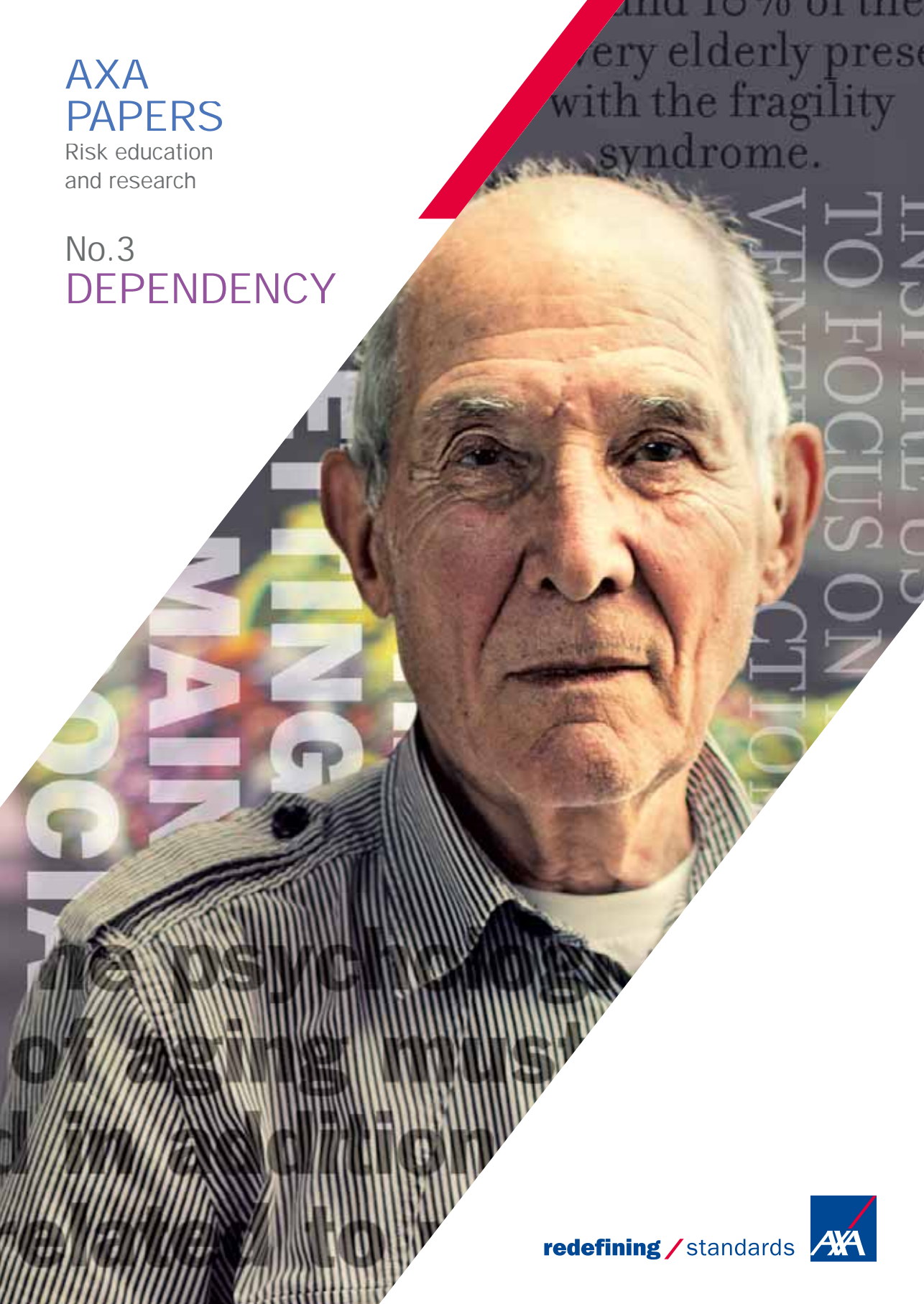


# AXA PAPERS

Risk education  
and research

## No.3 DEPENDENCY



redefining / standards



# DEPENDENCY

Demographic aging appears to be an ineluctable outcome for all OECD countries and, more generally speaking, at the global scale. It is in fact due to a combination of several factors, the main one of which is increasing life expectancy.

A study by Christensen, Vaupel et al, which was published in 2009, estimates that one out of two children born in 2007 will live beyond the age of 100 in most Western countries. And one out of two children born in 2000 will live to be 101 in Denmark. The figure is 102 in Germany, 103 in the United Kingdom, 104 in France, Italy, Canada and the United States, and 107 in Japan.

Demographic aging that results from an increase in life expectancy, coupled with a low fertility rate and a low immigration rate, is a virtually undeniable trend. Conversely, when it comes to estimating the trend in terms of the numbers of individuals requiring long-term care, there is no real consensus. In fact, these estimates depend to a large extent on the trends in healthy life expectancy, and there is no absolute consensus in this area either.

Some demographers estimate that we are currently experiencing a phase of compression of morbidity<sup>(1)</sup>. For them, healthy life expectancy is increasing faster than life expectancy. Others favor a stability scenario or even an expansion of morbidity following the increase in chronic illnesses related—for example—to diabetes and obesity. Nonetheless, even if the compression of morbidity scenario turns out to be accurate, any increase in the number of individuals reaching very old age would most likely lead to an automatic increase in the number of elderly people in need of long-term care (dependent elders).

In light of the forgoing, what mechanisms have been put in place, in the public and private spheres, to care for dependent elders? How is dependency defined and assessed? What is the future trend in the number of dependent elders?

