	0.5420	0.5496	0.5571
78	0.4169	0.4235	0.4301	0.5691	0.5765	0.5839
79	0.4311	0.4377	0.4444	0.5552	0.5623	0.5694
80	0.3791	0.3852	0.3913	0.6080	0.6148	0.6217
81	0.3578	0.3638	0.3697	0.6295	0.6362	0.6429
82	0.3808	0.3868	0.3928	0.6069	0.6132	0.6195
83	0.4059	0.4118	0.4176	0.5824	0.5882	0.5941
84	0.4188	0.4245	0.4302	0.5699	0.5755	0.5811
85	0.4466	0.4523	0.4580	0.5423	0.5477	0.5531
86	0.4506	0.4562	0.4619	0.5385	0.5438	0.5490

	Residential care			Death		
Women	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	0.8745	0.8896	0.9047	0.0993	0.1104	0.1214
66	0.8283	0.8410	0.8536	0.1485	0.1590	0.1696
67	0.8371	0.8483	0.8595	0.1427	0.1517	0.1607
68	0.8598	0.8706	0.8814	0.1214	0.1294	0.1373
69	0.8780	0.8879	0.8978	0.1053	0.1121	0.1188
70	0.8449	0.8538	0.8627	0.1396	0.1462	0.1529
71	0.7925	0.8007	0.8088	0.1926	0.1993	0.2061
72	0.7702	0.7778	0.7853	0.2158	0.2222	0.2287
73	0.6965	0.7035	0.7104	0.2899	0.2965	0.3032
74	0.6429	0.6495	0.6560	0.3439	0.3505	0.3572
75	0.6379	0.6441	0.6504	0.3496	0.3559	0.3621
76	0.6630	0.6689	0.6749	0.3254	0.3311	0.3368
77	0.6350	0.6405	0.6459	0.3542	0.3595	0.3648
78	0.6380	0.6431	0.6482	0.3520	0.3569	0.3618
79	0.6405	0.6453	0.6501	0.3502	0.3547	0.3592
80	0.6122	0.6167	0.6211	0.3791	0.3833	0.3875
81	0.6089	0.6131	0.6173	0.3830	0.3869	0.3908
82	0.6215	0.6255	0.6294	0.3711	0.3745	0.3780
83	0.6122	0.6158	0.6195	0.3810	0.3842	0.3874
84	0.6126	0.6161	0.6195	0.3810	0.3839	0.3869
85	0.6214	0.6247	0.6280	0.3725	0.3753	0.3780
86	0.6047	0.6079	0.6111	0.3895	0.3921	0.3947

Source: IHS HealthEcon (2006).

5.6 Transition probabilities: Belgium

Table 20: Transition probabilities for men from "Very good" to other health states – BEL

	Very Good			Good			Fair			Bad			Residential care			Death		
Men	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	0.4756	0.4810	0.4864	0.4433	0.4489	0.4544	0.0500	0.0522	0.0544	0.0058	0.0066	0.0074	0.0002	0.0004	0.0006	0.0100	0.0109	0.0119
66	0.4597	0.4654	0.4711	0.4508	0.4567	0.4627	0.0541	0.0566	0.0590	0.0064	0.0073	0.0083	0.0003	0.0005	0.0007	0.0123	0.0135	0.0146
67	0.4533	0.4593	0.4653	0.4484	0.4548	0.4611	0.0572	0.0599	0.0626	0.0075	0.0085	0.0095	0.0003	0.0006	0.0009	0.0155	0.0169	0.0184
68	0.4375	0.4437	0.4498	0.4574	0.4640	0.4705	0.0612	0.0640	0.0668	0.0078	0.0089	0.0100	0.0004	0.0007	0.0010	0.0173	0.0188	0.0204
69	0.4376	0.4441	0.4506	0.4543	0.4613	0.4683	0.0610	0.0641	0.0671	0.0081	0.0093	0.0105	0.0006	0.0009	0.0013	0.0186	0.0203	0.0220
70	0.4306	0.4372	0.4438	0.4567	0.4639	0.4711	0.0626	0.0658	0.0689	0.0088	0.0100	0.0113	0.0007	0.0011	0.0015	0.0203	0.0220	0.0238
71	0.4294	0.4362	0.4430	0.4540	0.4614	0.4689	0.0641	0.0674	0.0707	0.0090	0.0103	0.0116	0.0009	0.0013	0.0018	0.0214	0.0233	0.0252
72	0.4232	0.4300	0.4369	0.4564	0.4641	0.4717	0.0649	0.0683	0.0718	0.0095	0.0108	0.0122	0.0011	0.0016	0.0021	0.0232	0.0252	0.0272
73	0.4257	0.4326	0.4395	0.4521	0.4598	0.4676	0.0643	0.0679	0.0714	0.0097	0.0111	0.0125	0.0013	0.0018	0.0024	0.0246	0.0267	0.0288
74	0.4233	0.4301	0.4370	0.4477	0.4555	0.4632	0.0677	0.0713	0.0749	0.0098	0.0113	0.0127	0.0014	0.0021	0.0027	0.0276	0.0297	0.0319
75	0.4190	0.4259	0.4327	0.4479	0.4558	0.4637	0.0682	0.0719	0.0757	0.0096	0.0111	0.0125	0.0017	0.0023	0.0030	0.0308	0.0330	0.0352
76	0.4022	0.4092	0.4162	0.4561	0.4643	0.4725	0.0705	0.0744	0.0783	0.0099	0.0115	0.0131	0.0020	0.0027	0.0035	0.0355	0.0379	0.0402
77	0.4002	0.4080	0.4157	0.4454	0.4546	0.4638	0.0753	0.0797	0.0842	0.0098	0.0116	0.0134	0.0026	0.0035	0.0045	0.0399	0.0426	0.0453
78	0.3852	0.3936	0.4021	0.4501	0.4602	0.4704	0.0776	0.0826	0.0875	0.0095	0.0115	0.0135	0.0032	0.0044	0.0055	0.0447	0.0477	0.0507
79	0.3667	0.3763	0.3859	0.4572	0.4689	0.4806	0.0780	0.0838	0.0896	0.0103	0.0127	0.0150	0.0044	0.0060	0.0075	0.0489	0.0524	0.0560
80	0.3729	0.3839	0.3950	0.4371	0.4506	0.4641	0.0808	0.0876	0.0943	0.0115	0.0143	0.0171	0.0063	0.0084	0.0105	0.0509	0.0552	0.0594
81	0.3743	0.3856	0.3969	0.4367	0.4506	0.4646	0.0784	0.0855	0.0926	0.0111	0.0140	0.0170	0.0074	0.0097	0.0121	0.0499	0.0544	0.0589
82	0.3581	0.3692	0.3803	0.4565	0.4704	0.4843	0.0727	0.0799	0.0870	0.0114	0.0144	0.0174	0.0082	0.0108	0.0133	0.0507	0.0553	0.0599
83	0.3449	0.3564	0.3680	0.4567	0.4714	0.4861	0.0766	0.0842	0.0919	0.0124	0.0156	0.0188	0.0103	0.0132	0.0161	0.0542	0.0591	0.0641
84	0.3430	0.3553	0.3676	0.4496	0.4654	0.4811	0.0772	0.0855	0.0937	0.0120	0.0154	0.0189	0.0128	0.0162	0.0197	0.0567	0.0622	0.0676
85	0.3231	0.3358	0.3485	0.4620	0.4786	0.4951	0.0782	0.0870	0.0958	0.0102	0.0139	0.0176	0.0146	0.0185	0.0224	0.0605	0.0663	0.0721
86	0.2983	0.3127	0.3271	0.4678	0.4869	0.5061	0.0774	0.0876	0.0978	0.0111	0.0155	0.0198	0.0193	0.0244	0.0295	0.0660	0.0729	0.0798

Source: IHS HealthEcon (2006).

Table 21: Transition probabilities for women from "Very good" to other health states – BEL

	Very Good			Good			Fair			Bad			Residential care			Death		
Women	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	0.4973	0.5028	0.5082	0.4265	0.4322	0.4379	0.0512	0.0534	0.0557	0.0062	0.0070	0.0079	0.0003	0.0005	0.0007	0.0031	0.0040	0.0050
66	0.4808	0.4865	0.4921	0.4375	0.4434	0.4494	0.0540	0.0564	0.0588	0.0070	0.0079	0.0088	0.0004	0.0006	0.0009	0.0041	0.0052	0.0063
67	0.4811	0.4873	0.4936	0.4344	0.4408	0.4472	0.0542	0.0568	0.0594	0.0071	0.0081	0.0090	0.0005	0.0008	0.0012	0.0048	0.0062	0.0076
68	0.4730	0.4795	0.4861	0.4382	0.4450	0.4518	0.0558	0.0586	0.0614	0.0078	0.0088	0.0099	0.0007	0.0011	0.0015	0.0055	0.0070	0.0085
69	0.4482	0.4551	0.4620	0.4569	0.4641	0.4714	0.0591	0.0621	0.0651	0.0082	0.0094	0.0105	0.0010	0.0015	0.0019	0.0062	0.0079	0.0095
70	0.4439	0.4515	0.4591	0.4567	0.4647	0.4728	0.0599	0.0633	0.0667	0.0085	0.0098	0.0111	0.0014	0.0021	0.0027	0.0067	0.0086	0.0104
71	0.4593	0.4671	0.4749	0.4402	0.4485	0.4567	0.0596	0.0631	0.0666	0.0084	0.0097	0.0111	0.0018	0.0026	0.0033	0.0071	0.0091	0.0110
72	0.4445	0.4518	0.4590	0.4505	0.4583	0.4661	0.0628	0.0662	0.0696	0.0091	0.0104	0.0118	0.0020	0.0028	0.0035	0.0086	0.0105	0.0124
73	0.4558	0.4630	0.4703	0.4379	0.4458	0.4537	0.0630	0.0665	0.0700	0.0087	0.0101	0.0115	0.0025	0.0033	0.0041	0.0093	0.0113	0.0132
74	0.4567	0.4636	0.4706	0.4313	0.4391	0.4468	0.0660	0.0695	0.0729	0.0094	0.0108	0.0121	0.0029	0.0037	0.0045	0.0114	0.0134	0.0154
75	0.4491	0.4559	0.4628	0.4336	0.4413	0.4490	0.0690	0.0725	0.0760	0.0093	0.0107	0.0121	0.0034	0.0042	0.0051	0.0133	0.0153	0.0173
76	0.4385	0.4456	0.4528	0.4394	0.4475	0.4556	0.0696	0.0732	0.0769	0.0092	0.0107	0.0122	0.0042	0.0052	0.0062	0.0155	0.0177	0.0198
77	0.4486	0.4562	0.4639	0.4207	0.4294	0.4381	0.0716	0.0756	0.0797	0.0097	0.0113	0.0129	0.0053	0.0066	0.0078	0.0185	0.0209	0.0233
78	0.4301	0.4377	0.4453	0.4333	0.4422	0.4511	0.0727	0.0769	0.0811	0.0103	0.0119	0.0136	0.0060	0.0073	0.0087	0.0214	0.0239	0.0264
79	0.4208	0.4290	0.4372	0.4388	0.4485	0.4582	0.0704	0.0750	0.0796	0.0104	0.0123	0.0141	0.0078	0.0095	0.0111	0.0230	0.0258	0.0285
80	0.4134	0.4219	0.4305	0.4395	0.4496	0.4598	0.0707	0.0756	0.0805	0.0114	0.0134	0.0154	0.0099	0.0119	0.0138	0.0246	0.0276	0.0306
81	0.4048	0.4136	0.4224	0.4392	0.4497	0.4603	0.0735	0.0786	0.0838	0.0120	0.0141	0.0162	0.0127	0.0150	0.0173	0.0257	0.0289	0.0320
82	0.3989	0.4079	0.4168	0.4400	0.4509	0.4618	0.0736	0.0790	0.0844	0.0117	0.0139	0.0161	0.0161	0.0187	0.0213	0.0263	0.0297	0.0330
83	0.3784	0.3873	0.3963	0.4487	0.4598	0.4709	0.0778	0.0834	0.0889	0.0122	0.0144	0.0167	0.0195	0.0224	0.0253	0.0291	0.0327	0.0362
84	0.3740	0.3836	0.3932	0.4348	0.4469	0.4589	0.0833	0.0894	0.0955	0.0121	0.0146	0.0172	0.0261	0.0297	0.0333	0.0319	0.0358	0.0397
85	0.3757	0.3859	0.3961	0.4214	0.4342	0.4470	0.0844	0.0910	0.0975	0.0114	0.0141	0.0168	0.0326	0.0368	0.0411	0.0338	0.0380	0.0423
86	0.3626	0.3731	0.3836	0.4268	0.4402	0.4536	0.0836	0.0905	0.0974	0.0111	0.0139	0.0168	0.0374	0.0422	0.0470	0.0355	0.0400	0.0445

Source: IHS HealthEcon (2006).

Table 22: Transition probabilities for men from "Good" to other health states – BEL

	Very Good			Good			Fair			Bad			Residential care			Death		
Men	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	0.0894	0.0906	0.0917	0.6986	0.7007	0.7028	0.1866	0.1882	0.1898	0.0099	0.0103	0.0108	0.0001	0.0002	0.0003	0.0096	0.0100	0.0103
66	0.0860	0.0871	0.0883	0.6889	0.6910	0.6932	0.1978	0.1995	0.2012	0.0099	0.0104	0.0108	0.0002	0.0002	0.0003	0.0113	0.0117	0.0121
67	0.0878	0.0889	0.0901	0.6780	0.6802	0.6824	0.2047	0.2064	0.2082	0.0103	0.0107	0.0112	0.0002	0.0003	0.0003	0.0130	0.0135	0.0139
68	0.0821	0.0833	0.0845	0.6725	0.6748	0.6772	0.2139	0.2157	0.2176	0.0105	0.0110	0.0115	0.0002	0.0003	0.0004	0.0143	0.0148	0.0153
69	0.0825	0.0837	0.0849	0.6689	0.6713	0.6738	0.2147	0.2167	0.2186	0.0112	0.0117	0.0123	0.0003	0.0004	0.0005	0.0156	0.0161	0.0167
70	0.0798	0.0810	0.0822	0.6643	0.6668	0.6693	0.2194	0.2214	0.2234	0.0122	0.0127	0.0133	0.0004	0.0005	0.0006	0.0170	0.0176	0.0182
71	0.0787	0.0799	0.0812	0.6571	0.6597	0.6623	0.2255	0.2276	0.2297	0.0127	0.0133	0.0139	0.0005	0.0006	0.0007	0.0183	0.0189	0.0195
72	0.0774	0.0787	0.0800	0.6554	0.6581	0.6608	0.2261	0.2284	0.2306	0.0133	0.0139	0.0145	0.0006	0.0007	0.0009	0.0196	0.0202	0.0209
73	0.0781	0.0794	0.0807	0.6519	0.6547	0.6576	0.2264	0.2287	0.2310	0.0138	0.0144	0.0151	0.0007	0.0009	0.0010	0.0211	0.0218	0.0225
74	0.0769	0.0782	0.0796	0.6399	0.6428	0.6458	0.2365	0.2389	0.2413	0.0140	0.0147	0.0154	0.0009	0.0010	0.0012	0.0235	0.0243	0.0250
75	0.0752	0.0766	0.0780	0.6361	0.6393	0.6424	0.2385	0.2411	0.2437	0.0138	0.0146	0.0153	0.0011	0.0013	0.0015	0.0263	0.0272	0.0280
76	0.0695	0.0710	0.0724	0.6316	0.6349	0.6383	0.2434	0.2462	0.2490	0.0143	0.0152	0.0160	0.0013	0.0016	0.0018	0.0303	0.0312	0.0321
77	0.0683	0.0699	0.0714	0.6123	0.6159	0.6194	0.2589	0.2620	0.2650	0.0144	0.0153	0.0162	0.0016	0.0019	0.0022	0.0341	0.0351	0.0361
78	0.0642	0.0659	0.0676	0.6068	0.6108	0.6149	0.2634	0.2668	0.2703	0.0140	0.0150	0.0161	0.0021	0.0024	0.0028	0.0378	0.0389	0.0401
79	0.0599	0.0617	0.0636	0.6054	0.6098	0.6143	0.2626	0.2665	0.2703	0.0153	0.0164	0.0176	0.0026	0.0031	0.0036	0.0411	0.0424	0.0437
80	0.0611	0.0630	0.0650	0.5838	0.5886	0.5935	0.2762	0.2804	0.2847	0.0175	0.0188	0.0201	0.0033	0.0039	0.0045	0.0437	0.0452	0.0466
81	0.0612	0.0633	0.0655	0.5858	0.5912	0.5967	0.2715	0.2763	0.2811	0.0174	0.0188	0.0203	0.0045	0.0052	0.0060	0.0434	0.0451	0.0467
82	0.0574	0.0596	0.0619	0.6042	0.6100	0.6157	0.2534	0.2584	0.2634	0.0179	0.0195	0.0210	0.0055	0.0064	0.0073	0.0443	0.0461	0.0480
83	0.0541	0.0563	0.0585	0.5934	0.5991	0.6047	0.2626	0.2677	0.2727	0.0193	0.0209	0.0225	0.0062	0.0071	0.0080	0.0471	0.0489	0.0508
84	0.0532	0.0555	0.0577	0.5838	0.5897	0.5956	0.2678	0.2731	0.2784	0.0193	0.0210	0.0227	0.0075	0.0085	0.0096	0.0502	0.0522	0.0542
85	0.0481	0.0505	0.0529	0.5842	0.5906	0.5970	0.2683	0.2741	0.2798	0.0171	0.0189	0.0208	0.0089	0.0102	0.0114	0.0535	0.0557	0.0580
86	0.0439	0.0464	0.0488	0.5832	0.5900	0.5967	0.2648	0.2709	0.2771	0.0187	0.0207	0.0227	0.0102	0.0116	0.0130	0.0580	0.0604	0.0628

Source: IHS HealthEcon (2006).

Table 23: Transition probabilities for women from "Good" to other health states – BEL

	Very Good			Good			Fair			Bad			Residential care			Death		
Women	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	0.0827	0.0839	0.0850	0.6775	0.6798	0.6821	0.2157	0.2175	0.2193	0.0133	0.0139	0.0144	0.0002	0.0003	0.0003	0.0043	0.0047	0.0051
66	0.0786	0.0797	0.0808	0.6724	0.6748	0.6771	0.2239	0.2257	0.2276	0.0133	0.0138	0.0143	0.0002	0.0003	0.0004	0.0052	0.0057	0.0061
67	0.0794	0.0805	0.0816	0.6681	0.6704	0.6728	0.2276	0.2295	0.2314	0.0123	0.0128	0.0133	0.0003	0.0004	0.0005	0.0058	0.0064	0.0069
68	0.0763	0.0775	0.0786	0.6634	0.6658	0.6683	0.2330	0.2349	0.2368	0.0136	0.0141	0.0146	0.0003	0.0004	0.0005	0.0067	0.0072	0.0078
69	0.0692	0.0703	0.0714	0.6643	0.6667	0.6692	0.2380	0.2400	0.2420	0.0140	0.0146	0.0151	0.0004	0.0006	0.0007	0.0072	0.0078	0.0084
70	0.0682	0.0693	0.0705	0.6600	0.6625	0.6650	0.2416	0.2436	0.2457	0.0147	0.0152	0.0158	0.0005	0.0007	0.0008	0.0080	0.0086	0.0092
71	0.0730	0.0741	0.0752	0.6502	0.6528	0.6554	0.2451	0.2472	0.2493	0.0149	0.0155	0.0161	0.0007	0.0008	0.0010	0.0089	0.0096	0.0102
72	0.0691	0.0703	0.0715	0.6470	0.6497	0.6524	0.2497	0.2519	0.2541	0.0156	0.0162	0.0169	0.0009	0.0011	0.0012	0.0101	0.0108	0.0115
73	0.0709	0.0721	0.0733	0.6365	0.6393	0.6420	0.2567	0.2589	0.2612	0.0156	0.0163	0.0169	0.0011	0.0013	0.0015	0.0114	0.0121	0.0128
74	0.0709	0.0721	0.0733	0.6233	0.6261	0.6290	0.2661	0.2684	0.2708	0.0166	0.0173	0.0180	0.0014	0.0017	0.0019	0.0137	0.0144	0.0152
75	0.0676	0.0689	0.0702	0.6146	0.6176	0.6207	0.2750	0.2776	0.2801	0.0165	0.0172	0.0180	0.0019	0.0021	0.0024	0.0157	0.0165	0.0173
76	0.0645	0.0658	0.0671	0.6133	0.6165	0.6198	0.2758	0.2785	0.2813	0.0165	0.0173	0.0181	0.0024	0.0027	0.0030	0.0182	0.0191	0.0200
77	0.0669	0.0683	0.0697	0.5944	0.5979	0.6013	0.2863	0.2893	0.2922	0.0176	0.0184	0.0193	0.0029	0.0033	0.0037	0.0219	0.0228	0.0238
78	0.0615	0.0630	0.0646	0.5941	0.5980	0.6018	0.2860	0.2893	0.2926	0.0184	0.0194	0.0204	0.0039	0.0044	0.0048	0.0248	0.0259	0.0270
79	0.0601	0.0617	0.0633	0.5998	0.6039	0.6080	0.2776	0.2811	0.2846	0.0189	0.0200	0.0210	0.0049	0.0054	0.0060	0.0267	0.0279	0.0291
80	0.0578	0.0594	0.0610	0.5946	0.5987	0.6029	0.2793	0.2830	0.2866	0.0209	0.0220	0.0231	0.0059	0.0066	0.0072	0.0290	0.0303	0.0316
81	0.0549	0.0565	0.0582	0.5836	0.5879	0.5922	0.2883	0.2921	0.2959	0.0221	0.0233	0.0245	0.0076	0.0083	0.0090	0.0305	0.0319	0.0332
82	0.0539	0.0556	0.0572	0.5819	0.5863	0.5908	0.2878	0.2918	0.2958	0.0217	0.0230	0.0242	0.0097	0.0106	0.0115	0.0312	0.0327	0.0342
83	0.0498	0.0515	0.0532	0.5750	0.5795	0.5841	0.2939	0.2980	0.3021	0.0219	0.0232	0.0245	0.0119	0.0129	0.0139	0.0333	0.0349	0.0364
84	0.0485	0.0501	0.0518	0.5516	0.5563	0.5610	0.3118	0.3161	0.3204	0.0222	0.0235	0.0249	0.0146	0.0157	0.0169	0.0365	0.0382	0.0398
85	0.0479	0.0498	0.0516	0.5354	0.5406	0.5458	0.3198	0.3246	0.3293	0.0216	0.0231	0.0246	0.0192	0.0206	0.0220	0.0395	0.0414	0.0432
86	0.0450	0.0469	0.0489	0.5335	0.5393	0.5451	0.3157	0.3210	0.3262	0.0213	0.0230	0.0247	0.0244	0.0262	0.0279	0.0416	0.0437	0.0458

Source: IHS HealthEcon (2006).

Table 24: Transition probabilities for men from "Fair" to other health states – BEL

	Very Good			Good			Fair			Bad			Residential care			Death		
Men	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	0.0105	0.0111	0.0118	0.2650	0.2677	0.2704	0.5979	0.6011	0.6043	0.0922	0.0938	0.0953	0.0015	0.0017	0.0019	0.0239	0.0246	0.0253
66	0.0082	0.0087	0.0093	0.2586	0.2612	0.2638	0.6053	0.6084	0.6115	0.0924	0.0940	0.0955	0.0015	0.0018	0.0020	0.0251	0.0259	0.0266
67	0.0067	0.0072	0.0077	0.2549	0.2575	0.2600	0.6046	0.6077	0.6108	0.0968	0.0984	0.0999	0.0017	0.0019	0.0022	0.0265	0.0273	0.0281
68	0.0061	0.0066	0.0070	0.2456	0.2481	0.2506	0.6122	0.6152	0.6183	0.0970	0.0986	0.1002	0.0019	0.0022	0.0024	0.0286	0.0294	0.0302
69	0.0061	0.0066	0.0070	0.2421	0.2445	0.2470	0.6073	0.6103	0.6134	0.1025	0.1041	0.1057	0.0022	0.0024	0.0027	0.0312	0.0320	0.0328
70	0.0058	0.0063	0.0067	0.2357	0.2382	0.2407	0.6050	0.6081	0.6112	0.1085	0.1102	0.1118	0.0026	0.0029	0.0032	0.0335	0.0343	0.0352
71	0.0056	0.0061	0.0065	0.2283	0.2308	0.2333	0.6073	0.6104	0.6136	0.1112	0.1129	0.1146	0.0031	0.0034	0.0038	0.0354	0.0363	0.0372
72	0.0055	0.0059	0.0064	0.2248	0.2273	0.2298	0.6026	0.6058	0.6090	0.1160	0.1177	0.1195	0.0037	0.0040	0.0044	0.0382	0.0392	0.0401
73	0.0055	0.0060	0.0064	0.2221	0.2247	0.2273	0.5973	0.6007	0.6040	0.1198	0.1217	0.1236	0.0045	0.0049	0.0053	0.0411	0.0421	0.0430
74	0.0052	0.0057	0.0062	0.2114	0.2141	0.2168	0.6040	0.6075	0.6110	0.1188	0.1208	0.1227	0.0055	0.0060	0.0065	0.0448	0.0459	0.0469
75	0.0051	0.0056	0.0060	0.2084	0.2111	0.2138	0.6027	0.6063	0.6098	0.1168	0.1188	0.1209	0.0065	0.0070	0.0076	0.0501	0.0512	0.0523
76	0.0046	0.0051	0.0056	0.2021	0.2049	0.2078	0.5992	0.6029	0.6067	0.1189	0.1210	0.1232	0.0077	0.0083	0.0089	0.0566	0.0578	0.0589
77	0.0042	0.0047	0.0052	0.1862	0.1892	0.1921	0.6103	0.6142	0.6182	0.1161	0.1184	0.1207	0.0090	0.0097	0.0105	0.0625	0.0638	0.0650
78	0.0039	0.0044	0.0049	0.1809	0.1839	0.1869	0.6109	0.6150	0.6190	0.1129	0.1153	0.1176	0.0100	0.0108	0.0116	0.0694	0.0707	0.0720
79	0.0036	0.0041	0.0046	0.1781	0.1813	0.1844	0.5983	0.6025	0.6067	0.1212	0.1237	0.1262	0.0117	0.0126	0.0135	0.0744	0.0759	0.0773
80	0.0035	0.0040	0.0046	0.1638	0.1672	0.1705	0.5967	0.6013	0.6059	0.1317	0.1345	0.1373	0.0147	0.0158	0.0168	0.0757	0.0773	0.0789
81	0.0036	0.0041	0.0047	0.1660	0.1696	0.1731	0.5894	0.5942	0.5991	0.1322	0.1352	0.1382	0.0182	0.0194	0.0207	0.0756	0.0774	0.0792
82	0.0034	0.0039	0.0045	0.1743	0.1780	0.1818	0.5626	0.5679	0.5732	0.1402	0.1435	0.1468	0.0237	0.0252	0.0267	0.0794	0.0814	0.0834
83	0.0029	0.0036	0.0042	0.1628	0.1670	0.1711	0.5565	0.5625	0.5685	0.1450	0.1487	0.1524	0.0322	0.0341	0.0361	0.0818	0.0842	0.0865
84	0.0028	0.0034	0.0041	0.1561	0.1605	0.1648	0.5529	0.5593	0.5658	0.1425	0.1465	0.1505	0.0396	0.0419	0.0442	0.0858	0.0883	0.0909
85	0.0025	0.0032	0.0039	0.1569	0.1615	0.1662	0.5532	0.5601	0.5670	0.1276	0.1318	0.1361	0.0470	0.0497	0.0524	0.0909	0.0937	0.0964
86	0.0021	0.0028	0.0035	0.1510	0.1559	0.1609	0.5322	0.5397	0.5471	0.1375	0.1421	0.1466	0.0554	0.0586	0.0617	0.0979	0.1010	0.1040

Source: IHS HealthEcon (2006).

Table 25: Transition probabilities for women from "Fair" to other health states – BEL

	Very Good			Good			Fair			Bad			Residential care			Death		
Women	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	0.0101	0.0107	0.0112	0.2498	0.2520	0.2542	0.6182	0.6208	0.6234	0.1035	0.1049	0.1062	0.0013	0.0015	0.0017	0.0096	0.0102	0.0107
66	0.0079	0.0084	0.0089	0.2474	0.2496	0.2517	0.6204	0.6230	0.6256	0.1055	0.1069	0.1082	0.0014	0.0016	0.0018	0.0099	0.0105	0.0111
67	0.0066	0.0070	0.0074	0.2497	0.2518	0.2539	0.6223	0.6249	0.6274	0.1022	0.1035	0.1049	0.0016	0.0018	0.0020	0.0103	0.0110	0.0116
68	0.0062	0.0066	0.0070	0.2421	0.2442	0.2463	0.6205	0.6230	0.6256	0.1104	0.1117	0.1131	0.0019	0.0021	0.0024	0.0116	0.0123	0.0130
69	0.0055	0.0059	0.0063	0.2380	0.2401	0.2422	0.6217	0.6243	0.6268	0.1126	0.1140	0.1154	0.0023	0.0026	0.0028	0.0125	0.0132	0.0139
70	0.0054	0.0058	0.0062	0.2335	0.2355	0.2376	0.6207	0.6233	0.6258	0.1164	0.1178	0.1192	0.0028	0.0031	0.0033	0.0139	0.0146	0.0153
71	0.0058	0.0061	0.0065	0.2282	0.2303	0.2323	0.6222	0.6247	0.6273	0.1176	0.1190	0.1204	0.0034	0.0037	0.0040	0.0154	0.0162	0.0169
72	0.0053	0.0057	0.0061	0.2224	0.2244	0.2264	0.6215	0.6241	0.6267	0.1217	0.1232	0.1247	0.0041	0.0045	0.0048	0.0174	0.0182	0.0189
73	0.0054	0.0058	0.0062	0.2153	0.2174	0.2194	0.6269	0.6295	0.6322	0.1201	0.1216	0.1231	0.0051	0.0054	0.0058	0.0195	0.0203	0.0211
74	0.0052	0.0056	0.0060	0.2038	0.2058	0.2078	0.6296	0.6322	0.6348	0.1249	0.1264	0.1279	0.0061	0.0065	0.0069	0.0228	0.0236	0.0244
75	0.0049	0.0052	0.0056	0.1963	0.1983	0.2003	0.6357	0.6384	0.6410	0.1221	0.1237	0.1252	0.0072	0.0076	0.0081	0.0259	0.0267	0.0275
76	0.0047	0.0050	0.0054	0.1948	0.1969	0.1989	0.6320	0.6346	0.6373	0.1220	0.1236	0.1252	0.0084	0.0089	0.0094	0.0302	0.0310	0.0319
77	0.0047	0.0051	0.0054	0.1824	0.1845	0.1866	0.6334	0.6362	0.6390	0.1258	0.1275	0.1292	0.0102	0.0108	0.0113	0.0352	0.0361	0.0369
78	0.0043	0.0046	0.0050	0.1804	0.1826	0.1848	0.6236	0.6265	0.6295	0.1308	0.1326	0.1343	0.0123	0.0129	0.0136	0.0397	0.0407	0.0416
79	0.0042	0.0046	0.0050	0.1833	0.1856	0.1880	0.6078	0.6110	0.6141	0.1357	0.1377	0.1397	0.0159	0.0167	0.0175	0.0434	0.0445	0.0455
80	0.0040	0.0044	0.0048	0.1776	0.1801	0.1827	0.5944	0.5980	0.6015	0.1455	0.1477	0.1498	0.0217	0.0227	0.0238	0.0459	0.0471	0.0483
81	0.0036	0.0040	0.0045	0.1677	0.1704	0.1731	0.5910	0.5948	0.5987	0.1495	0.1519	0.1543	0.0291	0.0304	0.0316	0.0471	0.0485	0.0499
82	0.0035	0.0039	0.0043	0.1653	0.1681	0.1708	0.5858	0.5898	0.5937	0.1475	0.1500	0.1525	0.0366	0.0380	0.0394	0.0488	0.0502	0.0517
83	0.0031	0.0035	0.0039	0.1580	0.1608	0.1635	0.5827	0.5867	0.5908	0.1468	0.1493	0.1519	0.0448	0.0464	0.0480	0.0517	0.0533	0.0549
84	0.0028	0.0032	0.0037	0.1440	0.1468	0.1496	0.5895	0.5937	0.5978	0.1429	0.1455	0.1481	0.0526	0.0543	0.0561	0.0548	0.0564	0.0581
85	0.0028	0.0032	0.0036	0.1376	0.1403	0.1431	0.5921	0.5962	0.6003	0.1375	0.1400	0.1426	0.0583	0.0601	0.0620	0.0584	0.0601	0.0617
86	0.0026	0.0030	0.0034	0.1367	0.1395	0.1423	0.5823	0.5865	0.5907	0.1365	0.1391	0.1418	0.0661	0.0682	0.0703	0.0619	0.0637	0.0655

Source: IHS HealthEcon (2006).

Table 26: Transition probabilities for men from "Bad" to other health states – BEL

	Very Good			Good			Fair			Bad			Residential care			Death		
Men	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	0.0029	0.0038	0.0047	0.0404	0.0432	0.0461	0.3014	0.3084	0.3154	0.5231	0.5310	0.5390	0.0124	0.0140	0.0156	0.0961	0.0996	0.1031
66	0.0031	0.0039	0.0048	0.0415	0.0442	0.0469	0.3065	0.3131	0.3198	0.5176	0.5251	0.5325	0.0122	0.0137	0.0152	0.0965	0.1000	0.1035
67	0.0034	0.0043	0.0052	0.0423	0.0450	0.0477	0.3016	0.3081	0.3146	0.5187	0.5259	0.5331	0.0129	0.0144	0.0159	0.0987	0.1023	0.1060
68	0.0033	0.0041	0.0049	0.0415	0.0440	0.0466	0.3049	0.3111	0.3173	0.5112	0.5181	0.5250	0.0136	0.0150	0.0165	0.1041	0.1076	0.1110
69	0.0033	0.0041	0.0049	0.0402	0.0427	0.0452	0.2932	0.2993	0.3054	0.5179	0.5248	0.5316	0.0152	0.0168	0.0183	0.1089	0.1123	0.1158
70	0.0032	0.0039	0.0047	0.0385	0.0408	0.0432	0.2830	0.2888	0.2946	0.5266	0.5332	0.5397	0.0161	0.0176	0.0191	0.1124	0.1157	0.1190
71	0.0032	0.0039	0.0046	0.0374	0.0396	0.0419	0.2803	0.2859	0.2914	0.5267	0.5330	0.5392	0.0169	0.0184	0.0199	0.1161	0.1192	0.1224
72	0.0032	0.0038	0.0045	0.0367	0.0388	0.0410	0.2719	0.2774	0.2828	0.5301	0.5362	0.5423	0.0187	0.0202	0.0217	0.1204	0.1235	0.1266
73	0.0033	0.0040	0.0046	0.0362	0.0383	0.0404	0.2645	0.2698	0.2751	0.5315	0.5375	0.5435	0.0207	0.0223	0.0239	0.1251	0.1282	0.1312
74	0.0033	0.0039	0.0046	0.0349	0.0370	0.0392	0.2670	0.2722	0.2775	0.5186	0.5245	0.5305	0.0236	0.0252	0.0269	0.1339	0.1370	0.1401
75	0.0033	0.0040	0.0047	0.0348	0.0370	0.0392	0.2651	0.2706	0.2762	0.5014	0.5077	0.5140	0.0290	0.0310	0.0329	0.1464	0.1497	0.1530
76	0.0029	0.0037	0.0044	0.0331	0.0355	0.0379	0.2560	0.2620	0.2680	0.4908	0.4977	0.5045	0.0365	0.0388	0.0412	0.1588	0.1624	0.1660
77	0.0027	0.0035	0.0043	0.0306	0.0331	0.0356	0.2586	0.2650	0.2714	0.4693	0.4767	0.4840	0.0443	0.0471	0.0499	0.1706	0.1746	0.1786
78	0.0025	0.0034	0.0042	0.0297	0.0325	0.0352	0.2554	0.2625	0.2697	0.4451	0.4534	0.4616	0.0570	0.0605	0.0640	0.1833	0.1878	0.1924
79	0.0021	0.0031	0.0040	0.0277	0.0307	0.0337	0.2354	0.2432	0.2511	0.4466	0.4559	0.4652	0.0728	0.0773	0.0817	0.1848	0.1900	0.1951
80	0.0021	0.0030	0.0039	0.0242	0.0272	0.0302	0.2234	0.2312	0.2391	0.4609	0.4702	0.4795	0.0789	0.0836	0.0883	0.1796	0.1848	0.1900
81	0.0023	0.0031	0.0040	0.0251	0.0279	0.0308	0.2208	0.2284	0.2360	0.4604	0.4693	0.4783	0.0829	0.0876	0.0922	0.1786	0.1836	0.1887
82	0.0021	0.0030	0.0039	0.0259	0.0288	0.0316	0.2018	0.2095	0.2171	0.4646	0.4737	0.4828	0.0965	0.1015	0.1066	0.1783	0.1835	0.1887
83	0.0019	0.0028	0.0037	0.0241	0.0270	0.0299	0.1953	0.2029	0.2106	0.4630	0.4721	0.4812	0.1089	0.1143	0.1197	0.1756	0.1809	0.1861
84	0.0019	0.0028	0.0037	0.0234	0.0264	0.0293	0.1930	0.2008	0.2087	0.4451	0.4544	0.4637	0.1261	0.1320	0.1380	0.1781	0.1835	0.1890
85	0.0017	0.0027	0.0036	0.0238	0.0270	0.0302	0.1936	0.2022	0.2108	0.3965	0.4067	0.4169	0.1618	0.1691	0.1764	0.1862	0.1923	0.1984
86	0.0011	0.0022	0.0033	0.0196	0.0232	0.0269	0.1601	0.1702	0.1802	0.3662	0.3786	0.3910	0.2358	0.2464	0.2570	0.1720	0.1794	0.1869

Source: IHS HealthEcon (2006).

Table 27: Transition probabilities for women from "Bad" to other health states – BEL

	Very Good			Good			Fair			Bad			Residential care			Death		
Women	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	0.0052	0.0060	0.0068	0.0528	0.0553	0.0578	0.3529	0.3585	0.3642	0.5307	0.5367	0.5427	0.0093	0.0104	0.0114	0.0307	0.0331	0.0356
66	0.0047	0.0055	0.0063	0.0513	0.0536	0.0559	0.3453	0.3505	0.3556	0.5417	0.5472	0.5527	0.0090	0.0100	0.0110	0.0309	0.0333	0.0357
67	0.0049	0.0057	0.0064	0.0521	0.0543	0.0564	0.3461	0.3509	0.3558	0.5379	0.5430	0.5481	0.0093	0.0102	0.0111	0.0336	0.0359	0.0382
68	0.0046	0.0053	0.0060	0.0494	0.0515	0.0536	0.3321	0.3369	0.3416	0.5525	0.5575	0.5626	0.0105	0.0114	0.0124	0.0351	0.0374	0.0397
69	0.0042	0.0049	0.0056	0.0491	0.0510	0.0530	0.3305	0.3349	0.3393	0.5532	0.5579	0.5625	0.0110	0.0120	0.0129	0.0372	0.0393	0.0415
70	0.0043	0.0049	0.0055	0.0483	0.0502	0.0521	0.3252	0.3294	0.3337	0.5557	0.5603	0.5648	0.0124	0.0133	0.0143	0.0398	0.0419	0.0440
71	0.0048	0.0054	0.0060	0.0478	0.0496	0.0514	0.3241	0.3283	0.3324	0.5514	0.5558	0.5602	0.0142	0.0152	0.0162	0.0437	0.0457	0.0477
72	0.0045	0.0051	0.0057	0.0464	0.0482	0.0500	0.3175	0.3216	0.3257	0.5531	0.5575	0.5620	0.0170	0.0181	0.0192	0.0474	0.0495	0.0515
73	0.0048	0.0054	0.0060	0.0459	0.0477	0.0495	0.3216	0.3257	0.3298	0.5404	0.5448	0.5492	0.0203	0.0215	0.0227	0.0528	0.0549	0.0569
74	0.0047	0.0053	0.0059	0.0429	0.0447	0.0465	0.3139	0.3181	0.3223	0.5398	0.5443	0.5488	0.0255	0.0269	0.0282	0.0586	0.0608	0.0629
75	0.0046	0.0052	0.0058	0.0421	0.0439	0.0457	0.3180	0.3223	0.3265	0.5236	0.5282	0.5328	0.0306	0.0321	0.0336	0.0661	0.0683	0.0705
76	0.0044	0.0051	0.0057	0.0419	0.0438	0.0457	0.3124	0.3170	0.3215	0.5111	0.5160	0.5210	0.0391	0.0409	0.0427	0.0748	0.0772	0.0796
77	0.0045	0.0051	0.0058	0.0383	0.0403	0.0423	0.3028	0.3076	0.3124	0.5048	0.5101	0.5155	0.0491	0.0513	0.0534	0.0829	0.0855	0.0882
78	0.0040	0.0047	0.0054	0.0370	0.0391	0.0412	0.2882	0.2932	0.2983	0.5034	0.5090	0.5146	0.0590	0.0615	0.0639	0.0897	0.0925	0.0953
79	0.0040	0.0047	0.0054	0.0371	0.0392	0.0413	0.2727	0.2778	0.2830	0.5036	0.5094	0.5151	0.0689	0.0716	0.0744	0.0944	0.0973	0.1002
80	0.0037	0.0044	0.0051	0.0346	0.0367	0.0388	0.2543	0.2594	0.2645	0.5131	0.5189	0.5246	0.0797	0.0827	0.0857	0.0950	0.0979	0.1009
81	0.0035	0.0042	0.0048	0.0329	0.0349	0.0370	0.2491	0.2541	0.2590	0.5119	0.5175	0.5230	0.0893	0.0924	0.0955	0.0941	0.0970	0.0998
82	0.0036	0.0042	0.0049	0.0333	0.0352	0.0372	0.2469	0.2518	0.2567	0.4961	0.5016	0.5071	0.1058	0.1091	0.1124	0.0951	0.0980	0.1009
83	0.0033	0.0039	0.0045	0.0318	0.0338	0.0358	0.2405	0.2455	0.2505	0.4750	0.4806	0.4863	0.1331	0.1369	0.1407	0.0962	0.0993	0.1023
84	0.0030	0.0037	0.0043	0.0285	0.0306	0.0327	0.2369	0.2421	0.2473	0.4443	0.4503	0.4562	0.1684	0.1728	0.1773	0.0973	0.1005	0.1038
85	0.0028	0.0035	0.0042	0.0259	0.0281	0.0303	0.2253	0.2309	0.2365	0.4026	0.4090	0.4155	0.2218	0.2273	0.2328	0.0975	0.1011	0.1047
86	0.0024	0.0031	0.0039	0.0234	0.0257	0.0281	0.1994	0.2055	0.2116	0.3563	0.3635	0.3708	0.2996	0.3067	0.3138	0.0913	0.0954	0.0994

Source: IHS HealthEcon (2006).

Table 28: Transition probabilities from "Residential care" to other health states – BEL

	Residential care			Death		
Men	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	0.8308	0.8566	0.8824	0.1287	0.1434	0.1581
66	0.8450	0.8697	0.8945	0.1162	0.1303	0.1443
67	0.8512	0.8750	0.8987	0.1114	0.1250	0.1387
68	0.8429	0.8657	0.8885	0.1210	0.1343	0.1477
69	0.8233	0.8450	0.8667	0.1416	0.1550	0.1683
70	0.8102	0.8310	0.8517	0.1559	0.1690	0.1821
71	0.7990	0.8189	0.8387	0.1683	0.1811	0.1940
72	0.7835	0.8024	0.8213	0.1850	0.1976	0.2102
73	0.7630	0.7809	0.7989	0.2067	0.2191	0.2315
74	0.7493	0.7664	0.7834	0.2218	0.2336	0.2455
75	0.7317	0.7480	0.7643	0.2406	0.2520	0.2634
76	0.7127	0.7283	0.7440	0.2607	0.2717	0.2826
77	0.6886	0.7037	0.7188	0.2856	0.2963	0.3070
78	0.6683	0.6831	0.6979	0.3064	0.3169	0.3274
79	0.6322	0.6468	0.6614	0.3425	0.3532	0.3639
80	0.6023	0.6167	0.6311	0.3724	0.3833	0.3941
81	0.5813	0.5953	0.6092	0.3938	0.4047	0.4157
82	0.5604	0.5736	0.5868	0.4159	0.4264	0.4368
83	0.5354	0.5477	0.5600	0.4425	0.4523	0.4621
84	0.5234	0.5349	0.5464	0.4560	0.4651	0.4742
85	0.5095	0.5204	0.5313	0.4712	0.4796	0.4881
86	0.4833	0.4937	0.5042	0.4984	0.5063	0.5141

	Residential care			Death		
Women	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	0.9048	0.9314	0.9580	0.0534	0.0686	0.0838
66	0.9235	0.9478	0.9722	0.0393	0.0522	0.0650
67	0.9365	0.9588	0.9811	0.0303	0.0412	0.0522
68	0.9417	0.9621	0.9825	0.0285	0.0379	0.0473
69	0.9443	0.9630	0.9816	0.0286	0.0370	0.0455
70	0.9466	0.9636	0.9807	0.0288	0.0364	0.0439
71	0.9490	0.9646	0.9802	0.0288	0.0354	0.0421
72	0.9473	0.9615	0.9757	0.0324	0.0385	0.0446
73	0.9462	0.9592	0.9722	0.0352	0.0408	0.0463
74	0.9473	0.9591	0.9710	0.0360	0.0409	0.0457
75	0.9441	0.9550	0.9658	0.0406	0.0450	0.0495
76	0.9403	0.9504	0.9605	0.0455	0.0496	0.0538
77	0.9346	0.9440	0.9535	0.0521	0.0560	0.0599
78	0.9250	0.9340	0.9430	0.0622	0.0660	0.0699
79	0.9045	0.9132	0.9218	0.0828	0.0868	0.0909
80	0.8801	0.8883	0.8965	0.1074	0.1117	0.1159
81	0.8523	0.8600	0.8677	0.1357	0.1400	0.1443
82	0.8260	0.8331	0.8402	0.1627	0.1669	0.1711
83	0.8006	0.8072	0.8137	0.1889	0.1928	0.1968
84	0.7788	0.7848	0.7908	0.2116	0.2152	0.2188
85	0.7585	0.7641	0.7697	0.2326	0.2359	0.2393
86	0.7369	0.7422	0.7475	0.2547	0.2578	0.2609

Source: IHS HealthEcon (2006).