(1) The morbidity rate is defined as the ratio between the number of people who suffer from an illness over a given period and the total population exposed to the risk of illness.

# CONTENTS

## **1. DEPENDENCY: THE PRINCIPAL ATTRIBUTES**

- 1.1. Definition and assessment \_\_\_\_\_ 3
- 1.2. Prevalence \_\_\_\_\_ 5

## **2. DEMOGRAPHICS AND COSTS**

- 2.1. Adverse demographic ratios \_\_\_\_\_ 14
- 2.2. The public cost of dependency \_\_\_\_\_ 16
- 2.3. Informal caregiving \_\_\_\_\_ 18

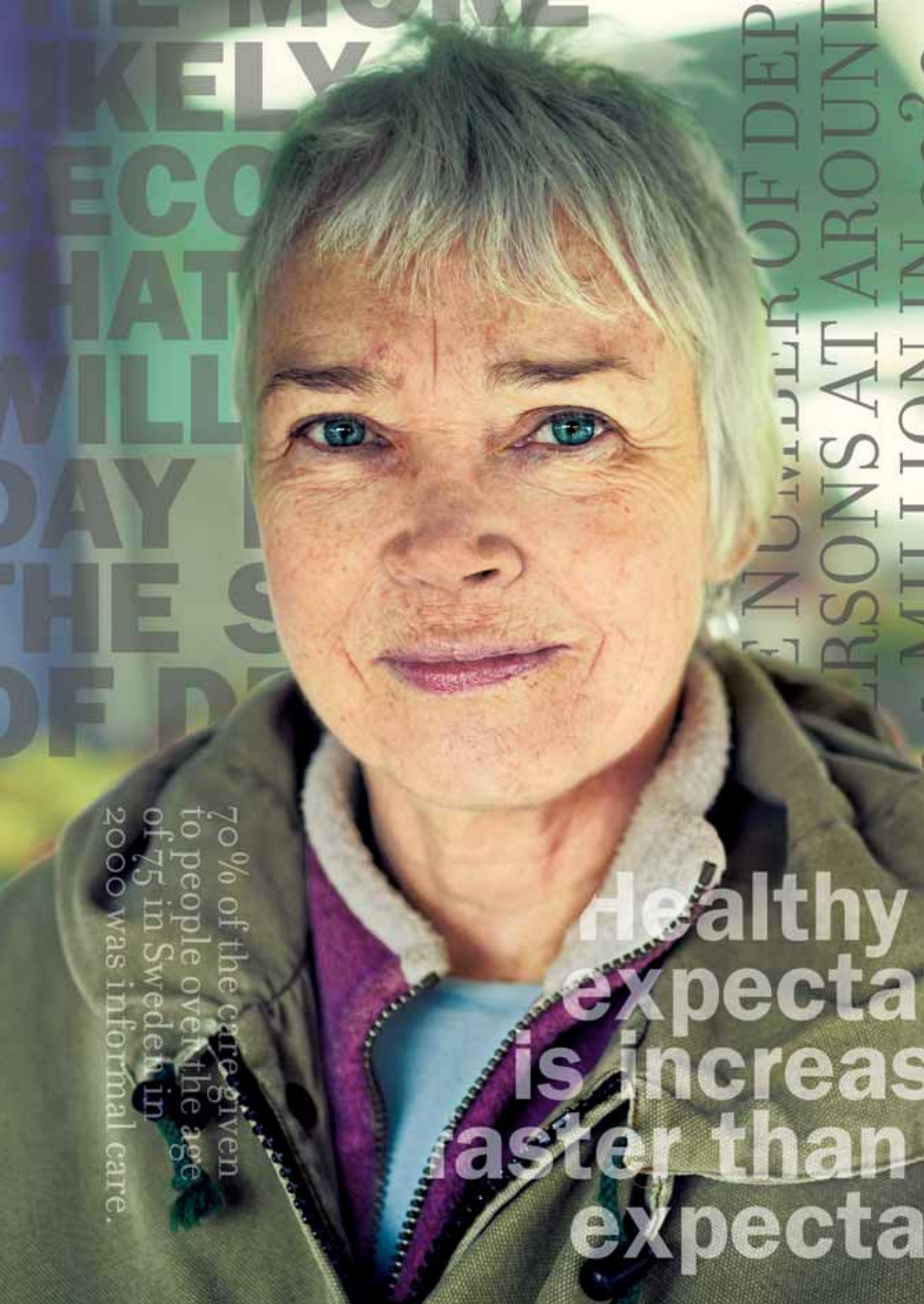
## **3. RESPONSES TO THE RISK**

- 3.1. Varied levels of coverage \_\_\_\_\_ 21
- 3.2. Synoptic table of the major markets \_\_\_\_ 25
- 3.3. Prevention and gerontechnology \_\_\_\_\_ 26

## **4. MODELING OF THE RISK**

- 4.1. Modeling long-term care is based  
on multiple state models \_\_\_\_\_ 28
- 4.2. The risks insurance \_\_\_\_\_ 28
- 4.3. Preventive actions, a major issue \_\_\_\_\_ 30

- Selected online bibliography \_\_\_\_\_ 31



THE MOST LIKELY ECONOMIC WHAT WILL DAY THE OF DE  
THE NUMBER OF DEP PERSONS AT AROUND  
MILLION IN

70% of the care given to people over the age of 75 in Sweden in 2000 was informal care.