5.7 Transition probabilities: Germany

Table 29: Transition probabilities for men from "Very good" to other health states – GER

	Very Good			Good			Fair			Bad			Residential care			Death		
Men	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	0.3798	0.3845	0.3892	0.4695	0.4747	0.4799	0.1065	0.1093	0.1120	0.0247	0.0262	0.0276	0.0013	0.0016	0.0020	0.0032	0.0037	0.0042
66	0.3705	0.3755	0.3805	0.4689	0.4743	0.4796	0.1139	0.1168	0.1197	0.0258	0.0273	0.0287	0.0017	0.0021	0.0025	0.0035	0.0040	0.0046
67	0.4465	0.4525	0.4584	0.4021	0.4078	0.4136	0.1045	0.1078	0.1110	0.0229	0.0244	0.0260	0.0026	0.0032	0.0038	0.0036	0.0043	0.0050
68	0.4524	0.4579	0.4634	0.3903	0.3957	0.4012	0.1092	0.1123	0.1154	0.0242	0.0258	0.0273	0.0031	0.0036	0.0042	0.0040	0.0047	0.0053
69	0.4363	0.4417	0.4471	0.3997	0.4051	0.4106	0.1133	0.1164	0.1195	0.0257	0.0273	0.0289	0.0038	0.0045	0.0051	0.0044	0.0051	0.0058
70	0.4400	0.4457	0.4513	0.3936	0.3994	0.4052	0.1128	0.1162	0.1196	0.0258	0.0275	0.0293	0.0052	0.0059	0.0067	0.0045	0.0053	0.0060
71	0.4314	0.4370	0.4426	0.3982	0.4040	0.4098	0.1144	0.1179	0.1213	0.0266	0.0284	0.0302	0.0062	0.0071	0.0080	0.0048	0.0057	0.0065
72	0.4205	0.4262	0.4319	0.3994	0.4054	0.4114	0.1195	0.1232	0.1268	0.0283	0.0302	0.0321	0.0078	0.0089	0.0099	0.0053	0.0062	0.0070
73	0.3906	0.3965	0.4025	0.4217	0.4281	0.4345	0.1209	0.1248	0.1287	0.0302	0.0323	0.0344	0.0103	0.0115	0.0127	0.0058	0.0068	0.0077
74	0.3936	0.4003	0.4070	0.4068	0.4140	0.4213	0.1239	0.1284	0.1329	0.0311	0.0335	0.0359	0.0150	0.0167	0.0183	0.0060	0.0071	0.0082
75	0.3622	0.3690	0.3759	0.4212	0.4288	0.4364	0.1308	0.1356	0.1404	0.0348	0.0374	0.0400	0.0191	0.0211	0.0230	0.0069	0.0081	0.0093
76	0.3692	0.3770	0.3848	0.4081	0.4167	0.4254	0.1250	0.1305	0.1360	0.0347	0.0377	0.0407	0.0272	0.0299	0.0327	0.0067	0.0082	0.0096
77	0.3342	0.3422	0.3501	0.4287	0.4378	0.4469	0.1291	0.1350	0.1409	0.0377	0.0409	0.0442	0.0318	0.0350	0.0381	0.0075	0.0091	0.0107
78	0.3376	0.3468	0.3559	0.4092	0.4196	0.4301	0.1281	0.1350	0.1418	0.0385	0.0423	0.0462	0.0424	0.0466	0.0509	0.0077	0.0096	0.0115
79	0.3171	0.3265	0.3360	0.4158	0.4269	0.4380	0.1324	0.1397	0.1470	0.0407	0.0449	0.0491	0.0470	0.0518	0.0565	0.0081	0.0102	0.0123
80	0.3328	0.3438	0.3548	0.3889	0.4017	0.4146	0.1236	0.1322	0.1408	0.0375	0.0425	0.0474	0.0628	0.0696	0.0763	0.0077	0.0102	0.0127
81	0.3225	0.3329	0.3432	0.3985	0.4108	0.4232	0.1282	0.1366	0.1450	0.0370	0.0419	0.0468	0.0602	0.0667	0.0732	0.0086	0.0111	0.0136
82	0.3173	0.3272	0.3372	0.3702	0.3825	0.3949	0.1422	0.1509	0.1596	0.0454	0.0507	0.0559	0.0668	0.0736	0.0803	0.0124	0.0151	0.0179
83	0.3317	0.3410	0.3503	0.3419	0.3536	0.3653	0.1533	0.1617	0.1700	0.0469	0.0519	0.0570	0.0687	0.0752	0.0816	0.0140	0.0167	0.0194
84	0.3081	0.3164	0.3247	0.3823	0.3930	0.4037	0.1439	0.1516	0.1593	0.0467	0.0514	0.0561	0.0645	0.0703	0.0762	0.0147	0.0172	0.0198
85	0.3171	0.3257	0.3342	0.3876	0.3985	0.4094	0.1444	0.1522	0.1601	0.0414	0.0462	0.0511	0.0555	0.0612	0.0669	0.0135	0.0161	0.0187
86	0.3150	0.3230	0.3311	0.3840	0.3945	0.4049	0.1461	0.1538	0.1615	0.0489	0.0537	0.0585	0.0509	0.0563	0.0616	0.0161	0.0188	0.0214

Source: IHS HealthEcon (2006).

Table 30: Transition probabilities for women from "Very good" to other health states – GER

	Very Good			Good			Fair			Bad			Residential care			Death		
Women	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	0.3590	0.3633	0.3676	0.4561	0.4611	0.4660	0.1316	0.1345	0.1373	0.0342	0.0358	0.0373	0.0019	0.0023	0.0027	0.0024	0.0031	0.0038
66	0.3719	0.3766	0.3813	0.4343	0.4395	0.4446	0.1354	0.1385	0.1417	0.0371	0.0388	0.0405	0.0026	0.0031	0.0036	0.0028	0.0036	0.0043
67	0.3786	0.3833	0.3879	0.4156	0.4207	0.4257	0.1429	0.1460	0.1492	0.0405	0.0422	0.0440	0.0032	0.0037	0.0042	0.0033	0.0041	0.0049
68	0.3694	0.3738	0.3781	0.4183	0.4231	0.4279	0.1462	0.1493	0.1524	0.0432	0.0449	0.0467	0.0038	0.0044	0.0049	0.0037	0.0045	0.0053
69	0.3743	0.3785	0.3827	0.4124	0.4171	0.4218	0.1452	0.1483	0.1514	0.0442	0.0459	0.0477	0.0049	0.0055	0.0061	0.0038	0.0047	0.0055
70	0.3703	0.3743	0.3782	0.4087	0.4133	0.4178	0.1491	0.1522	0.1552	0.0469	0.0486	0.0504	0.0059	0.0065	0.0072	0.0043	0.0052	0.0060
71	0.3579	0.3617	0.3655	0.4160	0.4204	0.4248	0.1506	0.1536	0.1565	0.0492	0.0509	0.0526	0.0071	0.0078	0.0085	0.0048	0.0056	0.0065
72	0.3395	0.3433	0.3472	0.4202	0.4247	0.4293	0.1583	0.1614	0.1645	0.0519	0.0537	0.0555	0.0098	0.0106	0.0114	0.0053	0.0062	0.0071
73	0.3359	0.3401	0.3442	0.4116	0.4166	0.4215	0.1621	0.1655	0.1689	0.0535	0.0555	0.0574	0.0145	0.0156	0.0167	0.0058	0.0068	0.0078
74	0.3281	0.3323	0.3365	0.4091	0.4142	0.4193	0.1633	0.1668	0.1703	0.0563	0.0584	0.0605	0.0198	0.0211	0.0224	0.0062	0.0073	0.0084
75	0.3114	0.3158	0.3201	0.4076	0.4130	0.4184	0.1671	0.1709	0.1748	0.0609	0.0632	0.0655	0.0275	0.0291	0.0308	0.0068	0.0080	0.0092
76	0.3107	0.3152	0.3197	0.3935	0.3991	0.4048	0.1692	0.1732	0.1773	0.0632	0.0657	0.0682	0.0366	0.0386	0.0405	0.0068	0.0082	0.0095
77	0.3006	0.3050	0.3095	0.3976	0.4033	0.4090	0.1657	0.1699	0.1740	0.0658	0.0684	0.0709	0.0430	0.0452	0.0474	0.0069	0.0082	0.0096
78	0.2969	0.3016	0.3063	0.3858	0.3919	0.3979	0.1667	0.1711	0.1756	0.0681	0.0708	0.0736	0.0538	0.0564	0.0590	0.0066	0.0082	0.0097
79	0.2624	0.2673	0.2722	0.4013	0.4078	0.4143	0.1699	0.1747	0.1795	0.0689	0.0719	0.0749	0.0671	0.0702	0.0733	0.0065	0.0081	0.0098
80	0.2586	0.2649	0.2712	0.3638	0.3721	0.3804	0.1569	0.1630	0.1691	0.0644	0.0683	0.0721	0.1183	0.1236	0.1290	0.0060	0.0081	0.0103
81	0.2220	0.2281	0.2341	0.3668	0.3751	0.3834	0.1680	0.1743	0.1806	0.0666	0.0707	0.0748	0.1361	0.1419	0.1477	0.0076	0.0099	0.0122
82	0.2166	0.2230	0.2294	0.3248	0.3336	0.3425	0.1588	0.1656	0.1724	0.0621	0.0666	0.0710	0.1933	0.2009	0.2085	0.0078	0.0104	0.0130
83	0.2199	0.2253	0.2308	0.3187	0.3265	0.3343	0.1721	0.1782	0.1843	0.0695	0.0736	0.0776	0.1774	0.1838	0.1901	0.0102	0.0126	0.0150
84	0.2256	0.2306	0.2356	0.3098	0.3169	0.3240	0.1761	0.1818	0.1874	0.0697	0.0735	0.0773	0.1790	0.1849	0.1908	0.0101	0.0124	0.0147
85	0.2052	0.2096	0.2140	0.3364	0.3429	0.3495	0.1835	0.1887	0.1939	0.0691	0.0726	0.0762	0.1700	0.1753	0.1806	0.0087	0.0108	0.0129
86	0.1962	0.2012	0.2063	0.3169	0.3244	0.3318	0.1834	0.1894	0.1955	0.0719	0.0760	0.0801	0.1923	0.1988	0.2053	0.0077	0.0101	0.0126

Source: IHS HealthEcon (2006).

Table 31: Transition probabilities for men from "Good" to other health states – GER

	Very Good			Good			Fair			Bad			Residential care			Death		
Men	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	0.0465	0.0470	0.0474	0.5297	0.5309	0.5322	0.3518	0.3530	0.3542	0.0575	0.0581	0.0587	0.0003	0.0003	0.0004	0.0105	0.0107	0.0109
66	0.0433	0.0439	0.0444	0.5018	0.5031	0.5045	0.3800	0.3814	0.3827	0.0579	0.0585	0.0591	0.0004	0.0004	0.0005	0.0124	0.0127	0.0130
67	0.0526	0.0531	0.0537	0.4767	0.4782	0.4796	0.3930	0.3944	0.3959	0.0581	0.0588	0.0595	0.0005	0.0006	0.0007	0.0146	0.0149	0.0152
68	0.0518	0.0524	0.0530	0.4543	0.4558	0.4573	0.4097	0.4113	0.4128	0.0624	0.0631	0.0638	0.0008	0.0008	0.0009	0.0162	0.0166	0.0170
69	0.0477	0.0483	0.0490	0.4485	0.4502	0.4518	0.4146	0.4163	0.4180	0.0653	0.0661	0.0669	0.0011	0.0012	0.0013	0.0175	0.0179	0.0183
70	0.0474	0.0481	0.0487	0.4397	0.4414	0.4431	0.4189	0.4206	0.4224	0.0680	0.0689	0.0697	0.0015	0.0016	0.0017	0.0190	0.0194	0.0199
71	0.0452	0.0458	0.0465	0.4354	0.4372	0.4389	0.4208	0.4227	0.4246	0.0705	0.0714	0.0723	0.0019	0.0020	0.0022	0.0204	0.0209	0.0214
72	0.0425	0.0431	0.0438	0.4233	0.4251	0.4269	0.4299	0.4318	0.4338	0.0738	0.0748	0.0758	0.0024	0.0026	0.0027	0.0221	0.0226	0.0231
73	0.0376	0.0383	0.0390	0.4293	0.4312	0.4331	0.4224	0.4245	0.4265	0.0774	0.0785	0.0795	0.0031	0.0033	0.0035	0.0237	0.0243	0.0248
74	0.0372	0.0378	0.0385	0.4096	0.4115	0.4134	0.4355	0.4376	0.4397	0.0818	0.0829	0.0840	0.0037	0.0040	0.0042	0.0256	0.0262	0.0268
75	0.0317	0.0324	0.0331	0.3995	0.4015	0.4036	0.4396	0.4419	0.4442	0.0885	0.0898	0.0910	0.0050	0.0053	0.0056	0.0284	0.0291	0.0298
76	0.0326	0.0333	0.0340	0.3941	0.3963	0.3985	0.4359	0.4384	0.4409	0.0932	0.0946	0.0959	0.0063	0.0067	0.0070	0.0300	0.0308	0.0315
77	0.0288	0.0295	0.0303	0.3981	0.4004	0.4027	0.4298	0.4325	0.4351	0.0960	0.0975	0.0989	0.0076	0.0080	0.0085	0.0312	0.0321	0.0329
78	0.0293	0.0301	0.0308	0.3829	0.3853	0.3877	0.4350	0.4378	0.4406	0.1015	0.1030	0.1046	0.0086	0.0091	0.0096	0.0339	0.0348	0.0357
79	0.0252	0.0260	0.0269	0.3697	0.3724	0.3751	0.4398	0.4430	0.4462	0.1078	0.1096	0.1114	0.0107	0.0114	0.0120	0.0365	0.0376	0.0387
80	0.0277	0.0286	0.0295	0.3631	0.3662	0.3692	0.4378	0.4414	0.4450	0.1075	0.1096	0.1117	0.0137	0.0145	0.0153	0.0384	0.0397	0.0409
81	0.0253	0.0263	0.0273	0.3571	0.3605	0.3638	0.4413	0.4452	0.4492	0.1048	0.1071	0.1094	0.0171	0.0181	0.0191	0.0414	0.0428	0.0442
82	0.0253	0.0263	0.0273	0.3215	0.3249	0.3283	0.4538	0.4580	0.4622	0.1151	0.1176	0.1201	0.0210	0.0222	0.0234	0.0494	0.0510	0.0525
83	0.0240	0.0250	0.0261	0.2811	0.2849	0.2886	0.4746	0.4794	0.4841	0.1188	0.1216	0.1245	0.0298	0.0314	0.0330	0.0558	0.0577	0.0595
84	0.0209	0.0221	0.0232	0.3018	0.3060	0.3103	0.4407	0.4461	0.4515	0.1178	0.1211	0.1243	0.0424	0.0445	0.0466	0.0581	0.0603	0.0624
85	0.0199	0.0210	0.0220	0.2984	0.3022	0.3060	0.4529	0.4578	0.4627	0.1136	0.1167	0.1197	0.0383	0.0402	0.0421	0.0601	0.0621	0.0641
86	0.0191	0.0201	0.0211	0.2861	0.2898	0.2936	0.4444	0.4493	0.4542	0.1277	0.1308	0.1339	0.0385	0.0404	0.0423	0.0675	0.0696	0.0716

Source: IHS HealthEcon (2006).

Table 32: Transition probabilities for women from "Good" to other health states – GER

	Very Good			Good			Fair			Bad			Residential care			Death		
Women	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	0.0511	0.0517	0.0522	0.5131	0.5145	0.5159	0.3624	0.3637	0.3650	0.0643	0.0650	0.0656	0.0005	0.0006	0.0007	0.0043	0.0046	0.0048
66	0.0604	0.0610	0.0616	0.5030	0.5045	0.5060	0.3664	0.3678	0.3692	0.0601	0.0608	0.0615	0.0007	0.0008	0.0009	0.0049	0.0052	0.0055
67	0.0692	0.0698	0.0705	0.4886	0.4901	0.4917	0.3767	0.3782	0.3797	0.0543	0.0550	0.0556	0.0010	0.0010	0.0011	0.0055	0.0058	0.0062
68	0.0666	0.0673	0.0679	0.4833	0.4848	0.4864	0.3804	0.3819	0.3835	0.0575	0.0582	0.0588	0.0013	0.0014	0.0015	0.0061	0.0064	0.0068
69	0.0655	0.0661	0.0668	0.4740	0.4755	0.4771	0.3856	0.3871	0.3887	0.0615	0.0622	0.0629	0.0017	0.0019	0.0020	0.0068	0.0071	0.0075
70	0.0648	0.0654	0.0661	0.4651	0.4666	0.4682	0.3910	0.3926	0.3942	0.0644	0.0651	0.0658	0.0023	0.0024	0.0026	0.0075	0.0078	0.0082
71	0.0604	0.0610	0.0616	0.4627	0.4643	0.4659	0.3924	0.3940	0.3956	0.0680	0.0688	0.0695	0.0031	0.0032	0.0034	0.0082	0.0086	0.0090
72	0.0542	0.0548	0.0554	0.4502	0.4518	0.4534	0.4053	0.4069	0.4086	0.0719	0.0727	0.0735	0.0040	0.0042	0.0044	0.0092	0.0096	0.0100
73	0.0529	0.0535	0.0541	0.4369	0.4386	0.4402	0.4144	0.4161	0.4178	0.0748	0.0756	0.0764	0.0054	0.0056	0.0059	0.0101	0.0106	0.0110
74	0.0491	0.0498	0.0504	0.4250	0.4267	0.4284	0.4200	0.4219	0.4237	0.0812	0.0821	0.0830	0.0075	0.0078	0.0081	0.0114	0.0119	0.0123
75	0.0471	0.0477	0.0484	0.4189	0.4207	0.4225	0.4206	0.4226	0.4245	0.0851	0.0861	0.0871	0.0101	0.0105	0.0108	0.0119	0.0125	0.0130
76	0.0469	0.0476	0.0482	0.4043	0.4062	0.4080	0.4275	0.4295	0.4315	0.0892	0.0902	0.0913	0.0132	0.0136	0.0140	0.0124	0.0129	0.0135
77	0.0441	0.0448	0.0455	0.4031	0.4050	0.4070	0.4208	0.4230	0.4251	0.0945	0.0956	0.0968	0.0176	0.0181	0.0186	0.0129	0.0135	0.0141
78	0.0423	0.0430	0.0437	0.3876	0.3897	0.3917	0.4272	0.4295	0.4318	0.1003	0.1015	0.1027	0.0218	0.0224	0.0230	0.0132	0.0139	0.0146
79	0.0345	0.0353	0.0360	0.3838	0.3861	0.3884	0.4279	0.4305	0.4332	0.1027	0.1041	0.1055	0.0291	0.0299	0.0307	0.0132	0.0140	0.0149
80	0.0358	0.0365	0.0373	0.3704	0.3729	0.3754	0.4277	0.4305	0.4334	0.1055	0.1071	0.1086	0.0366	0.0375	0.0385	0.0145	0.0154	0.0163
81	0.0305	0.0313	0.0322	0.3603	0.3630	0.3657	0.4326	0.4357	0.4389	0.1019	0.1036	0.1054	0.0483	0.0495	0.0508	0.0157	0.0168	0.0178
82	0.0314	0.0322	0.0330	0.3387	0.3413	0.3440	0.4391	0.4423	0.4454	0.1039	0.1057	0.1075	0.0579	0.0593	0.0607	0.0181	0.0192	0.0203
83	0.0292	0.0300	0.0308	0.3097	0.3123	0.3149	0.4473	0.4505	0.4538	0.1102	0.1121	0.1139	0.0713	0.0728	0.0743	0.0211	0.0223	0.0235
84	0.0284	0.0292	0.0300	0.2908	0.2935	0.2962	0.4472	0.4505	0.4539	0.1091	0.1111	0.1130	0.0919	0.0937	0.0955	0.0208	0.0220	0.0232
85	0.0238	0.0246	0.0254	0.2937	0.2965	0.2993	0.4386	0.4421	0.4456	0.1029	0.1049	0.1069	0.1114	0.1135	0.1155	0.0172	0.0185	0.0197
86	0.0226	0.0233	0.0241	0.2781	0.2807	0.2834	0.4481	0.4514	0.4548	0.1114	0.1134	0.1153	0.1110	0.1130	0.1150	0.0168	0.0181	0.0194

Source: IHS HealthEcon (2006).

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Table 33: Transition probabilities for men from "Fair" to other health states – GER

	Very Good			Good			Fair			Bad			Residential care			Death		
Men	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	0.0054	0.0055	0.0057	0.1715	0.1722	0.1728	0.6252	0.6262	0.6271	0.1805	0.1812	0.1819	0.0008	0.0008	0.0009	0.0139	0.0141	0.0142
66	0.0046	0.0048	0.0049	0.1657	0.1664	0.1670	0.6386	0.6395	0.6405	0.1726	0.1733	0.1740	0.0009	0.0010	0.0010	0.0148	0.0150	0.0152
67	0.0053	0.0054	0.0056	0.1667	0.1674	0.1680	0.6373	0.6383	0.6392	0.1710	0.1717	0.1723	0.0011	0.0012	0.0013	0.0159	0.0161	0.0163
68	0.0052	0.0054	0.0055	0.1558	0.1565	0.1571	0.6424	0.6433	0.6442	0.1755	0.1762	0.1769	0.0015	0.0016	0.0017	0.0168	0.0171	0.0173
69	0.0049	0.0050	0.0052	0.1534	0.1540	0.1546	0.6398	0.6408	0.6417	0.1796	0.1803	0.1810	0.0019	0.0020	0.0021	0.0177	0.0179	0.0181
70	0.0051	0.0052	0.0054	0.1522	0.1528	0.1535	0.6379	0.6389	0.6399	0.1811	0.1818	0.1826	0.0025	0.0026	0.0027	0.0184	0.0186	0.0188
71	0.0050	0.0051	0.0052	0.1512	0.1519	0.1525	0.6343	0.6353	0.6363	0.1841	0.1849	0.1856	0.0032	0.0033	0.0034	0.0193	0.0196	0.0198
72	0.0046	0.0048	0.0049	0.1450	0.1456	0.1463	0.6345	0.6356	0.6367	0.1883	0.1891	0.1899	0.0041	0.0042	0.0044	0.0204	0.0207	0.0209
73	0.0042	0.0044	0.0045	0.1487	0.1494	0.1501	0.6219	0.6230	0.6241	0.1951	0.1960	0.1969	0.0052	0.0054	0.0055	0.0215	0.0218	0.0221
74	0.0042	0.0043	0.0045	0.1395	0.1402	0.1410	0.6240	0.6253	0.6265	0.1994	0.2003	0.2013	0.0069	0.0071	0.0073	0.0224	0.0227	0.0231
75	0.0036	0.0038	0.0039	0.1354	0.1362	0.1370	0.6162	0.6175	0.6188	0.2085	0.2095	0.2105	0.0085	0.0088	0.0090	0.0239	0.0242	0.0246
76	0.0038	0.0040	0.0041	0.1337	0.1345	0.1353	0.6063	0.6076	0.6090	0.2167	0.2178	0.2188	0.0106	0.0109	0.0111	0.0249	0.0253	0.0256
77	0.0034	0.0036	0.0037	0.1356	0.1364	0.1373	0.5962	0.5976	0.5991	0.2216	0.2228	0.2240	0.0131	0.0135	0.0138	0.0257	0.0261	0.0265
78	0.0035	0.0037	0.0039	0.1298	0.1307	0.1317	0.5917	0.5933	0.5950	0.2271	0.2284	0.2297	0.0162	0.0165	0.0169	0.0268	0.0273	0.0278
79	0.0031	0.0033	0.0035	0.1252	0.1262	0.1273	0.5861	0.5879	0.5897	0.2331	0.2345	0.2360	0.0193	0.0198	0.0203	0.0276	0.0282	0.0287
80	0.0035	0.0037	0.0039	0.1231	0.1242	0.1253	0.5822	0.5842	0.5862	0.2322	0.2339	0.2355	0.0237	0.0243	0.0248	0.0291	0.0298	0.0304
81	0.0031	0.0033	0.0036	0.1199	0.1211	0.1223	0.5832	0.5853	0.5875	0.2266	0.2284	0.2302	0.0289	0.0296	0.0303	0.0315	0.0322	0.0329
82	0.0031	0.0033	0.0035	0.1051	0.1063	0.1075	0.5771	0.5793	0.5816	0.2377	0.2395	0.2414	0.0342	0.0350	0.0358	0.0358	0.0366	0.0373
83	0.0031	0.0033	0.0035	0.0923	0.0934	0.0946	0.5865	0.5887	0.5910	0.2331	0.2349	0.2368	0.0402	0.0410	0.0419	0.0378	0.0385	0.0393
84	0.0029	0.0031	0.0033	0.1034	0.1046	0.1057	0.5633	0.5655	0.5677	0.2379	0.2398	0.2417	0.0450	0.0460	0.0469	0.0403	0.0411	0.0418
85	0.0028	0.0031	0.0033	0.1033	0.1045	0.1057	0.5702	0.5726	0.5749	0.2220	0.2240	0.2261	0.0545	0.0556	0.0567	0.0394	0.0402	0.0411
86	0.0027	0.0029	0.0031	0.0967	0.0979	0.0992	0.5468	0.5492	0.5517	0.2434	0.2455	0.2476	0.0590	0.0601	0.0613	0.0434	0.0443	0.0452

Source: IHS HealthEcon (2006).