Healthy  
expecta  
is increas  
aster than  
expecta

# 1. DEPENDENCY: THE PRINCIPAL ATTRIBUTES

## 1.1 – Definition and assessment

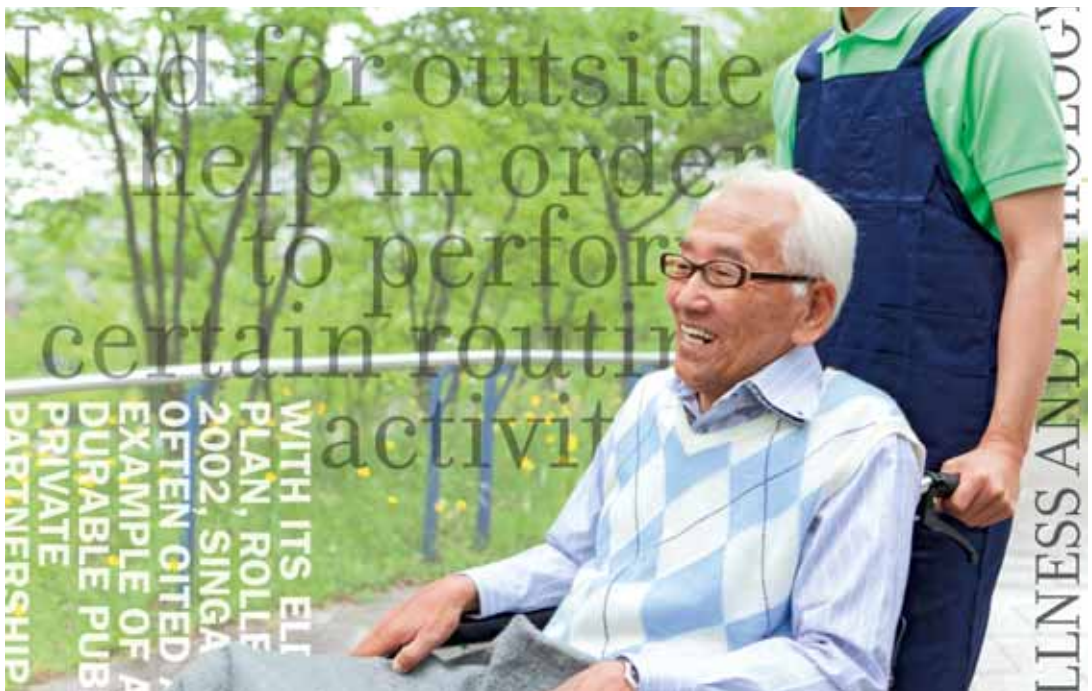
Good bodily functioning is an essential factor in healthy aging. The process of evolving toward disablement (the disablement process) has been described in detail by Verbrugge and Jette<sup>(2)</sup>. Most of the models related to this process begin with illness and pathology, even though gerontologists agree that molecular and cellular changes precede illness/disease. The process then evolves in the direction of functional limitations and impairments, such as visual acuity, hearing, cognitive abilities, and bodily deterioration that leads to restrictions in terms of performing routine activities.

This state of dependency or loss of autonomy, which

can also be caused by an accident, corresponds to the need for outside help in order to perform certain routine activities. In reality, there are several ways to define and assess dependency/need for long-term care, depending on the country and, even within a single country, depending on whether we are talking about the definition used by insurers or that used to determine the need for public assistance.

There are two major types of assessment. The goal of the first type is to define the extent of loss of autonomy. In this case, we evaluate the number of routine activities that the person being assessed can no longer perform without the assistance of a third party. The second type is based on the consequences of the loss of autonomy. In this case, we assess the number of hours of assistance that are needed.

(2) The Disablement Process, Social Science & Medicine 1994.



In theory, the notion of dependency is not a matter of age. However, in some countries—including France—to qualify for public assistance a distinction is made between those over the age of 60 (dependent elders) and those under the age of 60 (disabled individuals). During the debates on reforming the LTC system in France, the need to find a homogenous definition among the various players was widely stressed.

Conversely, in Germany LTC for dependency covers people who are disabled (who suffer from diminished capacity) regardless of their age.

Every country has its own references and assessment grids, even though most of them are based on the same underlying notions—in particular, on the ability to accomplish independently various ADL (Activities of Daily Living, such as bathing, dressing, toileting,

## AGGIR Grid

In France, the AGGIR Grid (*Autonomie Gérontologie Groupe Iso-Ressources*) classifies individuals using a 6-level scale, from the most dependent (GIR 1) to the most autonomous (GIR 6).