Table 34: Transition probabilities for women from "Fair" to other health states – GER

	Very Good			Good			Fair			Bad			Residential care			Death		
Women	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	0.0048	0.0049	0.0050	0.1524	0.1530	0.1536	0.6282	0.6291	0.6299	0.2042	0.2048	0.2055	0.0011	0.0012	0.0012	0.0069	0.0071	0.0072
66	0.0049	0.0051	0.0052	0.1516	0.1522	0.1528	0.6295	0.6304	0.6313	0.2024	0.2031	0.2038	0.0013	0.0014	0.0015	0.0077	0.0079	0.0080
67	0.0051	0.0052	0.0053	0.1496	0.1502	0.1508	0.6374	0.6383	0.6392	0.1953	0.1959	0.1966	0.0017	0.0018	0.0019	0.0084	0.0086	0.0088
68	0.0050	0.0051	0.0052	0.1479	0.1485	0.1491	0.6325	0.6334	0.6344	0.2007	0.2014	0.2021	0.0023	0.0024	0.0024	0.0090	0.0092	0.0094
69	0.0051	0.0052	0.0053	0.1452	0.1458	0.1464	0.6278	0.6287	0.6297	0.2066	0.2073	0.2080	0.0030	0.0031	0.0032	0.0096	0.0098	0.0100
70	0.0050	0.0052	0.0053	0.1413	0.1419	0.1425	0.6253	0.6262	0.6272	0.2113	0.2120	0.2127	0.0041	0.0042	0.0043	0.0103	0.0105	0.0108
71	0.0047	0.0048	0.0049	0.1392	0.1398	0.1404	0.6176	0.6186	0.6195	0.2191	0.2199	0.2206	0.0054	0.0055	0.0056	0.0112	0.0115	0.0117
72	0.0042	0.0044	0.0045	0.1334	0.1340	0.1346	0.6185	0.6195	0.6205	0.2221	0.2228	0.2236	0.0071	0.0073	0.0074	0.0119	0.0121	0.0124
73	0.0041	0.0042	0.0044	0.1274	0.1280	0.1286	0.6186	0.6196	0.6205	0.2251	0.2259	0.2267	0.0091	0.0092	0.0094	0.0128	0.0130	0.0133
74	0.0039	0.0040	0.0041	0.1230	0.1236	0.1242	0.6104	0.6114	0.6124	0.2346	0.2354	0.2362	0.0115	0.0117	0.0119	0.0136	0.0139	0.0142
75	0.0038	0.0039	0.0040	0.1207	0.1213	0.1218	0.6024	0.6035	0.6045	0.2411	0.2419	0.2427	0.0150	0.0152	0.0155	0.0140	0.0143	0.0146
76	0.0038	0.0039	0.0040	0.1148	0.1154	0.1160	0.5988	0.5998	0.6009	0.2460	0.2468	0.2477	0.0194	0.0197	0.0199	0.0141	0.0144	0.0147
77	0.0037	0.0038	0.0039	0.1157	0.1163	0.1169	0.5844	0.5855	0.5866	0.2543	0.2552	0.2560	0.0243	0.0246	0.0249	0.0143	0.0146	0.0150
78	0.0035	0.0036	0.0038	0.1094	0.1100	0.1107	0.5771	0.5783	0.5795	0.2607	0.2616	0.2626	0.0316	0.0320	0.0323	0.0141	0.0144	0.0148
79	0.0029	0.0030	0.0032	0.1080	0.1087	0.1094	0.5698	0.5711	0.5725	0.2611	0.2622	0.2633	0.0401	0.0406	0.0411	0.0138	0.0143	0.0147
80	0.0030	0.0031	0.0033	0.1032	0.1040	0.1048	0.5604	0.5619	0.5633	0.2630	0.2642	0.2654	0.0508	0.0513	0.0519	0.0149	0.0154	0.0159
81	0.0026	0.0027	0.0028	0.0996	0.1004	0.1012	0.5613	0.5629	0.5644	0.2521	0.2534	0.2547	0.0632	0.0639	0.0646	0.0162	0.0167	0.0172
82	0.0028	0.0029	0.0030	0.0944	0.0952	0.0959	0.5591	0.5606	0.5622	0.2472	0.2485	0.2498	0.0739	0.0746	0.0754	0.0177	0.0182	0.0187
83	0.0026	0.0028	0.0029	0.0858	0.0865	0.0872	0.5523	0.5538	0.5553	0.2498	0.2510	0.2523	0.0854	0.0862	0.0869	0.0192	0.0197	0.0203
84	0.0026	0.0027	0.0028	0.0799	0.0806	0.0813	0.5490	0.5504	0.5518	0.2471	0.2483	0.2496	0.0976	0.0984	0.0992	0.0190	0.0195	0.0201
85	0.0022	0.0023	0.0024	0.0822	0.0829	0.0836	0.5479	0.5493	0.5507	0.2378	0.2390	0.2402	0.1087	0.1095	0.1104	0.0164	0.0169	0.0175
86	0.0021	0.0022	0.0023	0.0759	0.0765	0.0772	0.5395	0.5409	0.5423	0.2455	0.2467	0.2479	0.1171	0.1180	0.1189	0.0151	0.0157	0.0162

Source: IHS HealthEcon (2006).

Table 35: Transition probabilities for men from "Bad" to other health states – GER

	Very Good			Good			Fair			Bad			Residential care			Death		
Men	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	0.0017	0.0018	0.0019	0.0385	0.0389	0.0394	0.2597	0.2609	0.2620	0.6484	0.6498	0.6512	0.0023	0.0024	0.0025	0.0458	0.0462	0.0465
66	0.0014	0.0016	0.0017	0.0369	0.0374	0.0379	0.2687	0.2698	0.2710	0.6363	0.6378	0.6392	0.0027	0.0029	0.0030	0.0501	0.0505	0.0509
67	0.0016	0.0017	0.0019	0.0364	0.0369	0.0374	0.2677	0.2689	0.2701	0.6326	0.6341	0.6355	0.0035	0.0036	0.0038	0.0544	0.0549	0.0553
68	0.0015	0.0017	0.0018	0.0330	0.0335	0.0340	0.2623	0.2635	0.2647	0.6372	0.6386	0.6400	0.0043	0.0045	0.0047	0.0578	0.0582	0.0587
69	0.0014	0.0015	0.0016	0.0317	0.0322	0.0326	0.2550	0.2562	0.2573	0.6418	0.6432	0.6446	0.0054	0.0056	0.0058	0.0609	0.0614	0.0618
70	0.0015	0.0016	0.0017	0.0310	0.0315	0.0319	0.2505	0.2517	0.2529	0.6427	0.6441	0.6455	0.0067	0.0069	0.0071	0.0638	0.0643	0.0647
71	0.0014	0.0015	0.0016	0.0300	0.0305	0.0310	0.2434	0.2446	0.2458	0.6451	0.6466	0.6481	0.0085	0.0087	0.0089	0.0677	0.0681	0.0686
72	0.0013	0.0014	0.0015	0.0280	0.0285	0.0289	0.2369	0.2381	0.2393	0.6477	0.6493	0.6508	0.0107	0.0109	0.0112	0.0714	0.0719	0.0724
73	0.0011	0.0012	0.0013	0.0277	0.0282	0.0286	0.2241	0.2254	0.2266	0.6545	0.6561	0.6577	0.0133	0.0136	0.0139	0.0750	0.0755	0.0761
74	0.0010	0.0011	0.0012	0.0250	0.0255	0.0260	0.2177	0.2189	0.2202	0.6572	0.6588	0.6604	0.0161	0.0165	0.0168	0.0786	0.0792	0.0798
75	0.0009	0.0010	0.0011	0.0232	0.0237	0.0242	0.2058	0.2071	0.2083	0.6641	0.6657	0.6674	0.0191	0.0195	0.0199	0.0824	0.0830	0.0837
76	0.0009	0.0010	0.0011	0.0219	0.0224	0.0228	0.1942	0.1955	0.1967	0.6716	0.6732	0.6749	0.0214	0.0218	0.0223	0.0855	0.0861	0.0867
77	0.0007	0.0008	0.0009	0.0216	0.0221	0.0225	0.1857	0.1870	0.1882	0.6753	0.6769	0.6786	0.0237	0.0241	0.0246	0.0885	0.0891	0.0897
78	0.0008	0.0008	0.0009	0.0202	0.0206	0.0211	0.1793	0.1806	0.1819	0.6774	0.6791	0.6808	0.0262	0.0267	0.0272	0.0915	0.0922	0.0928
79	0.0006	0.0007	0.0008	0.0186	0.0191	0.0195	0.1711	0.1724	0.1737	0.6809	0.6827	0.6845	0.0291	0.0297	0.0302	0.0947	0.0954	0.0961
80	0.0007	0.0008	0.0009	0.0183	0.0188	0.0193	0.1685	0.1699	0.1714	0.6738	0.6757	0.6776	0.0333	0.0340	0.0346	0.1001	0.1008	0.1016
81	0.0006	0.0007	0.0008	0.0176	0.0181	0.0186	0.1666	0.1681	0.1696	0.6578	0.6599	0.6619	0.0411	0.0419	0.0426	0.1105	0.1114	0.1123
82	0.0006	0.0007	0.0008	0.0144	0.0149	0.0154	0.1543	0.1559	0.1575	0.6521	0.6544	0.6566	0.0517	0.0526	0.0535	0.1205	0.1215	0.1225
83	0.0006	0.0007	0.0008	0.0124	0.0129	0.0134	0.1539	0.1555	0.1571	0.6367	0.6389	0.6412	0.0611	0.0621	0.0631	0.1289	0.1299	0.1309
84	0.0005	0.0006	0.0007	0.0130	0.0135	0.0140	0.1402	0.1418	0.1434	0.6304	0.6327	0.6350	0.0722	0.0733	0.0744	0.1371	0.1381	0.1392
85	0.0005	0.0006	0.0007	0.0132	0.0137	0.0142	0.1448	0.1465	0.1481	0.6094	0.6118	0.6142	0.0847	0.0859	0.0871	0.1404	0.1415	0.1427
86	0.0004	0.0005	0.0006	0.0114	0.0119	0.0124	0.1270	0.1287	0.1305	0.6099	0.6126	0.6153	0.1009	0.1024	0.1039	0.1425	0.1438	0.1452

Source: IHS HealthEcon (2006).

Table 36: Transition probabilities for women from "Bad" to other health states – GER

	Very Good			Good			Fair			Bad			Residential care			Death		
Women	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	0.0023	0.0024	0.0025	0.0429	0.0433	0.0438	0.2831	0.2841	0.2851	0.6482	0.6494	0.6506	0.0027	0.0028	0.0029	0.0177	0.0180	0.0183
66	0.0024	0.0025	0.0026	0.0425	0.0429	0.0434	0.2837	0.2847	0.2857	0.6459	0.6471	0.6483	0.0032	0.0033	0.0034	0.0192	0.0195	0.0198
67	0.0024	0.0025	0.0026	0.0421	0.0425	0.0430	0.2887	0.2897	0.2907	0.6392	0.6403	0.6415	0.0039	0.0040	0.0041	0.0206	0.0210	0.0213
68	0.0023	0.0024	0.0025	0.0404	0.0408	0.0413	0.2791	0.2801	0.2811	0.6478	0.6489	0.6501	0.0050	0.0051	0.0053	0.0223	0.0226	0.0229
69	0.0023	0.0024	0.0025	0.0384	0.0388	0.0393	0.2695	0.2704	0.2714	0.6565	0.6576	0.6587	0.0063	0.0065	0.0066	0.0240	0.0243	0.0246
70	0.0022	0.0023	0.0024	0.0368	0.0372	0.0376	0.2632	0.2641	0.2650	0.6610	0.6622	0.6633	0.0079	0.0081	0.0083	0.0258	0.0261	0.0265
71	0.0020	0.0021	0.0022	0.0352	0.0356	0.0360	0.2520	0.2530	0.2539	0.6699	0.6710	0.6721	0.0100	0.0101	0.0103	0.0278	0.0282	0.0285
72	0.0018	0.0019	0.0019	0.0329	0.0332	0.0336	0.2469	0.2478	0.2487	0.6733	0.6743	0.6754	0.0123	0.0125	0.0127	0.0300	0.0303	0.0307
73	0.0017	0.0018	0.0019	0.0308	0.0312	0.0315	0.2421	0.2430	0.2439	0.6746	0.6756	0.6767	0.0153	0.0155	0.0158	0.0326	0.0329	0.0333
74	0.0015	0.0016	0.0017	0.0286	0.0289	0.0293	0.2300	0.2308	0.2317	0.6838	0.6848	0.6859	0.0190	0.0192	0.0195	0.0342	0.0346	0.0349
75	0.0015	0.0015	0.0016	0.0273	0.0276	0.0279	0.2206	0.2215	0.2223	0.6899	0.6909	0.6919	0.0226	0.0229	0.0232	0.0353	0.0356	0.0360
76	0.0014	0.0015	0.0016	0.0253	0.0256	0.0259	0.2140	0.2148	0.2156	0.6939	0.6949	0.6959	0.0267	0.0270	0.0273	0.0357	0.0361	0.0365
77	0.0013	0.0014	0.0014	0.0244	0.0247	0.0250	0.2012	0.2020	0.2028	0.7027	0.7037	0.7047	0.0314	0.0317	0.0320	0.0361	0.0365	0.0369
78	0.0012	0.0013	0.0014	0.0224	0.0227	0.0230	0.1934	0.1942	0.1950	0.7086	0.7096	0.7106	0.0360	0.0363	0.0367	0.0354	0.0358	0.0362
79	0.0010	0.0011	0.0011	0.0221	0.0224	0.0227	0.1894	0.1902	0.1910	0.7075	0.7085	0.7095	0.0415	0.0419	0.0423	0.0355	0.0359	0.0364
80	0.0010	0.0011	0.0012	0.0208	0.0211	0.0214	0.1828	0.1836	0.1845	0.7040	0.7051	0.7062	0.0497	0.0501	0.0506	0.0385	0.0390	0.0394
81	0.0009	0.0010	0.0010	0.0203	0.0206	0.0209	0.1845	0.1854	0.1862	0.6851	0.6862	0.6873	0.0617	0.0622	0.0628	0.0441	0.0446	0.0451
82	0.0009	0.0010	0.0011	0.0188	0.0192	0.0195	0.1801	0.1811	0.1820	0.6657	0.6669	0.6681	0.0819	0.0825	0.0831	0.0488	0.0494	0.0499
83	0.0009	0.0009	0.0010	0.0163	0.0167	0.0170	0.1701	0.1711	0.1720	0.6513	0.6526	0.6539	0.1053	0.1060	0.1067	0.0522	0.0528	0.0534
84	0.0008	0.0009	0.0009	0.0148	0.0151	0.0154	0.1647	0.1657	0.1666	0.6366	0.6379	0.6392	0.1267	0.1275	0.1283	0.0523	0.0530	0.0536
85	0.0007	0.0007	0.0008	0.0151	0.0154	0.0157	0.1629	0.1639	0.1648	0.6164	0.6178	0.6191	0.1531	0.1540	0.1549	0.0476	0.0483	0.0490
86	0.0006	0.0007	0.0007	0.0130	0.0134	0.0137	0.1508	0.1518	0.1528	0.6040	0.6054	0.6069	0.1844	0.1854	0.1865	0.0426	0.0433	0.0441

Source: IHS HealthEcon (2006).

Table 37: Transition probabilities from "Residential care" to other health states – GER

	Residential care			Death		
Men	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	0.8321	0.8429	0.8537	0.1506	0.1571	0.1637
66	0.8135	0.8244	0.8353	0.1685	0.1756	0.1827
67	0.7746	0.7855	0.7965	0.2065	0.2145	0.2224
68	0.7035	0.7144	0.7252	0.2767	0.2856	0.2945
69	0.6260	0.6366	0.6473	0.3537	0.3634	0.3730
70	0.5469	0.5572	0.5675	0.4325	0.4428	0.4531
71	0.4667	0.4765	0.4862	0.5128	0.5235	0.5343
72	0.3884	0.3975	0.4066	0.5915	0.6025	0.6134
73	0.3114	0.3197	0.3280	0.6693	0.6803	0.6913
74	0.2276	0.2349	0.2421	0.7541	0.7651	0.7761
75	0.1458	0.1518	0.1577	0.8374	0.8482	0.8590
76	0.0827	0.0873	0.0920	0.9019	0.9127	0.9234
77	0.0382	0.0415	0.0447	0.9478	0.9585	0.9693
78	0.0093	0.0110	0.0128	0.9783	0.9890	0.9996
79	0.0010	0.0017	0.0025	0.9874	0.9983	1.0091
80	0.0068	0.0084	0.0101	0.9806	0.9916	1.0025
81	0.0140	0.0163	0.0186	0.9730	0.9837	0.9944
82	0.0114	0.0135	0.0155	0.9765	0.9865	0.9965
83	0.0101	0.0120	0.0138	0.9787	0.9880	0.9974
84	0.0085	0.0101	0.0117	0.9814	0.9899	0.9983
85	0.0043	0.0054	0.0065	0.9867	0.9946	1.0025
86	0.0001	0.0005	0.0008	0.9922	0.9995	1.0069

	Residential care			Death		
Women	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	0.8349	0.8471	0.8594	0.1435	0.1529	0.1622
66	0.8233	0.8352	0.8471	0.1554	0.1648	0.1743
67	0.7918	0.8032	0.8147	0.1870	0.1968	0.2065
68	0.7167	0.7275	0.7383	0.2621	0.2725	0.2829
69	0.6450	0.6551	0.6652	0.3343	0.3449	0.3554
70	0.6011	0.6104	0.6197	0.3794	0.3896	0.3998
71	0.5823	0.5908	0.5993	0.3998	0.4092	0.4186
72	0.5720	0.5797	0.5873	0.4118	0.4203	0.4288
73	0.5663	0.5732	0.5800	0.4193	0.4268	0.4344
74	0.5320	0.5380	0.5441	0.4551	0.4620	0.4689
75	0.4606	0.4659	0.4711	0.5276	0.5341	0.5406
76	0.3778	0.3824	0.3870	0.6113	0.6176	0.6239
77	0.3117	0.3158	0.3199	0.6781	0.6842	0.6903
78	0.2384	0.2419	0.2455	0.7520	0.7581	0.7641
79	0.1968	0.2001	0.2034	0.7939	0.7999	0.8059
80	0.2168	0.2201	0.2235	0.7741	0.7799	0.7857
81	0.2531	0.2566	0.2600	0.7381	0.7434	0.7488
82	0.2469	0.2501	0.2534	0.7451	0.7499	0.7547
83	0.2420	0.2450	0.2479	0.7508	0.7550	0.7593
84	0.2280	0.2306	0.2332	0.7657	0.7694	0.7732
85	0.1727	0.1748	0.1769	0.8217	0.8252	0.8287
86	0.1185	0.1203	0.1220	0.8764	0.8797	0.8830

Source: IHS HealthEcon (2006).

5.8 Calculated number of transitions: United Kingdom

Table 38: Calculated number of transitions for men starting from "Very good" to other health states – UK

	Very Good			Good			Fair			Bad			Residential care			Death		
Men	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	25113	25221	25328	14422	14520	14617	2801	2848	2894	482	503	524	9	12	15	363	386	409
66	24744	24837	24929	14667	14752	14837	2818	2858	2899	508	526	544	10	13	16	400	420	440
67	23992	24074	24156	14285	14360	14435	2861	2898	2934	518	534	550	12	15	18	427	445	463
68	22615	22694	22774	13960	14034	14108	2749	2785	2821	520	536	553	15	18	21	470	488	506
69	21037	21114	21192	13565	13637	13710	2662	2698	2734	526	542	559	18	21	25	487	505	523
70	19193	19267	19341	12816	12886	12957	2589	2624	2660	529	545	561	22	25	29	507	525	543
71	17279	17350	17421	11881	11949	12017	2486	2520	2555	509	525	541	26	30	34	520	539	557
72	15441	15509	15577	11306	11372	11437	2264	2297	2331	477	493	509	30	34	38	504	521	539
73	13714	13778	13843	10296	10359	10422	2156	2189	2221	453	468	483	35	39	44	508	525	543
74	12328	12390	12451	9571	9632	9692	2048	2080	2112	442	457	472	40	45	50	523	540	557
75	10744	10802	10861	8911	8969	9027	1896	1927	1958	405	420	434	45	50	55	512	529	546
76	9117	9171	9225	7754	7808	7863	1689	1718	1747	361	375	388	49	54	60	481	498	514
77	8203	8254	8304	6722	6773	6824	1502	1530	1558	331	345	358	52	57	62	468	484	500
78	7618	7667	7716	6555	6605	6655	1507	1535	1563	320	333	347	53	59	64	500	515	531
79	6615	6660	6705	5684	5731	5778	1350	1376	1402	275	288	300	53	59	65	491	507	522
80	5976	6018	6061	5166	5211	5256	1232	1257	1282	267	279	292	54	59	65	498	513	528
81	5574	5614	5655	4749	4793	4836	1131	1156	1181	244	256	268	54	59	65	495	509	524
82	5008	5047	5086	4680	4723	4765	1135	1160	1184	243	255	267	55	61	66	551	566	580
83	4138	4174	4209	3776	3815	3853	915	938	960	226	238	249	55	60	66	502	516	530
84	3703	3737	3770	3557	3594	3631	814	836	858	221	232	243	54	60	65	475	489	502
85	3215	3246	3277	2905	2939	2974	738	758	779	189	199	210	51	57	62	433	446	459
86	2816	2845	2874	2796	2829	2862	671	691	711	181	192	202	48	53	58	429	442	454

Source: IHS HealthEcon (2006)..

Table 39: Calculated number of transitions for women starting from "Very good" to other health states – UK

	Very Good			Good			Fair			Bad			Residential care			Death		
Women	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	20968	21070	21173	13577	13670	13763	2395	2439	2484	486	506	526	9	12	15	231	253	275
66	20958	21047	21135	13738	13818	13899	2425	2463	2502	493	511	528	11	14	17	239	258	277
67	20279	20357	20436	13724	13796	13868	2476	2511	2546	503	519	534	13	16	19	259	276	293
68	18461	18536	18611	12604	12673	12743	2389	2423	2457	484	500	515	18	21	24	268	285	302
69	17334	17406	17479	12017	12086	12154	2345	2378	2412	481	496	512	23	27	30	284	301	318
70	16076	16147	16218	11767	11834	11901	2285	2318	2352	475	490	505	29	33	38	295	312	329
71	14292	14359	14427	10924	10988	11053	2236	2268	2301	475	490	505	37	42	46	304	322	339
72	12935	12999	13063	9856	9917	9979	2028	2060	2091	449	464	478	46	51	56	293	309	326
73	12146	12209	12271	9831	9892	9953	2055	2086	2118	459	474	489	57	63	69	304	321	338
74	10915	10975	11034	8957	9016	9075	1963	1994	2025	438	452	466	70	77	83	300	317	334
75	9984	10041	10098	8403	8460	8517	1847	1877	1907	421	435	450	84	91	98	303	320	337
76	9181	9235	9290	7952	8007	8063	1739	1768	1798	403	417	431	97	104	112	311	327	344
77	8439	8492	8544	7525	7578	7632	1676	1705	1734	397	410	424	110	118	125	315	332	348
78	7818	7868	7918	6732	6783	6834	1557	1586	1614	370	384	397	120	128	137	319	335	352
79	7542	7591	7640	6858	6909	6960	1552	1580	1609	362	375	389	128	137	145	344	360	377
80	6785	6831	6878	6304	6353	6402	1509	1537	1565	356	370	383	139	148	157	353	369	386
81	6187	6231	6275	5657	5704	5751	1400	1427	1453	323	336	349	150	159	168	350	366	383
82	5841	5884	5927	5502	5548	5594	1417	1444	1470	317	330	343	161	171	180	389	405	421
83	5119	5159	5199	5175	5220	5264	1301	1327	1353	322	335	348	173	183	192	388	404	420
84	4318	4356	4393	4364	4405	4446	1117	1141	1166	291	303	315	182	192	202	355	371	386
85	3738	3773	3807	3889	3928	3966	1009	1032	1055	267	278	290	187	197	207	347	361	376
86	3011	3043	3074	3255	3291	3327	887	908	929	247	258	269	189	199	209	310	324	338

Source: IHS HealthEcon (2006).

Table 40: Calculated number of transitions for men starting from "Good" to other health states – UK

	Very Good			Good			Fair			Bad			Residential care			Death		
Men	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	16566	16669	16773	64169	64325	64480	18334	18441	18549	2637	2684	2731	26	31	37	921	955	989
66	16133	16222	16311	64325	64459	64593	18199	18292	18386	2740	2781	2822	30	35	40	999	1029	1058
67	15901	15979	16058	63621	63741	63860	18819	18903	18987	2851	2888	2925	35	39	44	1090	1117	1144
68	14606	14681	14757	60387	60505	60622	17624	17707	17789	2803	2840	2877	43	48	53	1175	1202	1229
69	13840	13914	13988	59728	59843	59959	17479	17562	17645	2919	2956	2993	51	56	62	1256	1284	1311
70	13089	13161	13233	58369	58483	58598	17662	17745	17827	3063	3101	3138	61	67	73	1367	1395	1423
71	12072	12141	12210	55202	55314	55425	17353	17435	17516	3034	3072	3109	72	79	85	1442	1470	1498
72	10890	10956	11022	53003	53112	53220	16035	16115	16195	2901	2938	2975	83	90	97	1425	1453	1481
73	10545	10609	10674	52499	52606	52713	16683	16763	16843	3023	3061	3099	97	104	112	1579	1608	1637
74	9638	9699	9761	49517	49621	49726	16149	16228	16307	3019	3056	3094	111	119	127	1664	1693	1722
75	8543	8601	8659	46841	46942	47043	15250	15327	15404	2841	2878	2915	123	132	140	1669	1698	1726
76	7919	7975	8031	44484	44582	44680	14895	14971	15047	2789	2826	2862	135	143	152	1734	1762	1791
77	7455	7508	7561	40168	40262	40356	13839	13913	13986	2684	2720	2756	143	152	161	1766	1794	1822
78	6222	6271	6320	34940	35028	35116	12373	12442	12511	2315	2349	2384	148	157	166	1675	1702	1729
79	5425	5470	5515	30375	30458	30541	11148	11213	11279	2017	2050	2082	150	159	168	1662	1688	1714
80	4664	4706	4748	26205	26282	26359	9681	9742	9804	1867	1898	1929	151	160	169	1604	1628	1653
81	4091	4129	4168	22949	23021	23093	8592	8650	8708	1665	1695	1724	153	162	171	1557	1580	1604
82	3304	3340	3376	20317	20385	20453	7768	7823	7879	1501	1529	1557	154	164	173	1569	1592	1615
83	3027	3061	3094	18096	18160	18224	6930	6982	7035	1546	1573	1601	156	165	174	1573	1596	1618
84	2523	2554	2584	15853	15913	15973	5768	5817	5866	1413	1438	1464	154	163	172	1394	1415	1436
85	2268	2297	2325	13431	13487	13543	5423	5469	5515	1261	1286	1310	148	157	166	1317	1338	1358
86	1633	1658	1683	10666	10716	10766	4106	4148	4189	1011	1033	1056	137	146	154	1093	1112	1131

Source: IHS HealthEcon (2006).

Table 41: Calculated number of transitions for women starting from "Good" to other health states – UK

	Very Good			Good			Fair			Bad			Residential care			Death		
Women	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	17257	17364	17471	84248	84416	84585	24053	24177	24300	4326	4382	4439	26	31	36	989	1029	1068
66	16514	16604	16695	81112	81257	81401	23125	23231	23337	4163	4212	4260	31	36	40	968	1002	1037
67	15847	15927	16007	80250	80378	80507	23413	23508	23602	4214	4258	4302	37	42	46	1034	1065	1096
68	15249	15327	15405	77629	77757	77884	23924	24019	24114	4316	4360	4405	49	55	60	1149	1180	1212
69	14193	14268	14344	73245	73370	73496	23358	23452	23546	4288	4332	4376	64	70	76	1224	1255	1287
70	12920	12992	13064	70392	70515	70639	22448	22541	22635	4194	4238	4281	80	87	94	1261	1293	1325
71	12149	12220	12290	68785	68907	69029	23174	23268	23361	4445	4490	4534	101	109	116	1375	1408	1441
72	11589	11657	11724	65046	65166	65286	22102	22194	22286	4434	4479	4523	126	135	143	1409	1442	1476
73	10486	10551	10616	62496	62614	62732	21657	21749	21840	4409	4454	4498	155	165	174	1418	1451	1485
74	9935	9998	10062	60091	60207	60324	21983	22074	22166	4491	4535	4580	190	201	211	1502	1536	1571
75	9144	9204	9265	56425	56539	56652	20721	20810	20900	4344	4388	4432	227	239	250	1529	1563	1597
76	8508	8566	8624	53872	53983	54093	19744	19832	19920	4220	4264	4307	263	275	287	1597	1631	1665
77	7876	7932	7988	51338	51447	51555	19252	19339	19426	4226	4269	4313	298	311	324	1649	1684	1718
78	7454	7507	7560	46648	46752	46855	18198	18282	18366	4023	4065	4108	330	343	357	1713	1748	1782
79	6337	6387	6436	41841	41940	42038	16022	16102	16181	3488	3528	3569	352	366	380	1633	1666	1699
80	5800	5847	5895	39119	39214	39309	15902	15980	16058	3523	3563	3604	382	396	411	1718	1751	1783
81	5244	5289	5333	34884	34975	35065	14736	14811	14886	3211	3250	3289	413	428	443	1720	1752	1784
82	4540	4582	4624	31160	31246	31332	13758	13830	13902	2923	2961	2999	445	460	476	1764	1795	1827
83	3874	3913	3952	28570	28653	28736	12382	12451	12520	2920	2957	2993	474	490	506	1730	1760	1791
84	3587	3624	3661	26392	26471	26550	11673	11740	11808	2903	2939	2975	502	518	534	1747	1778	1809
85	3017	3051	3085	22918	22993	23067	10325	10388	10452	2622	2656	2691	514	531	547	1678	1707	1737
86	2413	2444	2475	19165	19234	19303	9124	9183	9243	2456	2489	2521	516	533	549	1521	1549	1577

Source: IHS HealthEcon (2006).

Table 42: Populated matrices starting for men from “Fair” to other health states – UK

	Very Good			Good			Fair			Bad			Residential care			Death		
Men	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	2616	2663	2711	20465	20581	20697	38328	38458	38587	8765	8844	8922	128	139	150	1373	1412	1452
66	2549	2589	2630	20369	20469	20568	37544	37655	37767	8986	9053	9121	146	156	166	1473	1507	1541
67	2432	2468	2504	19350	19438	19526	37084	37184	37283	8916	8977	9037	165	174	184	1527	1558	1588
68	2497	2533	2569	20290	20379	20468	38060	38160	38260	9641	9703	9764	203	213	223	1823	1855	1886
69	2295	2329	2364	19209	19295	19382	35790	35888	35986	9523	9584	9645	242	253	264	1852	1883	1915
70	2053	2085	2118	17582	17665	17749	33662	33758	33854	9332	9392	9452	287	299	312	1884	1915	1946
71	1908	1940	1972	16578	16659	16741	32758	32852	32947	9182	9242	9301	338	351	364	1977	2008	2039
72	1834	1865	1896	16726	16806	16887	31522	31615	31709	9151	9211	9271	394	408	422	2045	2077	2109
73	1607	1636	1665	14866	14943	15020	29284	29374	29465	8550	8608	8666	454	469	484	2034	2066	2097
74	1511	1539	1567	14245	14320	14395	28572	28662	28751	8619	8677	8735	518	534	550	2166	2197	2229
75	1374	1401	1428	13664	13737	13810	27175	27262	27349	8186	8243	8300	579	595	612	2197	2229	2260
76	1239	1264	1290	12476	12546	12616	25345	25429	25513	7689	7745	7801	630	647	665	2185	2216	2247
77	1167	1191	1216	11190	11257	11324	23319	23400	23482	7361	7415	7469	671	689	707	2221	2251	2281
78	1002	1024	1047	9888	9951	10014	21019	21096	21172	6413	6464	6515	694	712	730	2125	2154	2183
79	891	911	932	8673	8732	8792	19004	19076	19149	5628	5676	5725	702	720	738	2125	2153	2181
80	791	811	830	7662	7717	7773	16837	16906	16975	5335	5382	5428	710	728	747	2104	2131	2158
81	682	700	718	6472	6523	6574	14227	14291	14355	4519	4562	4605	721	740	758	1929	1954	1980
82	529	545	561	5452	5499	5546	12198	12257	12317	3880	3921	3961	727	745	764	1856	1880	1904
83	473	488	502	4674	4718	4762	10391	10447	10503	3808	3847	3885	730	749	767	1774	1798	1821
84	379	392	406	3913	3954	3994	8260	8312	8363	3328	3364	3400	727	745	764	1505	1527	1548
85	290	302	313	2813	2848	2883	6572	6618	6664	2535	2567	2599	694	712	730	1219	1239	1259
86	241	252	262	2543	2576	2609	5633	5676	5719	2299	2330	2360	650	667	684	1140	1159	1178

Source: IHS HealthEcon (2006).

Table 43: Populated matrices starting for women from "Fair" to other health states – UK

	Very Good			Good			Fair			Bad			Residential care			Death		
Women	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	2029	2073	2117	19540	19653	19766	36083	36215	36346	10537	10618	10699	127	138	149	1105	1146	1187
66	2145	2184	2222	20690	20789	20889	38117	38233	38349	11179	11251	11324	150	161	171	1206	1243	1279
67	2088	2123	2157	20639	20728	20818	38741	38845	38950	11369	11434	11499	178	188	198	1291	1324	1357
68	2096	2131	2165	20605	20695	20785	40577	40683	40789	11970	12037	12104	234	245	256	1469	1503	1536
69	2137	2171	2205	21020	21111	21202	42513	42621	42728	12788	12857	12926	301	313	325	1686	1721	1756
70	2095	2128	2162	21432	21523	21614	42935	43043	43151	13145	13215	13285	379	393	407	1837	1873	1909
71	1925	1958	1991	20289	20379	20468	42695	42802	42910	13467	13537	13607	471	487	502	1924	1961	1997
72	1975	2008	2041	20378	20467	20557	42964	43072	43180	14207	14279	14350	587	605	622	2099	2137	2175
73	1821	1852	1884	19679	19766	19854	41958	42065	42172	14093	14164	14236	721	740	759	2110	2149	2187
74	1733	1764	1795	18815	18901	18988	42116	42223	42330	14247	14319	14391	878	898	919	2215	2254	2293
75	1725	1755	1786	18922	19008	19094	42340	42447	42554	14751	14824	14897	1050	1073	1095	2430	2470	2510
76	1636	1665	1694	18124	18208	18292	40101	40205	40310	14231	14304	14376	1222	1247	1271	2531	2571	2611
77	1462	1489	1517	16479	16560	16640	37059	37160	37262	13527	13597	13667	1381	1407	1433	2482	2522	2561
78	1382	1408	1434	14742	14819	14895	34178	34276	34374	12563	12631	12699	1526	1553	1580	2510	2549	2587
79	1228	1252	1276	13685	13757	13830	31068	31162	31255	11295	11360	11426	1647	1675	1703	2502	2540	2578
80	1034	1057	1080	11713	11781	11849	28163	28252	28341	10484	10546	10609	1769	1798	1827	2416	2452	2489
81	975	996	1018	10746	10812	10878	26679	26765	26851	9793	9854	9915	1915	1945	1975	2480	2517	2553
82	884	905	925	9919	9983	10046	25549	25633	25716	9166	9225	9285	2057	2089	2120	2610	2646	2682
83	797	817	836	9456	9518	9579	23686	23767	23849	9411	9469	9527	2195	2227	2260	2629	2665	2701
84	681	699	717	7994	8051	8108	20364	20440	20517	8554	8609	8665	2316	2349	2382	2430	2464	2499
85	567	583	600	6801	6854	6907	17563	17635	17707	7552	7605	7657	2373	2406	2439	2281	2314	2347
86	449	464	479	5582	5631	5680	15176	15244	15311	6950	7000	7050	2359	2392	2425	2031	2063	2094

Source: IHS HealthEcon (2006).

Table 44: Calculated number of transitions for men starting from "Bad" to other health states – UK

	Very Good			Good			Fair			Bad			Residential care			Death		
Men	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	266	282	297	2294	2338	2382	9742	9821	9899	17719	17810	17900	198	211	224	2737	2782	2827
66	245	258	271	2151	2187	2224	8964	9030	9097	17018	17095	17172	223	235	247	2737	2776	2814
67	235	247	258	2050	2082	2115	8870	8929	8988	16930	16998	17067	250	262	273	2849	2883	2918
68	211	222	233	1879	1910	1941	7958	8015	8072	16057	16124	16191	306	318	330	2998	3032	3067
69	198	208	219	1815	1846	1876	7643	7699	7755	16294	16361	16428	362	376	389	3163	3198	3233
70	190	201	211	1775	1806	1836	7635	7692	7748	16943	17011	17078	428	442	456	3422	3458	3493
71	189	199	210	1781	1811	1842	7866	7923	7980	17650	17718	17787	503	518	534	3826	3862	3898
72	185	195	205	1821	1851	1881	7638	7695	7752	17772	17841	17910	586	603	620	4032	4069	4105
73	172	182	191	1703	1733	1762	7414	7470	7526	17314	17383	17451	674	692	710	4198	4235	4271
74	155	165	174	1571	1600	1628	6950	7005	7059	16826	16894	16961	766	785	803	4342	4379	4416
75	145	154	164	1543	1571	1599	6737	6791	6844	16299	16365	16432	859	879	899	4526	4563	4600
76	128	136	145	1369	1395	1422	6082	6133	6184	14835	14899	14963	935	956	976	4387	4424	4460
77	115	123	131	1167	1192	1216	5294	5342	5391	13446	13507	13568	989	1010	1030	4243	4279	4314
78	101	109	116	1057	1080	1103	4875	4922	4968	11993	12051	12109	1029	1051	1072	4188	4223	4257
79	82	89	96	846	867	888	4005	4047	4089	9564	9617	9671	1044	1066	1087	3819	3851	3883
80	62	68	74	636	655	673	3007	3044	3081	7682	7731	7779	1044	1066	1087	3225	3255	3285
81	55	60	66	550	567	583	2600	2635	2670	6709	6755	6801	1061	1082	1103	3088	3117	3146
82	41	45	50	446	461	476	2136	2168	2200	5528	5570	5612	1064	1086	1107	2875	2902	2929
83	32	37	41	342	356	369	1632	1661	1690	4937	4976	5016	1043	1064	1085	2553	2579	2605
84	31	36	40	345	359	372	1553	1582	1611	5218	5258	5297	1028	1049	1071	2651	2677	2703
85	31	35	39	315	329	342	1565	1593	1622	4997	5035	5074	987	1008	1029	2705	2731	2756
86	24	27	31	264	276	288	1233	1259	1285	4204	4239	4274	918	938	959	2372	2396	2420

Source: IHS HealthEcon (2006).

Table 45: Calculated number of transitions for women starting from "Bad" to other health states – UK

	Very Good			Good			Fair			Bad			Residential care			Death		
Women	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	544	567	591	3979	4035	4091	11711	11799	11887	18252	18344	18437	190	203	216	1184	1225	1266
66	555	575	595	4038	4087	4136	11803	11880	11957	18426	18507	18588	225	237	249	1237	1273	1309
67	537	555	573	3995	4039	4082	11866	11934	12003	18521	18593	18666	266	278	289	1314	1347	1380
68	531	549	566	3911	3954	3997	12127	12196	12264	19023	19097	19170	348	361	374	1467	1501	1534
69	533	550	568	3905	3948	3992	12364	12434	12504	19755	19830	19905	447	462	476	1643	1678	1712
70	526	544	561	4014	4058	4101	12594	12665	12736	20597	20673	20749	564	580	597	1844	1880	1916
71	495	512	529	3871	3915	3958	12695	12766	12837	21390	21467	21544	698	716	735	1963	1999	2036
72	524	542	559	3998	4042	4086	13085	13157	13229	23149	23229	23308	866	886	907	2207	2245	2283
73	531	548	566	4223	4268	4313	13929	14004	14078	25078	25159	25241	1064	1086	1109	2450	2489	2529
74	530	547	565	4201	4246	4291	14435	14510	14585	26093	26176	26259	1295	1319	1344	2657	2698	2738
75	523	540	557	4177	4222	4267	14301	14376	14452	26688	26772	26856	1548	1574	1601	2904	2945	2987
76	519	536	553	4164	4209	4253	14027	14102	14177	26658	26742	26826	1803	1832	1860	3152	3194	3236
77	474	491	507	3856	3899	3942	13140	13213	13286	25704	25786	25868	2033	2063	2093	3151	3193	3235
78	456	471	487	3504	3545	3586	12313	12384	12455	24389	24469	24549	2246	2278	2309	3294	3336	3377
79	411	425	439	3270	3309	3348	11159	11227	11294	21778	21855	21931	2441	2474	2507	3282	3323	3363
80	325	338	351	2609	2645	2680	9361	9423	9485	18670	18742	18813	2614	2648	2682	2931	2970	3009
81	297	309	321	2310	2343	2377	8515	8575	8634	16764	16832	16901	2840	2875	2911	2917	2954	2992
82	250	261	272	1973	2004	2035	7510	7566	7621	14456	14521	14586	3064	3100	3137	2845	2881	2918
83	195	205	215	1637	1665	1693	6079	6131	6182	13093	13154	13216	3230	3268	3305	2557	2592	2628
84	189	199	209	1572	1600	1628	5935	5986	6037	13616	13677	13738	3384	3422	3461	2734	2770	2806
85	181	190	200	1525	1552	1580	5804	5854	5905	13642	13703	13764	3461	3500	3539	2931	2967	3003
86	152	161	170	1325	1352	1378	5288	5336	5385	13275	13334	13393	3411	3450	3488	2768	2803	2839

Source: IHS HealthEcon (2006).

Table 46: Calculated number of transitions starting from "Residential care" to other health states – UK

	Residential care			Death		
Men	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	964	984	1004	267	285	302
66	1020	1038	1056	322	337	353
67	1095	1112	1128	321	335	349
68	1269	1286	1304	272	285	298
69	1283	1302	1320	493	509	525
70	1272	1290	1309	611	628	645
71	1463	1483	1502	564	581	598
72	1489	1509	1530	856	875	895
73	1461	1481	1502	1068	1089	1110
74	1480	1501	1522	1226	1248	1270
75	1531	1553	1575	1369	1392	1415
76	1445	1467	1489	1655	1680	1704
77	1419	1441	1463	1734	1758	1782
78	1375	1397	1419	1877	1901	1926
79	1451	1473	1495	1868	1892	1916
80	1365	1387	1409	2190	2214	2239
81	1312	1334	1356	2309	2333	2358
82	1444	1467	1490	2302	2326	2350
83	1648	1672	1696	2364	2388	2412
84	1795	1820	1844	2443	2467	2491
85	1944	1969	1994	2360	2384	2408
86	1980	2005	2029	2366	2389	2412

	Residential care			Death		
Women	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	1257	1279	1300	143	159	174
66	1262	1281	1300	226	242	258
67	1315	1332	1350	224	238	252
68	1496	1515	1534	211	225	239
69	1835	1855	1876	220	234	248
70	2155	2177	2200	356	373	390
71	2375	2399	2423	577	597	617
72	2632	2658	2684	737	759	782
73	2698	2725	2752	1123	1149	1174
74	2716	2744	2771	1453	1481	1509
75	2957	2986	3015	1620	1649	1678
76	3502	3533	3565	1719	1749	1779
77	3880	3913	3947	2164	2197	2229
78	4368	4403	4438	2410	2444	2477
79	4911	4948	4985	2686	2720	2754
80	5304	5343	5381	3285	3321	3357
81	5866	5907	5947	3690	3727	3765
82	6770	6813	6856	4042	4080	4117
83	7546	7591	7636	4697	4736	4775
84	8301	8347	8394	5162	5202	5242
85	9078	9127	9175	5442	5482	5522
86	9334	9382	9431	6011	6052	6092

Source: IHS HealthEcon (2006).