**GIR 6:** Autonomous people

**GIR 5:** People who only require specific assistance for toileting, housework and meal preparation.

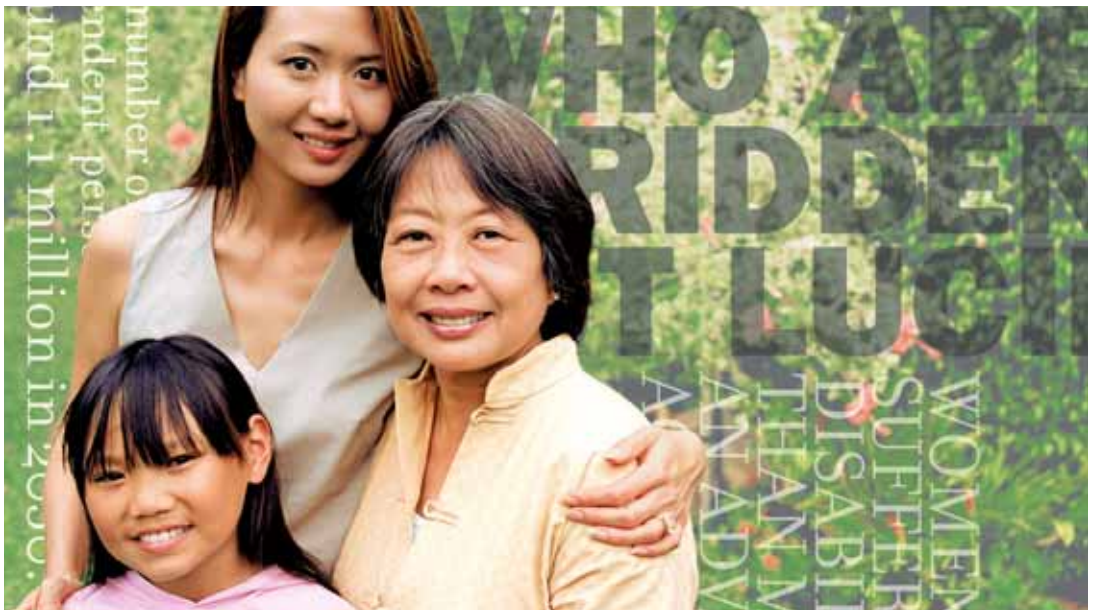
**GIR 4:** People who do not go outside alone but who are able to get around in their own homes without assistance once they are up. They also need assistance toileting and dressing. This group also includes people who do not have locomotive issues but who cannot take care of their own meals or certain bodily functions without assistance.

**GIR 3:** People who have maintained their mental autonomy and also their locomotive autonomy, but who need assistance several times a day with their bodily autonomy.

**GIR 2:** People who are bed-ridden but lucid (their cognitive faculties are not totally impaired), as well as people with dementia or otherwise seriously disoriented but who totally or substantially maintain their ability to get around on their own. These individuals need to assistance with most daily living activities.

**GIR 1:** People who have lost their cognitive, locomotive and social autonomy. People who are confined to their bed or to a wheelchair and who also have dementia. These individuals require a round-the-clock presence.

Ten variables enter into the assessment of GIR: coherence, orientation, toileting, dressing, feeding, eliminating, transferring, moving around inside the home or care facility, moving/getting around outside, and communicating remotely. For each one of these ten variables, individuals are evaluated in terms of their ability to successfully perform the corresponding activities spontaneously and totally without assistance; or whether some kind of more or less partial assistance or encouragement/reminder is needed, or if the person is either unable or unwilling to perform the activity.



transferring, continence and feeding, according to the Katz Scale). The Lawton-Brody Scale, based on Instrumental Daily Living Activities (IDLA, which includes actions such as shopping, housekeeping, ability to use the telephone and responsibility for own medications) is also frequently used to diagnose the degree of dependency/independence. It is necessary to have a very precise definition of the various activities in order to ensure that the assessment is as objective and consistent as possible. In Asia, for example, it is deemed necessary to be able to use chopsticks to feed oneself, while in Europe and the United States, using a fork is the accepted standard of independence.

Various forms of dementia account for a significant portion of dependencies. Detecting them, in particular those involving slight deterioration in mental functioning that is not yet at the stage of clear dementia, is an important aspect in obtaining LTC insurance coverage. The principal diagnostic tool is the MMSE (Mini Mental State Examination or Folstein test), based on

30 questions designed to screen for cognitive impairment in the elderly with respect to orientation to time and place, attention and calculation, memory and language use/comprehension. A score below 24 is a sign of probable mild cognitive impairment, a score below 15 indicates moderately severe impairment, and a score below 10 indicates severe dementia. Other tests, such as the BLESSED dementia scale, can also be used. Some of these tests offer the advantage of being very short, such as the clock-drawing test, the five words test and the Codex test<sup>(3)</sup>.

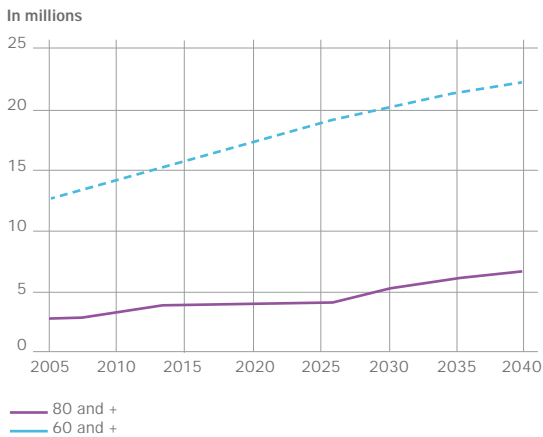
### 1.2 – Prevalence<sup>(4)</sup>

The older we get, the more likely it becomes that we will one day experience the state of dependency. Accordingly, the phenomenon of dependency in elders,

(3) Cognitive Disorders Examination

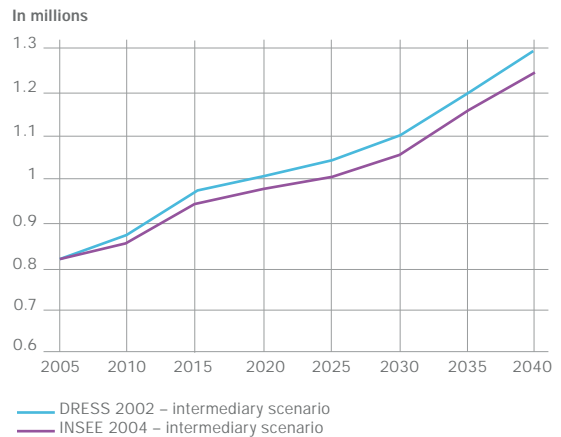
(4) Prevalence measures the percentage of a given population that is affected by a given illness or disease. Incidence is a measure of disease that indicates the number of new cases of a given disease during a given period of time (for example, annual incidence). The prevalence rate is a stock variable, while incidence is a flow variable.