5.9 Calculated number of transitions: Belgium

Table 47: Calculated number of transitions for men starting from "Very good" to other health states – BEL

	Very Good			Good			Fair			Bad			Residential care			Death		
Men	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	2538	2566	2595	2365	2395	2425	267	279	290	31	35	39	1	2	3	53	58	63
66	2191	2218	2246	2149	2177	2206	258	270	281	31	35	39	1	2	3	59	64	70
67	1909	1934	1959	1888	1915	1942	241	252	263	31	36	40	1	3	4	65	71	77
68	1741	1765	1789	1820	1846	1872	243	255	266	31	35	40	2	3	4	69	75	81
69	1534	1557	1579	1592	1617	1642	214	225	235	29	33	37	2	3	5	65	71	77
70	1441	1463	1485	1529	1553	1577	210	220	231	29	34	38	2	4	5	68	74	80
71	1343	1364	1385	1419	1443	1466	200	211	221	28	32	36	3	4	6	67	73	79
72	1266	1286	1307	1365	1388	1411	194	204	215	28	32	37	3	5	6	69	75	81
73	1220	1240	1260	1296	1318	1340	184	194	205	28	32	36	4	5	7	71	77	83
74	1219	1238	1258	1289	1311	1333	195	205	216	28	32	37	4	6	8	79	86	92
75	1169	1188	1207	1250	1272	1294	190	201	211	27	31	35	5	6	8	86	92	98
76	1038	1057	1075	1177	1199	1220	182	192	202	26	30	34	5	7	9	92	98	104
77	835	851	867	929	948	968	157	166	176	20	24	28	5	7	9	83	89	94
78	664	678	693	776	793	811	134	142	151	16	20	23	6	8	10	77	82	87
79	482	495	507	601	616	632	103	110	118	14	17	20	6	8	10	64	69	74
80	371	382	393	435	448	461	80	87	94	11	14	17	6	8	10	51	55	59
81	344	355	365	402	415	427	72	79	85	10	13	16	7	9	11	46	50	54
82	327	337	347	417	430	442	66	73	79	10	13	16	8	10	12	46	51	55
83	286	295	305	379	391	403	63	70	76	10	13	16	9	11	13	45	49	53
84	247	256	265	324	335	346	56	62	67	9	11	14	9	12	14	41	45	49
85	210	218	226	300	311	322	51	57	62	7	9	11	9	12	15	39	43	47
86	148	155	162	232	241	251	38	43	48	6	8	10	10	12	15	33	36	40

Source: IHS HealthEcon (2006).

Table 48: Calculated number of transitions for women starting from “Very good” to other health states – BEL

	Very Good			Good			Fair			Bad			Residential care			Death		
Women	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	2564	2593	2621	2199	2229	2258	264	276	287	32	36	41	1	3	4	16	21	26
66	2302	2330	2357	2095	2124	2152	259	270	281	34	38	42	2	3	4	20	25	30
67	1954	1979	2004	1764	1790	1816	220	231	241	29	33	37	2	3	5	20	25	31
68	1738	1762	1786	1610	1635	1660	205	215	225	29	32	36	3	4	5	20	26	31
69	1478	1501	1523	1506	1530	1554	195	205	215	27	31	35	3	5	6	21	26	31
70	1210	1231	1252	1245	1267	1289	163	173	182	23	27	30	4	6	7	18	23	28
71	1176	1196	1216	1127	1148	1169	153	162	171	21	25	28	5	7	8	18	23	28
72	1265	1285	1306	1282	1304	1326	179	188	198	26	30	33	6	8	10	25	30	35
73	1261	1281	1301	1211	1233	1255	174	184	194	24	28	32	7	9	11	26	31	37
74	1334	1354	1375	1260	1283	1305	193	203	213	28	31	35	8	11	13	33	39	45
75	1317	1338	1358	1272	1295	1317	203	213	223	27	31	35	10	12	15	39	45	51
76	1166	1185	1204	1168	1190	1211	185	195	205	25	28	32	11	14	16	41	47	53
77	1026	1043	1061	962	982	1002	164	173	182	22	26	29	12	15	18	42	48	53
78	952	969	986	959	979	999	161	170	180	23	26	30	13	16	19	47	53	58
79	781	796	812	815	833	851	131	139	148	19	23	26	15	18	21	43	48	53
80	697	712	726	741	759	776	119	127	136	19	23	26	17	20	23	42	47	52
81	633	647	661	687	704	720	115	123	131	19	22	25	20	23	27	40	45	50
82	583	596	609	643	659	675	107	115	123	17	20	24	23	27	31	38	43	48
83	541	553	566	641	657	673	111	119	127	17	21	24	28	32	36	42	47	52
84	458	470	482	533	547	562	102	109	117	15	18	21	32	36	41	39	44	49
85	402	412	423	450	464	478	90	97	104	12	15	18	35	39	44	36	41	45
86	352	362	372	414	427	440	81	88	95	11	14	16	36	41	46	34	39	43

Source: IHS HealthEcon (2006).

Table 49 Calculated number of transitions for men starting from "Good" to other health states – BEL

	Very Good			Good			Fair			Bad			Residential care			Death		
Men	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	2419	2450	2481	18893	18951	19009	5046	5090	5134	267	280	292	4	6	7	261	270	280
66	2247	2277	2307	18002	18058	18115	5169	5213	5256	259	271	283	4	6	8	296	307	317
67	2186	2214	2243	16883	16938	16994	5096	5140	5184	256	267	279	5	7	9	323	335	347
68	1925	1953	1980	15761	15815	15870	5012	5056	5099	247	259	270	6	8	10	334	346	358
69	1808	1834	1860	14650	14703	14756	4703	4745	4787	246	257	269	6	9	11	341	353	365
70	1642	1667	1692	13667	13718	13770	4514	4555	4597	250	262	273	7	10	12	351	362	374
71	1513	1536	1560	12631	12681	12731	4335	4375	4416	244	255	266	9	11	14	351	363	375
72	1373	1396	1418	11625	11674	11722	4011	4051	4090	235	246	257	10	13	15	347	359	371
73	1298	1320	1341	10832	10878	10925	3761	3800	3839	229	240	251	12	14	17	351	362	374
74	1184	1204	1225	9852	9897	9942	3641	3678	3716	216	226	237	13	16	19	362	374	385
75	1025	1044	1064	8675	8718	8760	3252	3288	3324	188	199	209	15	18	21	359	370	382
76	841	859	877	7643	7683	7724	2945	2979	3013	174	183	193	16	19	22	367	377	388
77	720	737	753	6457	6494	6532	2731	2763	2795	152	162	171	17	20	23	360	370	380
78	539	553	567	5090	5124	5158	2209	2238	2267	118	126	135	17	21	24	317	327	336
79	412	425	438	4166	4197	4228	1808	1834	1861	105	113	121	18	21	25	283	292	301
80	358	369	381	3420	3449	3477	1618	1643	1668	103	110	118	19	23	26	256	265	273
81	289	299	309	2768	2794	2819	1283	1306	1328	82	89	96	21	25	28	205	213	221
82	244	254	263	2571	2596	2620	1078	1100	1121	76	83	89	24	27	31	189	196	204
83	230	239	248	2516	2539	2563	1113	1135	1156	82	89	95	26	30	34	200	207	215
84	202	211	220	2222	2244	2267	1019	1039	1059	73	80	86	28	32	36	191	199	206
85	157	165	173	1907	1928	1948	876	894	913	56	62	68	29	33	37	175	182	189
86	126	133	140	1672	1691	1711	759	777	794	54	59	65	29	33	37	166	173	180

Source: IHS HealthEcon (2006).

Table 50: Calculated number of transitions for women starting from "Good" to other health states – BEL

	Very Good			Good			Fair			Bad			Residential care			Death		
Women	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	2118	2146	2175	17341	17400	17459	5523	5568	5614	341	355	368	5	7	9	110	121	131
66	1954	1982	2011	16726	16784	16842	5569	5615	5661	331	343	356	6	8	10	129	141	152
67	1917	1944	1972	16134	16192	16249	5497	5543	5588	297	309	321	7	9	11	141	154	166
68	1793	1819	1846	15582	15639	15695	5472	5517	5563	319	331	343	8	11	13	157	170	183
69	1551	1576	1601	14891	14947	15003	5336	5381	5426	314	326	339	10	12	15	162	175	188
70	1479	1503	1527	14305	14360	14415	5236	5281	5325	318	330	342	12	15	17	174	187	200
71	1519	1543	1567	13538	13592	13646	5103	5147	5191	311	323	335	14	17	20	186	199	212
72	1365	1388	1411	12774	12826	12879	4929	4973	5016	308	321	333	17	21	24	200	213	226
73	1345	1367	1389	12068	12120	12171	4866	4909	4952	296	308	320	21	25	28	217	230	244
74	1249	1270	1291	10982	11032	11082	4688	4730	4772	293	305	317	25	29	33	241	254	267
75	1061	1081	1101	9637	9684	9732	4312	4353	4393	259	270	282	29	33	38	246	259	272
76	895	913	931	8509	8554	8599	3826	3864	3903	229	240	251	33	37	42	253	265	278
77	831	848	866	7384	7427	7470	3557	3593	3630	218	229	239	37	41	46	272	284	296
78	624	640	655	6030	6069	6108	2903	2936	2969	187	197	207	40	44	49	252	263	274
79	537	551	565	5358	5394	5431	2480	2511	2543	169	178	188	43	48	53	239	250	260
80	486	500	513	4999	5034	5069	2348	2379	2409	176	185	194	50	55	60	244	255	265
81	427	440	453	4540	4574	4607	2243	2272	2302	172	181	190	59	65	70	237	248	259
82	384	396	408	4146	4178	4210	2051	2079	2108	155	164	173	69	76	82	222	233	243
83	339	350	362	3914	3945	3976	2000	2028	2056	149	158	167	81	88	95	227	237	248
84	307	318	329	3500	3530	3560	1979	2006	2033	141	149	158	93	100	107	232	242	253
85	253	263	273	2830	2858	2885	1691	1716	1741	114	122	130	101	109	116	209	219	229
86	194	203	212	2308	2333	2358	1365	1388	1411	92	99	107	106	113	121	180	189	198

Source: IHS HealthEcon (2006).

Table 51: Calculated number of transitions for men starting from "Fair" to other health states – BEL

	Very Good			Good			Fair			Bad			Residential care			Death		
Men	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	156	165	175	3936	3975	4015	8880	8927	8974	1369	1393	1416	22	25	29	355	365	376
66	124	133	142	3939	3979	4019	9219	9267	9315	1407	1431	1455	24	27	31	383	394	406
67	105	113	121	4000	4040	4080	9487	9535	9584	1520	1544	1568	26	30	34	416	428	441
68	95	102	110	3829	3868	3907	9546	9594	9642	1513	1538	1562	30	34	38	445	458	471
69	96	104	111	3833	3872	3911	9615	9663	9711	1624	1649	1674	34	39	43	494	507	520
70	89	96	103	3599	3637	3675	9237	9284	9331	1657	1682	1707	39	44	49	511	524	537
71	82	89	96	3350	3387	3424	8912	8958	9004	1632	1657	1682	45	50	55	520	533	546
72	78	84	91	3201	3237	3273	8580	8626	8671	1651	1676	1701	52	57	63	544	558	571
73	73	79	85	2958	2992	3026	7954	7998	8042	1596	1621	1645	60	66	71	547	560	573
74	64	70	75	2577	2609	2642	7362	7404	7447	1448	1472	1496	67	73	79	546	559	572
75	59	64	70	2401	2432	2464	6945	6986	7027	1346	1370	1393	75	81	87	577	590	603
76	48	53	58	2105	2134	2164	6240	6279	6318	1238	1260	1283	80	86	93	589	602	614
77	39	44	48	1717	1744	1771	5626	5663	5699	1071	1092	1113	83	90	96	576	588	600
78	33	37	42	1546	1572	1597	5221	5255	5290	965	985	1005	86	92	99	593	604	616
79	27	31	35	1352	1376	1400	4542	4574	4606	920	939	958	89	96	103	565	576	587
80	23	26	29	1057	1078	1100	3848	3878	3908	850	867	885	95	102	109	488	498	509
81	21	24	27	956	976	996	3392	3420	3448	761	778	795	105	112	119	435	445	456
82	17	20	23	868	887	905	2803	2829	2855	699	715	731	118	126	133	396	406	415
83	12	14	17	658	675	691	2248	2272	2297	586	601	616	130	138	146	331	340	349
84	10	12	14	552	567	583	1954	1977	2000	504	518	532	140	148	156	303	312	321
85	8	10	12	484	499	513	1708	1730	1751	394	407	420	145	153	162	281	289	298
86	6	7	9	395	408	421	1392	1411	1431	360	372	384	145	153	161	256	264	272

Source: IHS HealthEcon (2006).

Table 52: Calculated number of transitions for women starting from “Fair” to other health states – BEL

	Very Good			Good			Fair			Bad			Residential care			Death		
Women	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	212	223	233	5213	5258	5304	12901	12955	13010	2160	2188	2217	27	31	35	200	212	224
66	169	179	189	5276	5321	5367	13228	13283	13338	2250	2279	2308	31	35	39	211	224	237
67	143	152	161	5428	5473	5519	13528	13583	13639	2222	2251	2280	35	40	44	225	239	253
68	135	144	153	5294	5340	5385	13567	13622	13678	2413	2442	2472	42	47	52	254	269	283
69	118	127	136	5148	5192	5237	13446	13501	13556	2435	2465	2495	50	55	61	270	285	300
70	115	124	132	5022	5067	5111	13352	13407	13462	2503	2534	2564	60	66	71	298	313	328
71	122	130	138	4831	4874	4917	13169	13224	13278	2488	2519	2549	72	78	84	326	342	357
72	111	119	127	4647	4690	4732	12988	13042	13096	2544	2574	2605	87	93	100	364	380	395
73	111	118	126	4398	4440	4481	12804	12858	12912	2452	2483	2514	104	111	119	399	415	431
74	106	113	121	4119	4160	4200	12725	12778	12831	2524	2555	2585	123	131	139	461	477	493
75	96	103	110	3845	3885	3924	12452	12504	12556	2392	2423	2453	141	149	158	508	523	539
76	87	94	101	3663	3701	3739	11880	11931	11981	2293	2323	2353	158	167	176	568	583	599
77	80	86	92	3106	3141	3177	10786	10834	10882	2143	2171	2200	174	183	193	599	614	629
78	65	71	77	2761	2795	2829	9544	9589	9633	2002	2029	2056	188	198	208	608	623	637
79	55	60	65	2405	2435	2466	7975	8017	8058	1781	1807	1833	208	219	229	569	584	598
80	43	48	53	1947	1975	2003	6517	6556	6595	1595	1619	1643	238	249	260	503	517	530
81	34	39	43	1606	1632	1658	5661	5698	5735	1432	1455	1478	279	291	303	451	464	478
82	31	35	39	1492	1517	1542	5286	5322	5358	1331	1354	1376	330	343	356	440	453	467
83	26	30	34	1356	1380	1404	5003	5038	5073	1260	1282	1304	384	398	412	444	458	471
84	23	27	30	1185	1207	1230	4849	4883	4917	1176	1197	1218	432	447	462	451	464	478
85	23	26	29	1113	1135	1157	4788	4822	4855	1112	1132	1153	471	486	502	472	486	499
86	19	22	26	1022	1042	1063	4351	4382	4414	1020	1040	1059	494	510	525	463	476	489

Source: IHS HealthEcon (2006).

Table 53: Calculated number of transitions for men starting from "Bad" to other health states – BEL

	Very Good			Good			Fair			Bad			Residential care			Death		
Men	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	8	10	13	108	116	123	808	827	845	1402	1423	1444	33	37	42	257	267	276
66	9	12	14	123	131	139	909	929	949	1535	1557	1580	36	41	45	286	297	307
67	11	13	16	131	140	148	937	957	977	1611	1634	1656	40	45	49	307	318	329
68	11	14	17	140	148	157	1027	1048	1069	1723	1746	1769	46	51	56	351	362	374
69	11	14	17	137	146	154	1000	1021	1042	1767	1790	1814	52	57	62	372	383	395
70	12	14	17	141	150	158	1037	1058	1080	1930	1954	1978	59	64	70	412	424	436
71	13	16	18	149	158	167	1120	1142	1165	2105	2130	2155	67	73	79	464	476	489
72	13	16	19	152	161	170	1126	1148	1170	2194	2220	2245	77	84	90	498	511	524
73	14	17	20	154	163	172	1128	1151	1173	2267	2292	2318	88	95	102	534	547	560
74	14	17	20	148	157	166	1130	1152	1175	2195	2220	2245	100	107	114	567	580	593
75	12	15	18	133	141	150	1012	1033	1054	1913	1938	1962	111	118	126	559	571	584
76	9	12	14	107	115	123	829	849	868	1590	1612	1635	118	126	133	514	526	538
77	8	10	12	85	92	99	721	739	757	1309	1330	1350	124	131	139	476	487	498
78	6	8	9	67	73	79	574	590	606	1000	1019	1037	128	136	144	412	422	432
79	4	6	7	50	55	61	424	438	452	804	821	838	131	139	147	333	342	351
80	4	5	7	42	47	53	389	403	416	803	819	835	137	146	154	313	322	331
81	4	6	7	46	51	57	406	420	434	847	864	880	153	161	170	329	338	347
82	4	5	7	46	51	56	357	370	383	821	837	853	170	179	188	315	324	333
83	3	5	6	41	46	51	335	348	361	794	810	825	187	196	205	301	310	319
84	3	5	6	38	42	47	309	322	334	713	728	743	202	212	221	285	294	303
85	2	4	5	31	36	40	256	267	279	524	537	551	214	223	233	246	254	262
86	1	2	3	17	21	24	143	152	160	326	337	348	210	219	229	153	160	166

Source: IHS HealthEcon (2006).

Table 54: Calculated number of transitions for women starting from "Bad" to other health states – BEL

	Very Good			Good			Fair			Bad			Residential care			Death		
Women	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	23	27	31	236	248	259	1581	1606	1631	2377	2404	2431	42	46	51	137	148	159
66	24	28	32	264	276	288	1778	1805	1832	2790	2818	2847	46	51	56	159	171	184
67	29	33	37	304	316	329	2017	2046	2074	3136	3166	3195	54	60	65	196	209	223
68	28	32	37	299	311	324	2009	2038	2066	3343	3373	3403	63	69	75	212	226	240
69	29	33	38	335	349	362	2257	2287	2317	3777	3809	3841	75	82	88	254	269	283
70	31	36	40	351	364	378	2359	2390	2421	4032	4065	4098	90	97	103	289	304	319
71	36	41	46	363	376	390	2461	2492	2524	4186	4220	4253	108	115	123	331	347	362
72	34	39	43	352	366	379	2411	2443	2474	4201	4235	4268	129	137	146	360	376	391
73	37	42	46	352	366	379	2465	2496	2528	4142	4176	4209	156	165	174	405	421	436
74	34	38	42	307	320	333	2249	2279	2309	3867	3899	3932	183	192	202	420	435	451
75	32	36	40	291	304	316	2200	2229	2259	3622	3654	3686	212	222	232	457	473	488
76	27	31	35	255	267	279	1904	1931	1959	3114	3144	3174	238	249	260	456	470	485
77	24	27	31	202	213	224	1599	1625	1650	2666	2695	2723	259	271	282	438	452	466
78	19	22	26	175	185	195	1365	1389	1412	2384	2410	2437	279	291	303	425	438	451
79	18	21	24	166	175	184	1217	1240	1263	2248	2274	2299	308	320	332	421	434	447
80	16	19	22	151	160	169	1107	1129	1151	2233	2258	2283	347	360	373	413	426	439
81	16	19	22	149	158	168	1129	1152	1174	2321	2346	2371	405	419	433	426	440	453
82	17	19	22	152	161	170	1127	1149	1171	2264	2289	2314	483	498	513	434	447	460
83	14	17	19	135	143	152	1019	1040	1062	2013	2037	2061	564	580	596	408	421	434
84	11	14	16	108	116	124	899	918	938	1686	1708	1731	639	656	673	369	381	394
85	9	11	13	82	89	96	713	730	748	1273	1294	1314	702	719	736	308	320	331
86	6	8	10	57	63	69	490	505	520	876	894	912	737	754	771	225	234	244

Source: IHS HealthEcon (2006).

Table 55: Calculated number of transitions starting from "Residential care" to other health states – BEL

Men	Residential care			Death		
	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	235	242	249	36	41	45
66	261	269	277	36	40	45
67	286	294	302	37	42	47
68	308	317	325	44	49	54
69	330	338	347	57	62	67
70	355	364	373	68	74	80
71	381	391	400	80	86	93
72	409	419	429	97	103	110
73	437	447	457	118	125	132
74	471	482	493	139	147	154
75	501	512	523	165	172	180
76	521	532	544	191	199	207
77	527	539	550	219	227	235
78	523	534	546	240	248	256
79	495	507	518	268	277	285
80	476	487	498	294	303	311
81	479	490	502	324	333	342
82	504	515	527	374	383	393
83	536	549	561	443	453	463
84	580	593	605	505	515	525
85	609	622	635	563	573	583
86	601	614	627	620	630	639

Women	Residential care			Death		
	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	257	264	272	15	19	24
66	312	320	328	13	18	22
67	375	384	393	12	17	21
68	451	460	470	14	18	23
69	535	546	557	16	21	26
70	642	653	665	20	25	30
71	767	780	792	23	29	34
72	916	930	943	31	37	43
73	1090	1105	1120	41	47	53
74	1307	1323	1340	50	56	63
75	1531	1549	1566	66	73	80
76	1744	1763	1782	84	92	100
77	1938	1958	1977	108	116	124
78	2094	2114	2135	141	149	158
79	2193	2214	2235	201	211	220
80	2308	2330	2351	282	293	304
81	2485	2508	2530	396	408	421
82	2734	2758	2782	539	553	566
83	3035	3060	3084	716	731	746
84	3361	3387	3413	913	929	945
85	3619	3646	3673	1110	1126	1142
86	3740	3767	3794	1293	1309	1324

Source: IHS HealthEcon (2006).

5.10 Calculated number of transitions: Germany

Table 56: Calculated number of transitions for men starting from "Very good" to other health states – GER

	Very Good			Good			Fair			Bad			Residential care			Death		
Men	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	3250	3290	3330	4017	4061	4106	911	935	958	212	224	236	11	14	17	28	32	36
66	2917	2956	2996	3692	3734	3776	897	920	943	203	215	226	13	17	20	27	32	36
67	2754	2791	2828	2480	2516	2551	645	665	684	141	151	161	16	20	23	22	27	31
68	3088	3126	3164	2664	2701	2739	745	766	788	165	176	186	21	25	29	27	32	36
69	3010	3047	3084	2757	2795	2832	781	803	825	177	188	199	26	31	35	30	35	40
70	2692	2727	2761	2409	2444	2479	690	711	732	158	168	179	32	36	41	28	32	37
71	2587	2621	2654	2388	2423	2458	686	707	728	160	171	181	37	43	48	29	34	39
72	2350	2382	2413	2232	2265	2299	668	688	709	158	169	179	44	50	55	30	35	39
73	1938	1968	1997	2093	2125	2156	600	619	639	150	160	171	51	57	63	29	34	38
74	1548	1575	1601	1601	1629	1657	488	505	523	122	132	141	59	66	72	24	28	32
75	1299	1324	1349	1511	1538	1566	469	487	504	125	134	144	69	76	83	25	29	34
76	1006	1027	1048	1112	1135	1159	341	356	371	95	103	111	74	82	89	18	22	26
77	824	844	864	1057	1080	1102	319	333	348	93	101	109	79	86	94	18	22	26
78	622	639	656	754	773	792	236	249	261	71	78	85	78	86	94	14	18	21
79	524	540	556	688	706	724	219	231	243	67	74	81	78	86	94	13	17	20
80	389	402	414	454	469	484	144	154	165	44	50	55	73	81	89	9	12	15
81	404	417	430	499	515	530	161	171	182	46	53	59	76	84	92	11	14	17
82	399	411	424	465	481	497	179	190	201	57	64	70	84	93	101	16	19	23
83	465	478	491	479	496	512	215	227	238	66	73	80	96	105	114	20	23	27
84	504	518	532	626	643	661	236	248	261	76	84	92	106	115	125	24	28	32
85	491	504	517	600	617	634	224	236	248	64	72	79	86	95	104	21	25	29
86	534	548	562	651	669	687	248	261	274	83	91	99	86	95	104	27	32	36

Source: IHS HealthEcon (2006).

Table 57: Calculated number of transitions for women starting from "Very good" to other health states – GER

	Very Good			Good			Fair			Bad			Residential care			Death		
Women	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	3338	3378	3419	4241	4288	4334	1224	1250	1277	318	333	347	18	22	25	23	29	35
66	3053	3092	3130	3565	3608	3650	1111	1137	1163	305	319	333	21	25	29	23	29	36
67	3202	3241	3281	3515	3557	3600	1208	1235	1262	343	357	372	27	31	36	28	35	42
68	3389	3429	3469	3838	3882	3926	1342	1370	1399	397	412	428	35	40	45	34	41	49
69	3514	3553	3593	3871	3916	3960	1363	1392	1421	415	431	448	46	52	57	36	44	52
70	3747	3787	3827	4136	4182	4228	1509	1540	1570	475	492	509	59	66	73	44	52	61
71	3881	3922	3962	4511	4558	4606	1633	1665	1697	534	552	570	77	84	92	52	61	70
72	3448	3487	3526	4268	4314	4360	1608	1640	1671	527	545	563	99	108	116	54	63	73
73	2910	2946	2982	3566	3609	3651	1404	1434	1463	463	480	498	126	135	145	50	59	68
74	2652	2686	2720	3307	3348	3390	1320	1349	1377	455	472	489	160	170	181	50	59	68
75	2242	2273	2305	2935	2973	3012	1203	1231	1258	438	455	472	198	210	221	49	57	66
76	2008	2038	2067	2543	2580	2616	1093	1120	1146	409	425	441	236	249	262	44	53	61
77	1873	1900	1928	2477	2513	2548	1033	1058	1084	410	426	442	268	281	295	43	51	60
78	1617	1642	1668	2101	2134	2167	908	932	956	371	386	401	293	307	321	36	44	53
79	1220	1243	1266	1866	1897	1927	790	812	835	320	334	348	312	326	341	30	38	46
80	710	727	744	998	1021	1044	430	447	464	177	187	198	325	339	354	16	22	28
81	584	600	616	965	987	1009	442	459	475	175	186	197	358	373	389	20	26	32
82	463	476	490	694	713	732	339	354	368	133	142	152	413	429	445	17	22	28
83	617	632	648	895	916	938	483	500	517	195	206	218	498	516	534	29	35	42
84	736	752	769	1011	1034	1057	575	593	611	227	240	252	584	603	623	33	40	48
85	787	804	821	1290	1315	1340	704	724	744	265	279	292	652	672	693	33	41	50
86	558	573	587	902	923	945	522	539	556	205	216	228	547	566	584	22	29	36

Source: IHS HealthEcon (2006).

Table 58: Calculated number of transitions for men starting from “Good” to other health states – GER

	Very Good			Good			Fair			Bad			Residential care			Death		
Men	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	5167	5218	5269	58861	59001	59141	39089	39222	39355	6394	6459	6524	31	36	41	1163	1188	1213
66	4195	4244	4293	48560	48691	48821	36779	36907	37035	5602	5662	5722	37	42	47	1204	1230	1257
67	4410	4458	4506	40003	40124	40246	32974	33096	33218	4878	4933	4989	45	51	57	1223	1250	1278
68	3932	3977	4023	34499	34614	34729	31114	31232	31350	4739	4793	4848	58	64	71	1234	1261	1289
69	3126	3167	3209	29391	29498	29606	27166	27277	27388	4280	4332	4384	72	80	87	1147	1174	1200
70	2843	2881	2920	26360	26462	26564	25111	25218	25325	4078	4129	4180	88	96	104	1138	1164	1191
71	2497	2533	2569	24063	24161	24258	23258	23361	23463	3894	3944	3994	104	112	121	1129	1156	1182
72	2181	2215	2249	21729	21822	21915	22068	22168	22267	3790	3839	3889	122	131	140	1133	1160	1187
73	1705	1736	1767	19451	19538	19625	19139	19233	19327	3507	3555	3603	141	151	161	1074	1100	1125
74	1639	1668	1697	18068	18152	18236	19209	19302	19395	3609	3657	3705	164	174	185	1129	1156	1182
75	1191	1217	1242	14998	15075	15152	16505	16592	16678	3324	3370	3415	187	199	210	1067	1092	1118
76	1067	1090	1114	12903	12975	13047	14273	14354	14435	3052	3096	3139	207	219	231	982	1007	1032
77	825	846	867	11406	11473	11539	12315	12391	12467	2752	2793	2835	218	230	243	895	919	943
78	754	773	792	9849	9911	9973	11189	11261	11333	2610	2650	2690	220	233	246	871	894	918
79	510	526	543	7474	7528	7583	8890	8954	9019	2179	2216	2252	217	229	242	738	760	781
80	431	445	459	5643	5690	5737	6803	6859	6915	1671	1703	1736	213	225	238	597	617	636
81	324	337	349	4576	4618	4661	5654	5705	5756	1343	1373	1402	219	232	245	530	548	566
82	294	306	317	3729	3769	3808	5264	5313	5362	1335	1364	1393	244	257	271	573	591	610
83	224	234	244	2631	2666	2701	4442	4487	4531	1112	1138	1165	279	294	309	523	540	557
84	153	162	170	2213	2244	2275	3232	3271	3311	864	888	912	311	326	342	426	442	457
85	171	180	188	2558	2591	2623	3882	3924	3966	974	1000	1026	329	345	361	515	532	549
86	164	172	181	2449	2481	2513	3804	3846	3888	1094	1120	1147	329	346	362	578	596	613

Source: IHS HealthEcon (2006).

Table 59: Calculated number of transitions for women starting from "Good" to other health states – GER

	Very Good			Good			Fair			Bad			Residential care			Death		
Women	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	4805	4854	4904	48210	48343	48476	34048	34173	34299	6042	6104	6165	50	56	63	409	431	454
66	5080	5130	5180	42313	42439	42564	30822	30943	31063	5059	5114	5170	59	66	73	412	435	459
67	5437	5488	5539	38404	38525	38646	29611	29728	29846	4269	4320	4370	75	82	90	435	459	484
68	4977	5026	5075	36114	36232	36350	28424	28540	28656	4296	4346	4397	98	107	115	454	479	504
69	4860	4908	4956	35167	35283	35399	28608	28725	28841	4561	4613	4665	129	138	148	504	530	557
70	4718	4765	4812	33865	33980	34094	28470	28586	28702	4687	4740	4793	167	178	189	543	570	598
71	4253	4297	4342	32592	32704	32816	27635	27750	27865	4791	4845	4898	216	228	240	580	608	636
72	3749	3792	3835	31152	31262	31372	28046	28160	28275	4976	5031	5085	276	289	303	636	665	693
73	3427	3467	3507	28298	28404	28509	26837	26949	27060	4842	4895	4949	350	365	380	657	686	714
74	2912	2949	2986	25186	25286	25387	24893	25001	25109	4810	4863	4916	443	460	477	674	703	731
75	2559	2593	2628	22762	22858	22954	22855	22959	23063	4626	4678	4730	550	569	588	648	677	705
76	2348	2380	2413	20238	20329	20421	21395	21496	21596	4466	4517	4568	661	681	702	619	648	676
77	1885	1914	1943	17227	17311	17395	17984	18077	18170	4040	4088	4136	752	774	796	550	577	604
78	1602	1628	1655	14670	14748	14826	16168	16256	16344	3796	3843	3889	824	847	870	499	525	552
79	1024	1046	1069	11387	11456	11524	12695	12773	12851	3048	3089	3131	864	888	911	392	417	441
80	890	910	929	9221	9283	9344	10647	10718	10789	2627	2666	2704	910	934	959	360	383	406
81	626	643	660	7389	7444	7500	8871	8935	9000	2090	2126	2161	990	1015	1041	322	344	365
82	624	640	656	6734	6787	6840	8730	8793	8856	2066	2102	2137	1151	1179	1206	360	382	404
83	571	586	601	6049	6100	6151	8738	8801	8864	2153	2189	2225	1392	1422	1452	413	436	458
84	506	520	534	5178	5226	5274	7962	8021	8081	1943	1978	2012	1636	1668	1700	370	392	414
85	388	401	413	4784	4829	4874	7144	7201	7257	1676	1709	1741	1814	1848	1881	280	301	322
86	389	401	414	4784	4829	4874	7708	7765	7823	1916	1950	1984	1910	1945	1979	290	312	334

Source: IHS HealthEcon (2006).

Table 60: Calculated number of transitions for men starting from “Fair” to other health states – GER

	Very Good			Good			Fair			Bad			Residential care			Death		
Men	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	1033	1061	1088	32897	33023	33149	119923	120103	120282	34628	34760	34891	153	163	173	2665	2698	2732
66	866	893	920	31110	31232	31355	119882	120058	120234	32409	32537	32664	175	186	197	2785	2820	2856
67	996	1024	1051	31412	31533	31653	120074	120249	120424	32214	32339	32464	216	227	239	2990	3028	3066
68	944	970	996	28193	28309	28424	116215	116386	116557	31760	31884	32007	273	286	300	3047	3085	3124
69	863	888	914	27144	27257	27369	113236	113404	113572	31780	31903	32027	340	355	369	3132	3171	3210
70	849	872	896	25431	25539	25647	106589	106752	106915	30263	30384	30506	413	429	445	3068	3107	3146
71	764	786	809	23337	23439	23542	97904	98061	98218	28420	28538	28656	490	507	524	2984	3023	3061
72	648	669	690	20243	20339	20435	88608	88758	88908	26295	26408	26522	571	590	608	2847	2885	2923
73	542	561	580	18948	19040	19131	79261	79404	79547	24872	24982	25091	665	684	704	2745	2782	2820
74	465	482	500	15531	15616	15700	69481	69616	69751	22202	22306	22411	768	789	810	2495	2532	2568
75	373	389	405	13901	13981	14060	63266	63395	63525	21409	21510	21612	876	899	921	2453	2489	2524
76	347	362	377	12227	12301	12375	55439	55562	55684	19815	19912	20009	969	993	1017	2275	2309	2344
77	267	280	293	10595	10663	10731	46591	46705	46819	17321	17412	17503	1028	1052	1077	2008	2041	2074
78	226	238	249	8346	8407	8469	38057	38162	38267	14608	14691	14775	1040	1064	1089	1723	1754	1785
79	163	174	184	6610	6665	6719	30945	31040	31135	12306	12383	12459	1021	1046	1071	1459	1488	1517
80	147	156	165	5259	5307	5355	24879	24964	25050	9924	9994	10063	1012	1037	1062	1245	1272	1299
81	114	121	129	4350	4394	4437	21158	21237	21315	8222	8287	8351	1047	1072	1098	1144	1170	1195
82	104	111	119	3531	3572	3612	19394	19468	19543	7987	8049	8111	1149	1176	1202	1204	1229	1253
83	100	107	114	2988	3026	3064	18992	19064	19137	7547	7608	7669	1301	1329	1358	1224	1248	1273
84	94	101	108	3378	3416	3454	18401	18473	18544	7772	7834	7895	1471	1501	1531	1317	1342	1367
85	82	88	94	2976	3011	3047	16430	16498	16566	6398	6456	6514	1571	1602	1633	1135	1159	1183
86	71	77	82	2571	2604	2638	14538	14603	14667	6471	6527	6582	1568	1599	1630	1155	1178	1202

Source: IHS HealthEcon (2006).

Table 61: Calculated number of transitions for women starting from "Fair" to other health states – GER

	Very Good			Good			Fair			Bad			Residential care			Death		
Women	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	1029	1056	1083	32942	33070	33197	135773	135962	136151	44125	44269	44413	238	251	263	1491	1528	1565
66	1042	1069	1096	32005	32129	32254	132913	133100	133287	42738	42879	43019	280	293	307	1620	1659	1698
67	1030	1057	1084	30444	30566	30687	129706	129890	130075	39733	39869	40004	352	367	382	1707	1749	1791
68	1005	1031	1057	29815	29934	30054	127506	127690	127873	40461	40598	40734	459	476	493	1807	1850	1893
69	997	1022	1047	28650	28767	28883	123879	124061	124244	40774	40911	41048	600	620	639	1893	1937	1980
70	968	992	1016	27162	27276	27390	120188	120370	120551	40614	40751	40888	780	801	823	1982	2027	2071
71	880	903	926	26096	26208	26319	115753	115932	116111	41069	41206	41343	1003	1028	1052	2102	2148	2193
72	759	781	802	23909	24016	24123	110876	111052	111229	39812	39947	40083	1274	1302	1330	2126	2172	2218
73	732	752	773	22629	22734	22838	109830	110005	110180	39974	40110	40247	1610	1641	1672	2265	2312	2360
74	688	708	728	21709	21811	21913	107738	107911	108085	41416	41553	41690	2033	2067	2102	2402	2450	2499
75	635	654	673	20286	20384	20482	101277	101448	101618	40524	40660	40795	2525	2564	2602	2355	2404	2453
76	585	603	620	17873	17966	18058	93245	93410	93575	38308	38440	38572	3024	3065	3106	2199	2248	2297
77	521	538	554	16455	16543	16631	83117	83274	83432	36163	36290	36417	3456	3500	3544	2034	2082	2129
78	419	434	448	13056	13135	13214	68893	69039	69184	31117	31235	31352	3770	3816	3861	1678	1723	1768
79	286	299	312	10659	10730	10801	56233	56366	56498	25771	25879	25987	3961	4008	4054	1366	1408	1450
80	248	259	271	8505	8568	8631	46165	46286	46407	21668	21767	21866	4182	4230	4277	1228	1267	1307
81	185	195	205	7204	7262	7319	40592	40705	40818	18231	18325	18418	4569	4619	4669	1172	1209	1247
82	199	209	218	6799	6854	6910	40272	40383	40493	17807	17900	17992	5321	5375	5429	1272	1310	1348
83	198	207	217	6406	6461	6516	41264	41374	41485	18661	18754	18848	6378	6437	6495	1436	1475	1515
84	197	206	215	6124	6178	6231	42052	42162	42272	18930	19024	19118	7473	7536	7599	1456	1497	1537
85	170	178	187	6319	6371	6423	42103	42211	42319	18274	18367	18461	8352	8418	8484	1261	1302	1343
86	155	163	171	5662	5712	5762	40255	40360	40464	18318	18409	18500	8737	8804	8871	1129	1170	1210

Source: IHS HealthEcon (2006).

Table 62: Calculated number of transitions for men starting from “Bad” to other health states – GER

	Very Good			Good			Fair			Bad			Residential care			Death		
Men	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	174	185	197	3901	3951	4000	26352	26466	26580	65784	65927	66070	232	244	257	4647	4684	4720
66	140	151	163	3584	3632	3680	26066	26179	26292	61735	61874	62012	266	279	292	4864	4902	4941
67	151	163	174	3404	3450	3497	25054	25166	25278	59214	59348	59483	323	337	351	5096	5137	5178
68	146	157	168	3109	3154	3199	24702	24813	24924	60005	60140	60274	408	424	440	5443	5485	5526
69	133	144	154	2992	3036	3081	24077	24187	24296	60594	60728	60863	509	526	544	5754	5797	5839
70	135	145	155	2879	2922	2965	23266	23373	23481	59682	59815	59948	621	640	659	5927	5970	6013
71	121	130	139	2621	2661	2702	21239	21343	21446	56291	56420	56548	737	758	778	5904	5947	5989
72	102	110	119	2260	2298	2335	19117	19215	19313	52273	52397	52521	860	882	903	5760	5802	5844
73	83	91	98	2074	2109	2144	16788	16881	16974	49023	49143	49262	997	1020	1043	5614	5656	5698
74	75	82	89	1789	1822	1856	15561	15650	15739	46973	47089	47205	1152	1177	1201	5618	5660	5701
75	59	66	72	1588	1619	1651	14058	14144	14230	45364	45477	45589	1306	1332	1358	5632	5673	5715
76	58	64	70	1470	1500	1529	13012	13095	13179	44997	45107	45217	1437	1464	1491	5729	5770	5811
77	48	54	60	1389	1417	1446	11934	12014	12094	43395	43501	43607	1523	1551	1579	5686	5727	5767
78	44	50	55	1183	1209	1236	10518	10593	10668	39737	39837	39937	1537	1565	1593	5368	5407	5446
79	32	37	42	962	986	1010	8840	8909	8978	35185	35278	35370	1505	1533	1561	4892	4929	4966
80	32	37	41	826	848	869	7608	7672	7735	30416	30501	30587	1505	1533	1561	4517	4552	4587
81	24	28	32	675	694	714	6405	6462	6520	25293	25372	25450	1581	1609	1638	4250	4283	4316
82	19	23	26	477	494	511	5107	5159	5212	21579	21653	21727	1710	1740	1770	3988	4020	4053
83	18	21	25	396	412	428	4925	4975	5026	20369	20441	20513	1955	1987	2019	4124	4156	4189
84	15	18	21	397	412	428	4277	4325	4373	19227	19298	19368	2201	2235	2269	4180	4213	4246
85	14	17	19	378	392	406	4134	4180	4226	17394	17462	17530	2416	2451	2486	4006	4040	4073
86	10	12	14	265	278	290	2958	2999	3039	14211	14273	14336	2350	2385	2420	3320	3351	3383

Source: IHS HealthEcon (2006)

Table 63: Calculated number of transitions for women starting from "Bad" to other health states – GER

	Very Good			Good			Fair			Bad			Residential care			Death		
Women	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	303	318	333	5678	5738	5798	37489	37623	37756	85849	86008	86167	359	374	389	2345	2384	2423
66	310	325	340	5571	5631	5691	37209	37343	37477	84720	84876	85033	417	433	449	2515	2557	2598
67	325	340	356	5667	5727	5788	38883	39019	39155	86094	86250	86406	522	539	557	2780	2824	2868
68	313	328	343	5496	5555	5613	37975	38110	38245	88137	88294	88451	680	700	721	3028	3074	3119
69	317	331	346	5394	5452	5510	37814	37950	38086	92126	92285	92444	888	910	933	3361	3409	3456
70	324	338	353	5353	5411	5469	38268	38405	38541	96129	96290	96451	1153	1179	1204	3748	3797	3847
71	300	314	328	5233	5289	5346	37439	37575	37711	99514	99676	99838	1478	1507	1536	4131	4182	4233
72	272	285	298	5048	5104	5160	37926	38062	38199	103421	103584	103747	1882	1914	1947	4608	4661	4713
73	264	277	290	4805	4859	4914	37747	37882	38018	105163	105327	105491	2384	2420	2457	5077	5131	5186
74	243	255	267	4505	4559	4612	36236	36370	36504	107746	107910	108074	2991	3031	3071	5394	5451	5507
75	238	250	262	4470	4523	4575	36171	36305	36439	113095	113260	113425	3709	3754	3798	5780	5838	5897
76	235	246	258	4201	4252	4304	35538	35670	35803	115215	115379	115543	4441	4489	4537	5932	5992	6053
77	211	222	233	3927	3975	4024	32360	32488	32616	113039	113199	113358	5049	5100	5151	5809	5870	5931
78	187	197	207	3426	3472	3518	29531	29653	29775	108205	108357	108510	5492	5544	5597	5409	5469	5529
79	141	150	160	3084	3127	3169	26465	26579	26693	98853	98996	99140	5800	5853	5907	4962	5021	5079
80	128	137	145	2565	2604	2642	22570	22675	22781	86943	87076	87209	6135	6190	6245	4757	4813	4870
81	99	107	114	2239	2274	2310	20389	20486	20584	75715	75840	75966	6822	6880	6938	4877	4933	4988
82	93	100	106	1846	1878	1910	17649	17740	17831	65223	65344	65464	8022	8084	8146	4781	4837	4892
83	79	85	91	1491	1520	1549	15520	15606	15692	59410	59528	59646	9601	9668	9735	4758	4814	4870
84	73	78	84	1323	1351	1379	14712	14795	14879	56853	56970	57086	11315	11387	11459	4672	4730	4788
85	57	63	68	1264	1290	1316	13679	13758	13837	51753	51867	51981	12853	12928	13003	3995	4053	4112
86	44	48	53	949	972	995	10974	11046	11118	43946	44052	44159	13416	13491	13567	3098	3154	3209

Source: IHS HealthEcon (2006).

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Table 64: Calculated number of transitions starting from “Residential care” to other health states – GER

	Residential care			Death		
Men	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	1656	1678	1699	300	313	326
66	1604	1625	1646	332	346	360
67	1515	1537	1558	404	420	435
68	1386	1408	1429	545	563	580
69	1248	1269	1290	705	724	743
70	1107	1128	1149	876	897	917
71	970	990	1010	1065	1088	1110
72	834	853	873	1270	1293	1317
73	695	714	732	1494	1519	1543
74	531	548	565	1761	1786	1812
75	358	373	387	2056	2083	2110
76	209	221	232	2280	2307	2334
77	97	106	114	2418	2445	2473
78	24	28	32	2483	2510	2537
79	3	4	6	2415	2442	2468
80	16	20	24	2305	2331	2357
81	33	39	44	2307	2333	2358
82	29	35	40	2508	2534	2560
83	29	34	39	2792	2818	2845
84	28	34	39	3249	3277	3305
85	16	20	24	3648	3678	3707
86	1	2	3	3955	3985	4014

	Residential care			Death		
Women	l.b.	t.p.	u.b.	l.b.	t.p.	u.b.
65	1406	1427	1447	242	257	273
66	1484	1506	1527	280	297	314
67	1542	1564	1587	364	383	402
68	1524	1547	1569	557	579	601
69	1506	1530	1553	781	805	830
70	1588	1613	1638	1002	1029	1056
71	1821	1848	1874	1250	1280	1309
72	2178	2207	2237	1568	1601	1633
73	2661	2693	2726	1970	2006	2041
74	3067	3102	3137	2624	2664	2703
75	3135	3171	3207	3592	3636	3680
76	2890	2925	2961	4677	4725	4773
77	2580	2614	2648	5611	5662	5712
78	2044	2074	2105	6448	6500	6552
79	1693	1722	1750	6830	6882	6934
80	1925	1955	1985	6874	6926	6977
81	2452	2485	2519	7150	7202	7253
82	2735	2771	2806	8253	8306	8359
83	3176	3215	3253	9853	9909	9964
84	3577	3617	3658	12012	12071	12130
85	3033	3070	3107	14430	14490	14551
86	2171	2203	2236	16058	16118	16179

Source: IHS HealthEcon (2006).

5.11 Life expectancy and healthy life expectancy – United Kingdom

Table 65: Life expectancy and healthy life expectancy – UK

Men	Life expectancy (LE)	Healthy life expectancy (HLE)	
	Years	Years	% of LE in ill-health
65	14.74	9.74	33.95
66	14.06	9.17	34.79
67	13.40	8.69	35.12
68	12.75	8.19	35.71
69	12.12	7.69	36.57
70	11.52	7.24	37.15
71	10.92	6.88	37.03
72	10.34	6.42	37.84
73	9.77	6.04	38.21
74	9.22	5.70	38.19
75	8.67	5.34	38.37
76	8.14	5.00	38.48
77	7.61	4.68	38.48
78	7.09	4.36	38.45
79	6.58	4.07	38.16
80	6.09	3.78	37.88
81	5.60	3.48	37.86
82	5.13	3.21	37.38
83	4.63	2.95	36.19
84	4.08	2.62	35.77
85	3.47	2.31	33.44
86	2.80	1.94	30.81
87	2.21	1.62	26.51
88	1.55	1.21	21.93
89	0.85	0.72	15.10

Women	Life expectancy (LE)	Healthy life expectancy (HLE)	
	Years	Years	% of LE in ill-health
65	16.59	10.38	37.45
66	15.84	9.75	38.48
67	15.10	9.10	39.75
68	14.37	8.53	40.67
69	13.64	8.01	41.31
70	12.94	7.45	42.44
71	12.25	7.00	42.89
72	11.58	6.54	43.50
73	10.92	6.09	44.22
74	10.29	5.73	44.31
75	9.68	5.38	44.37
76	9.07	5.02	44.63
77	8.47	4.67	44.84
78	7.88	4.36	44.65
79	7.29	3.99	45.30
80	6.72	3.67	45.44
81	6.15	3.34	45.58
82	5.57	3.06	45.07
83	4.96	2.75	44.59
84	4.33	2.43	43.82
85	3.65	2.08	43.07
86	2.91	1.71	41.21
87	2.29	1.38	39.49
88	1.61	1.01	37.01
89	0.88	0.64	27.10

Source: IHS HealthEcon (2006).