## Population projections for Metropolitan France, individuals aged 60-80



Source: INSEE, 2010 demographic projections.

## Projected number of dependent elderly individuals, 2002-2004



Source: DREES for task force.

which was a mere epiphenomenon, is becoming more prevalent as demographic aging has led to increases in life expectancy.

Projections of the number of dependent persons in France, calculated in 2002 and 2004, are reproduced above. They put the number of dependent persons at around 1.1 million in 2030. But in mid-2011, the number of individuals receiving an APA personal autonomy allowance (*Allocation Personnalisée d'Autonomie*) had already surpassed this level (1.2 million).

A number of demographers have assessed the state of health (mental or physical) of a given population and predicted trends. Diverse indicators are used: the presence or absence of disease/illness, the presence of a disability, functional limitations, self-assessments of health, etc. Contrary to longevity studies, where only two states are possible (alive or dead), it is not always a simple matter of using homogenous data that enable comparisons over time or place. This presupposes a

precise definition of dependency combined with an objective assessment tool.

Most studies agree that mortality is higher among males at every age, but that women suffer more disabilities than men at an advanced age. A recent comparative study between Denmark, Japan and the United States<sup>(5)</sup> confirms this outcome for those three countries. It would also appear that women in bad health also have a lower mortality rate than men in bad health.

The INSERM recently updated life expectancies without disability in France, on the basis of data from a number of broad European studies, assessing on the one hand good functional health (defined as the absence of physical limitations such as impaired vision or impaired motor functioning) and on the other

(5) "Men: good health and high mortality; sex differences in health and aging", Oksuzyan, Anna; Juel, Knud; Vaupel, James W.; Christensen, Kaare.



IT SEEMS I HAI FAI  
GETTING ENOUGH E  
MAINTAINING A HEA  
LIFE CAN HELP PEOP

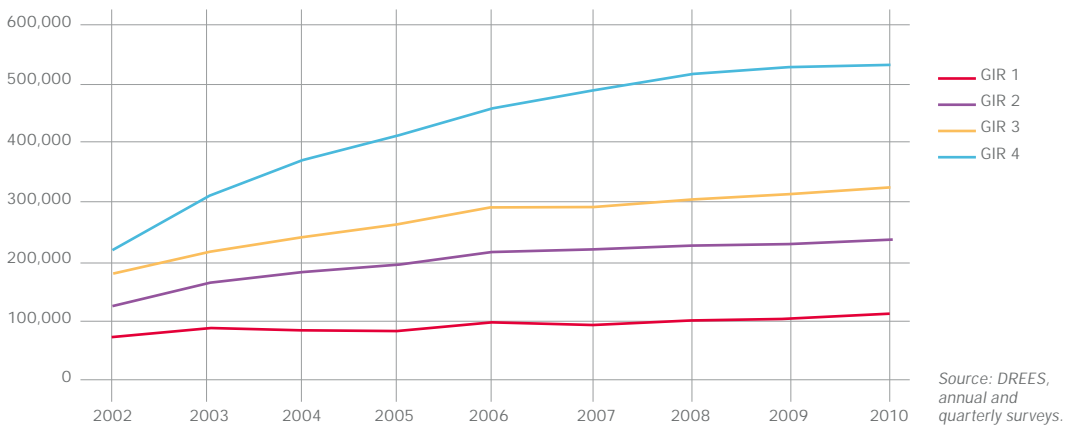
# Diverse Indicators are used.



In France, at the  
age of 50, men  
can hope to spend  
nearly 50% of  
the rest of their  
lives in good  
functional health.

PROTECTION  
OF THE NUMBER  
OF DEPENDENT  
PERSON

## Change in number of APA beneficiaries since 2002, by GIR



hand the absence of restrictions on activity (inability to perform certain tasks, such as bathing or shopping). Their findings suggest that at the age of 50, men can hope to spend nearly 50% of the rest of their lives in good functional health, compared with 40% for women. The INSERM notes the emergence of a certain degree of stagnation in healthy life expectancy in France in recent years, in particular for women and for the cohort of 50-65 year olds.

Members of the most disadvantaged groups (from a socio-economic perspective) appear to have a lower average life expectancy. In France, for example, the life expectancy of manual laborers is shorter than that of white collar workers/managers. But living a shorter life does not spare this group from years of bad health. Health surveys<sup>(6)</sup> show that they are doubly hurt: they don't live as long, on average, and they suffer longer from an impairment or disability.

## APA beneficiaries, December 31, 2010

|              | Number (thousands) | %    |
|--------------|--------------------|------|
| <b>GIR 1</b> | 105                | 8.8  |
| <b>GIR 2</b> | 322                | 26.8 |
| <b>GIR 3</b> | 238                | 19.8 |
| <b>GIR 4</b> | 535                | 44.6 |
| <b>Total</b> | 1,200              | 100  |

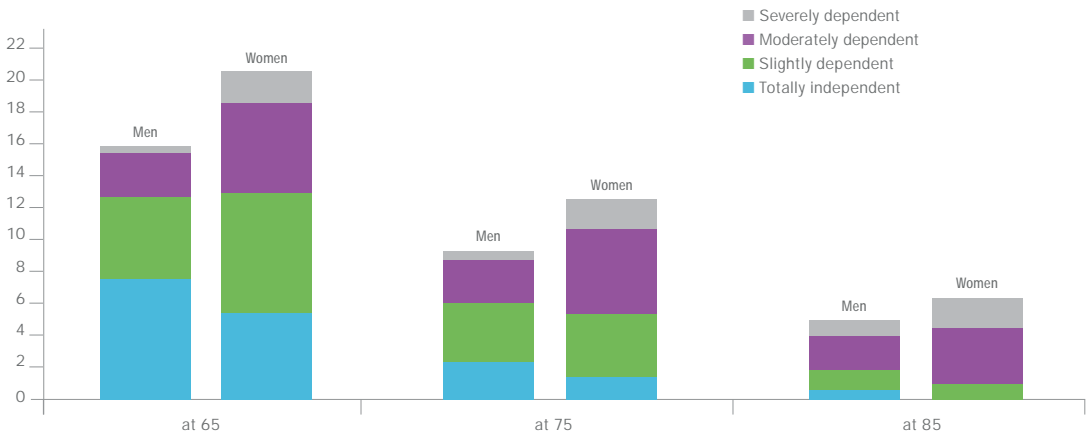
In France, the quarterly statistics provided by the APA indicate the relative weight of various degrees or levels of dependency<sup>(7)</sup>. For example, on December 31, 2010, the least serious dependencies (the most mild) (GIR 4<sup>(8)</sup>) accounted for 45% of the APA's beneficiaries, while the most severe cases (GIR 1 for bed ridden individuals with dementia) represented 9% of its beneficiaries.

(6) Including the survey on health and healthcare in France (INSEE 2003).

(7) The APA data provide a rough idea of magnitude, but the criteria for attribution do not seem to be totally consistent from one region to the next.

(8) GIR 5 is not covered by the APA.

Healthy life expectancy



Source: Pérès, K. et al.

The steady increase in the number of APA beneficiaries, observed over the past decade, is mainly due to an increase in the mildest forms of dependency (GIR 4).

An analysis of PAQUID data (QUID for Elderly Persons, a very complete French cohort study that is used for much of the work on dependency) confirms that, despite their higher life expectancy at every age, women on average spend less time in the state of total autonomy than men.

Does the increase in life expectancy go hand in hand with a later onset of physical obstacles and disability? Though uncertain, the research suggests that the aging process is evolving and that people are generally living longer without major disabilities.

In Denmark, Christensen and colleagues observed people who were a hundred years old in 1995 (i.e., the 1895 cohort)<sup>(9)</sup> before making a comparison in

2005 with the 1905 cohort of centenarians. They demonstrated that the number of individuals reaching the age of 100 was larger by half for the 1905 cohort, but that there was no increase in the level of disability. A slight improvement was even noted among the female subjects (Engberg et al., 2008a; Engberg et al., 2008b). These findings are consistent with observations of groups of slightly younger people: lower rate of chronic disability, and longer and better quality lives for successive cohorts in numerous countries (Aijanseppa et al., 2005; Freedman et al., 2002; Manton et al., 2006; Manton & Gu, 2001; Robine & Michel, 2004). The psychological aspects of aging must be considered in addition to the problems related to physical health. After the age of 60, the cases of diagnosed depression become less frequent, even though the frequency of self-reported symptoms by people in this cohort increases (Fiske et al., 2009; Johnson et al., 2002). What emerged from tracking everyone in the Danish cohort of 1905 between the ages of 92 and 100 years of age is that, on an individual level, the

(9) A birth cohort includes all of the individuals born in the course of the reference year.

psychological and cognitive problems become more aggravated with age. However, they remained rather stable for the whole group under observation, because the survivors were those who were the strongest both physically and mentally (Christensen *et al.*, 2008). This illustrates how a group can survive under fairly satisfactory conditions at the most advanced ages. Nonetheless, certain indicators demonstrate that the trend is not constant. The Eurohex European project has just published the latest data on life expectancy without disability or healthy life expectancy (HLE): while most countries saw an increase in HLE between 2009 and 2010, others, including the Netherlands,

saw either stagnation or regression—in spite of an increase in longevity.

The Medical Research Council initiated a Cognitive Function and Ageing Study on the major issue of mental health and the elderly. The prevalence of dementia and cognitive impairment is highly related to age. This study should enable a comparison with studies repeated at 20-year intervals. The question is to see if the better level of education of those 65 and older can result in an improvement in their cognitive functions and slow down their mental decline. The study should also contribute to an improved ability to

## Good health and the perception thereof

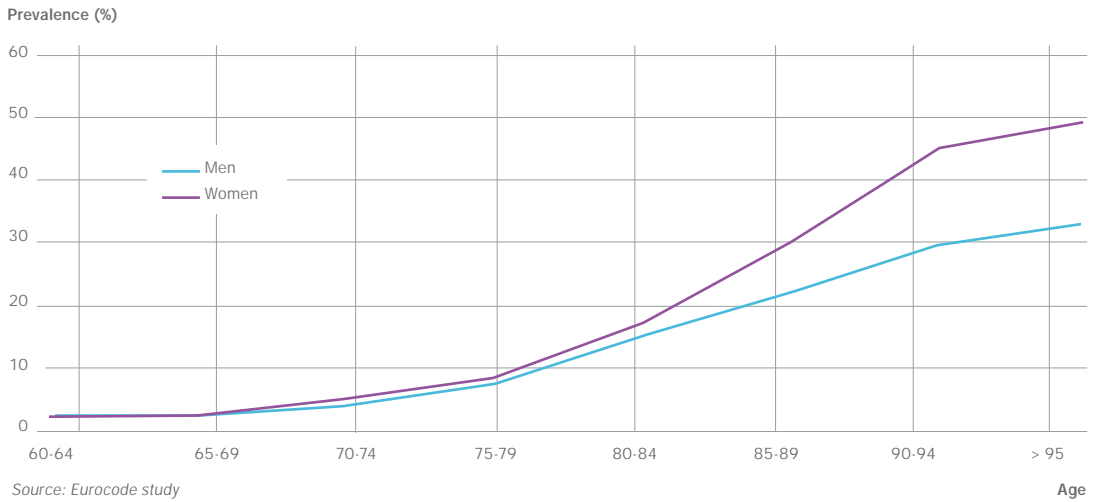
In the United Kingdom, the Newcastle 85+ study was conducted over a period of five years on more than 1,000 inhabitants of the town of Newcastle aged 85 or older. The study focused on the biological, medical and psychological factors associated with healthy ageing. The survey covered all members of the target population and involved an exhaustive assessment of their state of health.