5.12 Life expectancy and healthy life expectancy – Belgium

Table 66: Life expectancy and healthy life expectancy – BEL

Men	Life expectancy (LE)	Healthy life expectancy (HLE)	
	Years	Years	% of LE in ill-health
60	17.75	12.20	31.28
61	17.03	11.48	32.58
62	16.32	10.72	34.31
63	15.64	10.05	35.71
64	14.97	9.39	37.30
65	14.30	8.77	38.69
66	13.65	8.23	39.72
67	13.02	7.73	40.66
68	12.40	7.31	41.06
69	11.80	6.88	41.67
70	11.21	6.49	42.15
71	10.63	6.14	42.25
72	10.06	5.78	42.48
73	9.49	5.39	43.25
74	8.94	5.05	43.56
75	8.42	4.69	44.27
76	7.93	4.33	45.41
77	7.47	4.06	45.63
78	7.03	3.82	45.65
79	6.62	3.57	46.03
80	6.19	3.42	44.74
81	5.74	3.26	43.17
82	5.26	2.99	43.18
83	4.77	2.74	42.47
84	4.25	2.50	41.19
85	3.70	2.21	40.12
86	3.11	1.88	39.39
87	2.45	1.62	34.01
88	1.71	1.22	28.93
89	0.90	0.74	18.35

Women	Life expectancy (LE)	Healthy life expectancy (HLE)	
	Years	Years	% of LE in ill-health
60	21.61	12.81	40.73
61	20.90	12.17	41.79
62	20.20	11.56	42.79
63	19.47	10.86	44.20
64	18.71	10.24	45.26
65	17.94	9.64	46.27
66	17.16	9.09	47.01
67	16.38	8.52	47.98
68	15.60	8.02	48.60
69	14.82	7.55	49.06
70	14.06	7.09	49.59
71	13.29	6.62	50.18
72	12.55	6.16	50.88
73	11.81	5.70	51.72
74	11.09	5.31	52.13
75	10.39	4.97	52.14
76	9.71	4.60	52.62
77	9.06	4.34	52.16
78	8.43	4.10	51.39
79	7.82	3.81	51.28
80	7.22	3.52	51.23
81	6.61	3.27	50.58
82	6.00	2.98	50.26
83	5.38	2.69	50.02
84	4.75	2.44	48.62
85	4.10	2.21	46.15
86	3.40	1.93	43.28
87	2.65	1.61	39.28
88	1.84	1.29	29.88
89	0.95	0.77	18.82

Source: IHS HealthEcon (2006).

5.13 Life expectancy and healthy life expectancy – Germany

Table 67: Life expectancy and healthy life expectancy – GER

Men	Life expectancy (LE)	Healthy life expectancy (HLE)	
	Years	Years	% of LE in ill-health
60	17.91	6.31	64.79
61	17.16	6.04	64.82
62	16.42	5.78	64.80
63	15.70	5.52	64.86
64	14.99	5.13	65.76
65	14.30	4.80	66.40
66	13.61	4.54	66.67
67	12.95	4.18	67.71
68	12.30	3.95	67.91
69	11.66	3.73	68.05
70	11.04	3.50	68.30
71	10.43	3.24	68.89
72	9.84	3.07	68.75
73	9.26	2.81	69.62
74	8.71	2.62	69.88
75	8.18	2.48	69.68
76	7.66	2.36	69.26
77	7.16	2.19	69.36
78	6.67	2.07	68.99
79	6.20	1.96	68.34
80	5.72	1.84	67.79
81	5.27	1.66	68.52
82	4.83	1.53	68.31
83	4.38	1.55	64.61
84	3.86	1.49	61.35
85	3.28	1.38	57.72
86	2.62	1.26	51.96
87	1.86	1.11	40.23
88	0.98	0.73	25.72

Women	Life expectancy (LE)	Healthy life expectancy (HLE)	
	Years	Years	% of LE in ill-health
60	19.53	6.22	68.13
61	18.68	5.89	68.47
62	17.84	5.58	68.71
63	17.00	5.25	69.13
64	16.17	4.95	69.36
65	15.33	4.70	69.33
66	14.51	4.40	69.69
67	13.70	4.11	70.00
68	12.90	3.82	70.37
69	12.13	3.53	70.87
70	11.38	3.27	71.29
71	10.66	2.98	72.05
72	9.94	2.73	72.59
73	9.25	2.50	72.91
74	8.56	2.31	72.96
75	7.89	2.13	73.06
76	7.24	1.98	72.61
77	6.61	1.80	72.77
78	6.02	1.65	72.65
79	5.53	1.48	73.33
80	5.10	1.33	73.89
81	4.71	1.19	74.69
82	4.32	1.11	74.38
83	3.91	1.04	73.50
84	3.45	0.99	71.33
85	2.95	0.89	69.98
86	2.39	0.80	66.55
87	1.77	0.71	60.07
88	0.99	0.51	48.77

Source: IHS HealthEcon (2006).

5.14 Estimates of expected time in residential care

Table 68: Estimates of expected time in residential care

	Belgium		Germany		UK	
	Men	Women	Men	Women	Men	Women
65	0.254349	1.310505	0.115452	0.19056	0.143532	0.309876
66	0.259737	1.366158	0.11223	0.190516	0.154847	0.334149
67	0.261993	1.40913	0.107975	0.190239	0.16311	0.354027
68	0.264507	1.439945	0.105601	0.197617	0.156279	0.36155
69	0.269216	1.475101	0.105539	0.215379	0.16116	0.355364
70	0.275584	1.503698	0.107672	0.241049	0.169808	0.350577
71	0.28354	1.523622	0.111758	0.268748	0.163388	0.351879
72	0.293317	1.53773	0.116863	0.29331	0.165931	0.350196
73	0.307	1.548261	0.121525	0.304993	0.170146	0.367944
74	0.322123	1.546225	0.124792	0.305277	0.174935	0.405737
75	0.337795	1.546735	0.127613	0.303829	0.176585	0.449362
76	0.352106	1.530541	0.131422	0.306078	0.184528	0.476101
77	0.370496	1.50038	0.13658	0.309146	0.192401	0.514664
78	0.384105	1.466743	0.143616	0.328896	0.209307	0.550675
79	0.391746	1.42844	0.157987	0.381928	0.213714	0.5757
80	0.406878	1.384143	0.179797	0.447882	0.227051	0.603791
81	0.430904	1.354307	0.201225	0.497376	0.252446	0.63084
82	0.44562	1.324189	0.216687	0.535034	0.263817	0.624158
83	0.459569	1.275934	0.227394	0.543965	0.257931	0.594449
84	0.479988	1.218785	0.232486	0.516614	0.245985	0.541656
85	0.482389	1.140466	0.223378	0.469643	0.20628	0.446021
86	0.443666	1.01711	0.188923	0.395985	0.133094	0.308692

Source: IHS HealthEcon (2006).

5.15 Panel Regression results

Table 69: Panel Regression – Definition of Variables

Variable	Variable description	Range of Values
sex	Gender dummy variable	0…male 1…female
age	Age	Age = 65,…,90
lg	Initial healt state	lg1…very good lg 2…good lg 3…fair lg 4…bad lg 5…residential care lg 6…death
lid	Country dummy	lid1…UK lid2…Germany lid3…Belgium
aid	Coutry-age interaction dummy	aid1….age*lid1 aid2….age*lid2 aid3…age*lid3
_cons	Intercept capturing level effects of reference point	United Kingdom, male, age: 65, initial health state: *very good*

Source: IHS HealthEcon (2006).

Table 70: Subsequent health state: Very Good

```
Linear regression                               Number of obs      =       592
                                                Replications       =      1000
                                                Wald chi2(9)       =   7387.09
                                                Prob > chi2        =    0.0000
                                                R-squared          =    0.9565
                                                Adj R-squared      =    0.9558
                                                Root MSE           =    0.0358

------------------------------------------------------------------------------
             |   Observed   Bootstrap                         Normal-based
        prob |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         sex |  -.0058085   .0028821    -2.02   0.044    -.0114573   -.0001598
         age |  -.0037224   .0004843    -7.69   0.000    -.0046717   -.0027732
        aid2 |   .0012471   .0006843     1.82   0.068    -.0000941    .0025882
        aid3 |   .0012973   .0005998     2.16   0.031     .0001218    .0024728
        Ig_2 |  -.3317926   .0050771   -65.35   0.000    -.3417436   -.3218417
        Ig_3 |  -.3908791   .0052775   -74.06   0.000    -.4012229   -.3805353
        Ig_4 |  -.3974244   .0055359   -71.79   0.000    -.4082745   -.3865743
        Iid2 |  -.1516541   .0518949    -2.92   0.003    -.2533661    -.049942
        Iid3 |  -.1278451   .0467677    -2.73   0.006    -.2195082    -.036182
       _cons |   .7183077   .0390581    18.39   0.000     .6417553    .7948601
------------------------------------------------------------------------------
```

Source: IHS HealthEcon (2006).

Table 71: Subsequent health state: Good

```
Linear regression                               Number of obs      =       592
                                                Replications       =      1000
                                                Wald chi2(9)       =  11010.78
                                                Prob > chi2        =    0.0000
                                                R-squared          =    0.9454
                                                Adj R-squared      =    0.9445
                                                Root MSE           =    0.0483

------------------------------------------------------------------------------
             |   Observed   Bootstrap                         Normal-based
        prob |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         sex |  -.0044267   .0039983    -1.11   0.268    -.0122633    .0034098
         age |   -.002334   .0004566    -5.11   0.000    -.0032289    -.001439
        aid2 |   -.002444   .0008407    -2.91   0.004    -.0040918   -.0007962
        aid3 |  -.0008113   .0006522    -1.24   0.213    -.0020895    .0004669
        Ig_2 |   .1216834   .0070818    17.18   0.000     .1078034    .1355634
        Ig_3 |  -.2308721   .0046835   -49.29   0.000    -.2400517   -.2216925
        Ig_4 |   -.373518   .0052306   -71.41   0.000    -.3837698   -.3632662
        Iid2 |   .1017515    .063472     1.60   0.109    -.0226513    .2261543
        Iid3 |   .0689992   .0520517     1.33   0.185    -.0330203    .1710188
       _cons |   .6221316   .0386668    16.09   0.000      .546346    .6979172
------------------------------------------------------------------------------
```

Source: IHS HealthEcon (2006).

Table 72: Subsequent health state: Fair

```
Linear regression                               Number of obs      =       592
                                                Replications       =      1000
                                                Wald chi2(9)       =  12766.87
                                                Prob > chi2        =    0.0000
                                                R-squared          =    0.9103
                                                Adj R-squared      =    0.9089
                                                Root MSE           =    0.0543

------------------------------------------------------------------------------
             |   Observed   Bootstrap                         Normal-based
        prob |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         sex |   .0170553   .0044511     3.83   0.000     .0083313    .0257794
         age |  -.0016311   .0005719    -2.85   0.004     -.002752   -.0005102
        aid2 |   .0001606    .000901     0.18   0.858    -.0016052    .0019265
        aid3 |   .0006868   .0007814     0.88   0.379    -.0008446    .0022182
        Ig_2 |   .1954354    .006057    32.27   0.000     .1835639    .2073068
        Ig_3 |   .4596943   .0043187   106.44   0.000     .4512297    .4681589
        Ig_4 |   .1314614    .006386    20.59   0.000     .1189452    .1439776
        Iid2 |   .0720167   .0674949     1.07   0.286    -.0602709    .2043042
        Iid3 |  -.0111099   .0621229    -0.18   0.858    -.1328686    .1106488
       _cons |   .1797541   .0439255     4.09   0.000     .0936617    .2658465
------------------------------------------------------------------------------
```

Source: IHS HealthEcon (2006).

Table 73: Subsequent health state: Bad

```
Linear regression                               Number of obs      =       592
                                                Replications       =      1000
                                                Wald chi2(9)       =  15381.19
                                                Prob > chi2        =    0.0000
                                                R-squared          =    0.9651
                                                Adj R-squared      =    0.9646
                                                Root MSE           =    0.0403

------------------------------------------------------------------------------
             |   Observed   Bootstrap                         Normal-based
        prob |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         sex |   .0107953   .0033588     3.21   0.001     .0042121    .0173784
         age |  -.0002976   .0004883    -0.61   0.542    -.0012547    .0006595
        aid2 |   .0018292   .0006189     2.96   0.003     .0006161    .0030423
        aid3 |  -.0015333   .0007905    -1.94   0.052    -.0030827    .0000161
        Ig_2 |   .0234484   .0028859     8.13   0.000     .0177921    .0291046
        Ig_3 |   .1436028   .0028818    49.83   0.000     .1379545     .149251
        Ig_4 |   .5143578   .0061533    83.59   0.000     .5022974    .5264181
        Iid2 |  -.0686057   .0465416    -1.47   0.140    -.1598257    .0226142
        Iid3 |    .092775     .05783     1.60   0.109    -.0205697    .2061198
       _cons |   .0300824   .0360173     0.84   0.404    -.0405102     .100675
------------------------------------------------------------------------------
```

Source: IHS HealthEcon (2006).

Table 74: Subsequent health state: Residential Care

```
Linear regression                               Number of obs      =       740
                                                Replications       =      1000
                                                Wald chi2(10)      =   1091.81
                                                Prob > chi2        =    0.0000
                                                R-squared          =    0.7468
                                                Adj R-squared      =    0.7433
                                                Root MSE           =    0.1294

------------------------------------------------------------------------------
             |   Observed   Bootstrap                         Normal-based
        prob |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         sex |   .0470503   .0097223     4.84   0.000      .027995    .0661056
         age |  -.0025129   .0009975    -2.52   0.012    -.0044679   -.0005578
        aid2 |  -.0003627   .0020125    -0.18   0.857    -.0043072    .0035819
        aid3 |   .0037889   .0015292     2.48   0.013     .0007917     .006786
        Ig_2 |  -.0127604   .0079315    -1.61   0.108    -.0283059     .002785
        Ig_3 |   .0018987   .0083133     0.23   0.819     -.014395    .0181924
        Ig_4 |    .044421   .0100493     4.42   0.000     .0247247    .0641172
        Ig_5 |   .5458564    .021883    24.94   0.000     .5029666    .5887462
        Iid2 |  -.0082087   .1486616    -0.06   0.956    -.2995801    .2831627
        Iid3 |  -.2398085   .1195149    -2.01   0.045    -.4740535   -.0055636
       _cons |   .1895719    .076288     2.48   0.013     .0400501    .3390936
------------------------------------------------------------------------------
```

Source: IHS HealthEcon (2006).

Table 75: Subsequent health state: Death

```
Linear regression                               Number of obs      =       740
                                                Replications       =      1000
                                                Wald chi2(10)      =    867.26
                                                Prob > chi2        =    0.0000
                                                R-squared          =    0.6855
                                                Adj R-squared      =    0.6812
                                                Root MSE           =    0.1151

------------------------------------------------------------------------------
             |   Observed   Bootstrap                         Normal-based
        prob |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         sex |  -.0611428   .0086461    -7.07   0.000    -.0780889   -.0441968
         age |    .008901   .0008852    10.06   0.000      .007166     .010636
        aid2 |  -.0002716   .0016319    -0.17   0.868    -.0034701    .0029269
        aid3 |  -.0035005   .0011769    -2.97   0.003    -.0058071   -.0011938
        Ig_2 |    .003986   .0070975     0.56   0.574    -.0099249    .0178968
        Ig_3 |   .0165553   .0073765     2.24   0.025     .0020977    .0310129
        Ig_4 |   .0807029   .0076286    10.58   0.000     .0657512    .0956546
        Ig_5 |   .4025939    .018861    21.35   0.000     .3656271    .4395608
        Iid2 |   .0453986   .1203075     0.38   0.706    -.1903998     .281197
        Iid3 |    .221553   .0925218     2.39   0.017     .0402136    .4028924
       _cons |  -.6194825   .0680439    -9.10   0.000     -.752846    -.486119
------------------------------------------------------------------------------
```

Source: IHS HealthEcon (2006).

Table 76: Subsequent health state: 'Death' conditional on being in health state 'residential Care'

```
Linear regression                               Number of obs      =       148
                                                Replications       =      1000
                                                Wald chi2(6)       =   1411.37
                                                Prob > chi2        =    0.0000
                                                R-squared          =    0.9295
                                                Adj R-squared      =    0.9264
                                                Root MSE           =    0.0775

------------------------------------------------------------------------------
             |   Observed   Bootstrap                         Normal-based
        prob |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         sex |  -.1723684   .0128281   -13.44   0.000     -.197511   -.1472258
         age |   .0228957   .0018738    12.22   0.000      .019223    .0265683
        aid2 |   .0142266   .0028886     4.93   0.000     .0085651    .0198881
        aid3 |  -.0076642   .0021141    -3.63   0.000    -.0118077   -.0035207
        Iid2 |  -.8303332   .2187742    -3.80   0.000    -1.259123   -.4015436
        Iid3 |   .3890385   .1582287     2.46   0.014      .078916     .699161
       _cons |   -1.26056   .1383881    -9.11   0.000    -1.531795   -.9893242
------------------------------------------------------------------------------
```

Source: IHS HealthEcon (2006).

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7 Appendix: Data availability by country

Denmark

The German Institute for Economic Research (DIW) has collected data for Denmark. Population figures and data on deaths have been provided for both sexes in 5-year age groups for the years 1994-2003, data on inhabitants of residential care institutions (nursing homes and dwellings) for the years 1994-2003 in age groups for both sexes in total. Unfortunately, there seem to be no data on deaths in residential care institutions available.

Netherlands

The Netherlands Bureau for Economic Policy Analysis collected figures on mid-year population for the years 1994-2003 for both sexes. Data on residential care population has been provided for the years 1995-2001, excluding 1997. Those data comprise residents in nursing homes, homes for the elderly, and other institutions (homes for persons with a mental handicap, family replacement homes, religious institutions, prisons, boarding schools). Data on deaths in residential care has been collected for the years 1998-2003 (excluding 2002). The figures for the years 1998-2001 are reported to be imprecise for two reasons: First, the data consists of people who live in residential care institutions at January 1st of the relevant year. This means, that people moving into a residential care institution after January 1st and moving out before January 1st of the following year are not included in the statistic. Second, the fact that not all people moving into a residential care institution change their official address adds blurring to the reported figures. For the year 2003 an alternative data source without these imperfections, the statistic of causes of death, was available.

Belgium

The Federal Planning Bureau (FPB) has conducted data-collection for Belgium. Grouped and single year figures for both sexes on population and residential care population were provided for the years 1994-2001 and 1996-2003 (excluding 2002) respectively. Those data comprise residents in homes for the aged and homes for the elderly (ICHA-HP.2) As no data on deaths in residential care could be collected, FPB forwarded us estimates of the percentage of people dying in residential care, out of a survey on palliative care, conducted by the Belgian Ministry of Social Affairs (INAMI/RIZIV) for the year 2001, as an alternative.

France

Data for France, collected by the Laboratoire d'Economie et de Gestion des Organisations de Sant (LEGOS), originates from a variety of sources. Figures on population and grouped

data on deaths in residential care (both sexes in total) for the years 1994-2003 come from the French National Institute for Statistics and Economic Series (INSEE). Furthermore, data on mid-year population and residential care population in single years is available from the 1999 census. Data on residential care for 1994 in age groups is available from the DRESS-EHPA study. This data has to be corrected for the fact, that inhabitants of community care facilities for the elderly are not taken into account. Additionally, data on residential care population 1998 was gathered in the Handicaps, Impairments, and Dependency Survey (HID), carried out by INSEE. The survey also provides data on deaths in residential care institutions in 1999 (single years).

Ireland

Data collection for Ireland has been done by the Irish Social and Economic Research Institute (ESRI). ESRI provided population data from the censuses in 1991, 1996, and 2002, conducted by the Central Statistics Office Ireland, for both sexes in single years. ESRI reports that data on residential care population can be found in the "Long Stay Activity Report"[13] by the Irish Department of Health and Children and data on persons in non-private households in the 2002 Census of Population. Due to the different definitions of "long stay units" and "non-private households" used in both data sources, figures vary considerable.

Italy

The Institute for Studies and Economic Analysis (ISAE) did the data collection for Italy. It provided population figures for the years 1999-2001 in single years for both sexes and some spare data on residential care and deaths in residential care (1999 and 2000).

Greece

Figures on mid-year population and overall deaths can be found in standard statistical resources like Eurostats New-Cronos database. No data on residential care could be provided.

Spain

The Foundation for Applied Economic Research (FEDEA) provided data for Spain. Population data has been collected for both sexes for single year age groups for the years 1994-2001. Unfortunately, no national observations on residential care population and deaths in residential care have been found. FEDEA submitted figures from a study, done by Casado-Marín and López i Casasnovas (pages 116-117 in Vejez, dependencia y cuidados

[13] The Information Unit – Department of Health and Children: "Long Stay Activity Report", Dublin 2002

de larga duración, Colección Estudios Sociales No. 6, Fundación "La Caixa", 2001), which gives a first insight into the dimension of the residential care population. Casado-Marín and López i Casanovas estimate the residential care population by sex by applying sex and age ratios – calculated with Residence Register Records – to the number of beds disposed of the Spanish Ministry of Health in all homes for the elderly. Therefore, the study assumes that all beds are occupied. FEDEA assesses the figures as reasonable, “maybe with a little upward bias”.

Portugal

No data provided.

Austria

Data on mid-year population in single years and for both sexes can be found in various publications by Statistics Austria. Single year data on residential care is provided in the 1991 and 2001 censuses. We were not able to find any data on deaths in residential care in standard demographic resources of Statistics Austria, nor in any surveys published on the topic of residential care.

Finland

The Research Institute of the Finnish Economy (ETLA) provided population figures (single years) for the years 1994-2003. Single year data on residential care and deaths in residential care were provided for the years 1995-2003. All figures are end of the year figures and therefore had to be averaged over two consecutive years in order to get a closer approximation for mid-year figures. ETLA reported that the number of deaths in residential care institutions is underestimated, though, due to transfers to acute care institutions.

Germany

The German Institute for Economic Research (DIW) collected data for Germany and was able to deliver mid-year figures on population and deaths for the years 1994-2003 for both sexes in age groups. Grouped data on residential care population has been provided for the years 1997-2003 for both sexes in total. Those data comprise all persons receiving statutory and private long-term care insurance. Unfortunately, there is no data on deaths in residential care institutions available.

UK

The National Institute of Economic and Social Research (NIESR) gathered population figures for the years 1994-2001 for both sexes. The UK has no figures on the share of the

population living in residential care institutions, excepting census years. NIESR used census data from 1991 and 2001 to interpolate the size of the residential care population for the years 1994 to 2001. Knowing that the share of the residential care population declined between the observed years, NIESR assumed that 75 percent of the decline took place between 1991 and 1996, the remainder between 1996 and 2001. The definition of residential care in those data comprises residential care and nursing homes. Data on deaths in residential care is not available for the UK.

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