Logically, none of the people in the study should have been spared by a health problem, and yet when they were asked to assess their own health, nearly 80% judged it to be good (34%), very good (32%) or excellent (12%). In addition, performing all of the tasks of daily living posed no problem whatsoever for one man out of four and for one woman out of six. Many of the participants 89 years of age or older were independent and enjoyed a good quality of life. The researchers<sup>(10)</sup> observed that even if many of the participants suffered from four or five diseases/conditions duly diagnosed by a doctor, most of them were living independently and remained socially engaged. This was the sign of successful ageing, although not exempt from disabilities. This study, which has the rare merit of taking into account the viewpoints of the elderly people being studied, has introduced a particularly relevant set of questions on the very notion of good health for people in this age cohort.

(10) Including Professors Thomas Kirkwood and Carol Jagger of the University of Newcastle, who presented this study at one of the first Longevity Forums held in March of 2011, in Paris.



### Prevalence of dementia by age in Europe in 2006



assess the evolving costs of disability. Indeed, this is one of the objectives of the program known as MAP 2030 (Modelling Ageing Population to 2030), a vast multidisciplinary initiative on trends in needs and resources for the elderly in the United Kingdom.

Dementia is a well-known risk factor and is thought to be the principal cause of severe/heavy dependency (Helmer, 2006). According to PAQUID data, 18% of those over the age of 75 suffered from dementia in 1999 (13% of males and 20% of females). This prevalence increases sharply with age, reaching more than 50% for women who are over the age of 90. Alzheimer's accounts for 80% of these cases of dementia (INSERM, 2008). According to a Finnish study on the prevalence of dementia by degree of severity (Kuopio 75+ study, 2003), 8% of those over 75 in the sample suffered from mild dementia, 8.3% from moderate dementia, and 6.3% from severe dementia.



### Close-up on Alzheimer's

Understanding Alzheimer's and making progress in treating various forms of dementia are major challenges. In fact, the incidence of dementia increases significantly with age. Some epidemiologists think it doubles every five years after the age of 65. Moreover, dementias can be particularly costly to treat, even during the intermediary stages. In addition to assistance and care, they may entail costs that are common to most LTC cases—i.e., quasi-permanent monitoring to prevent patients from getting lost or running away, for example.

In 2010, some 36 million individuals in the world had Alzheimer's, and WHO projections put the figure at nearly 66 million in 2030 and at more than 115 million by 2050.

To date, there is no truly effective treatment in spite of a stepped-up research effort. Research focuses on creating either a preventive vaccine (which would prevent the illness from appearing) or a curative one (which would enable sufferers to remain at an early stage or even get better). The emergence of new types of treatment could have a significant impact on the cost of LTC. For example, curative treatments or treatments that prevent the illness from occurring would lead to a significant decline in the costs related to all kinds of dementia, including Alzheimer's. Conversely, a blocker type treatment that would keep the illness at an early stage and that would extend the life span of ill patients in a state of less autonomy would lead to higher costs.

Education, which is a factor that protects mental health at an advanced age, does not prevent the brain lesions associated with Alzheimer's. But it does delay the appearance of the clinical symptoms of Alzheimer's, and this is very important. In addition, recent studies suggest that for every additional year in the workforce, the appearance of Alzheimer's is delayed by more than 0.1 year. This fundamental factor, observed in a small sample (M. K Lupton *et al.*, 2010), requires confirmation.

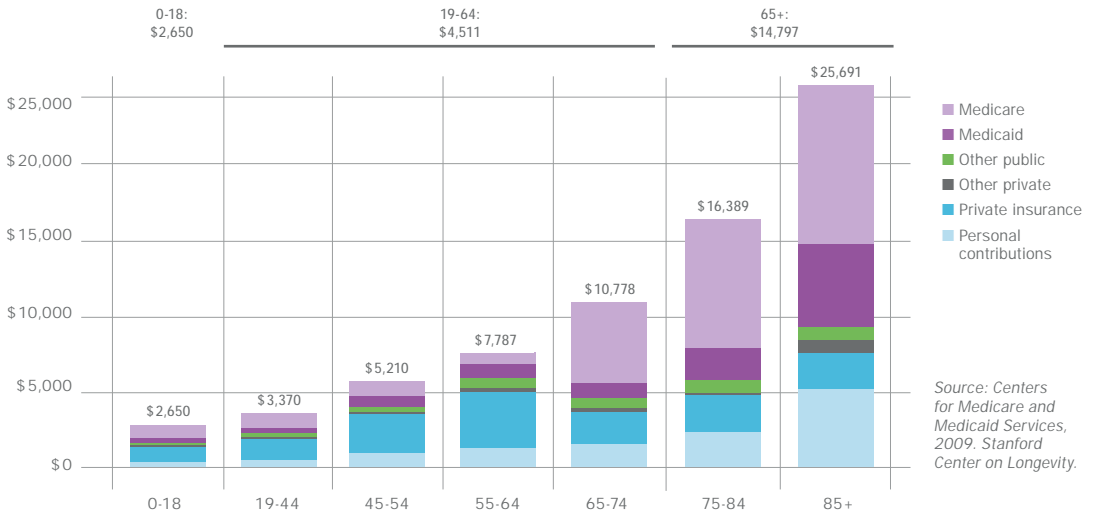
Lastly, many researchers affirm, on the basis of epidemiological studies, that maintaining social ties is an important factor in preventing dementias.

# 2. DEMOGRAPHICS AND COSTS

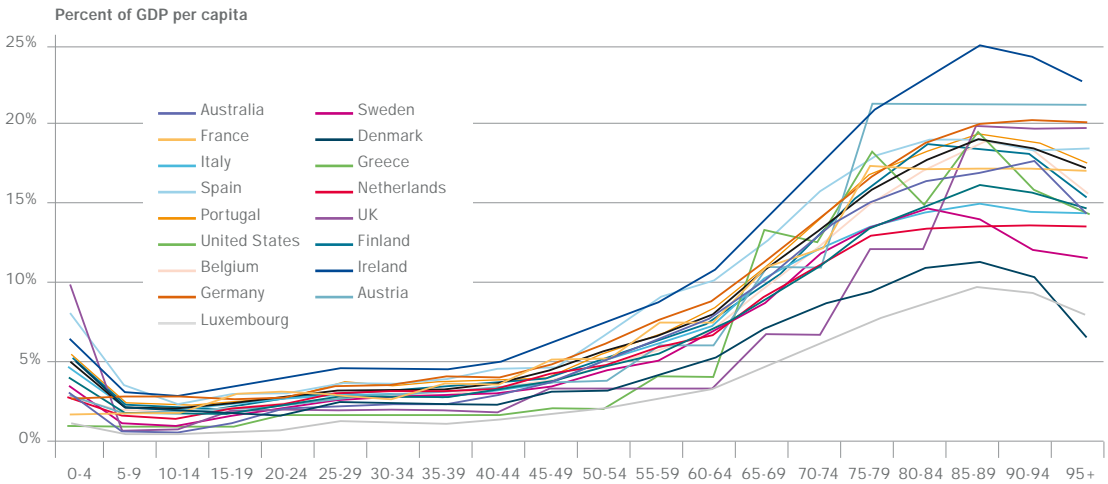
Dependency-related cost trends are influenced by several factors: the number of dependent individuals, the level of their dependency, and the cost of care and medical assistance. In addition, the possible decline in the level of informal assistance—i.e., non-professional care provided by loved ones—can lead to greater recourse to the formal sector, which would probably lead to price tensions.

The graph from the Stanford Center on Longevity that appears below illustrates—in snapshot fashion—growth in the average amount spent on healthcare by age group in the United States. As the graph shows, a US citizen over the age of 85 spends on average 10 times more than a US citizen under the age of 18.

Average healthcare expenditures by age cohort, United States, 2004



Public Health Care Expenditure by Age Groups\*



\* Expenditure per capita in each age group divided GDP per capita. Source: ENPRI-AGIR 2005, national authorities and Secretarial calculations.

The graph reproduced above illustrates the relative weight of public healthcare expenditure versus national resources in OECD countries, by population age group. The bundle of curves highlights a clear correlation, with a general increase that is particularly strong between the ages of 60 and 90.

2.1 – Adverse demographic ratios

Most countries are currently experiencing the phenomenon of demographic ageing, which will lead to a change in demographic ratios—the percentage of the population that is working age will decline compared to the percentage of people over the age of 65.

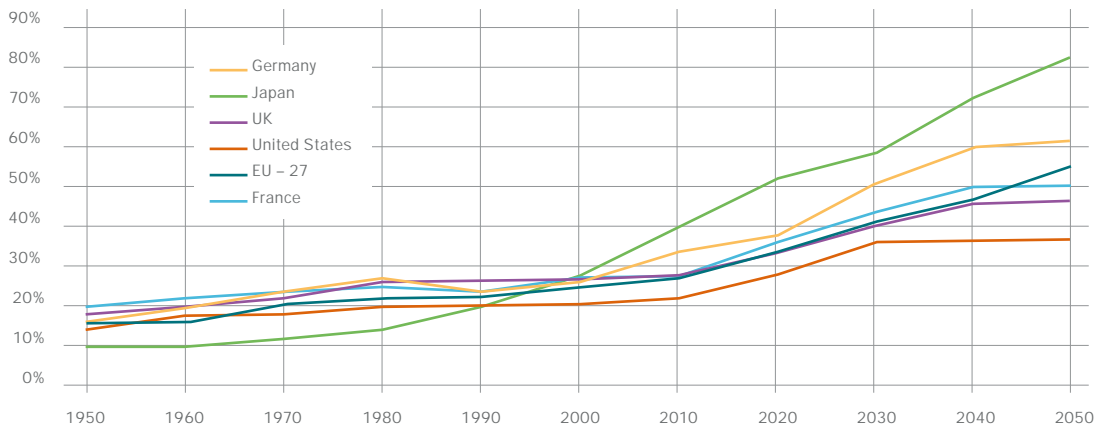
As we have already indicated, there is no consensus among experts as to whether the gains in life expectancy will be healthy or unhealthy years. But whatever the scenario adopted, which differs from one country to the next, demographic ageing will most likely be accompanied by an increase in the number of dependent persons. This is the most likely consequence of the increase in the number of people who are very old.

European Union indicators show that longer life expectancy does not necessarily spell a longer healthy life expectancy. In the graph reprinted below, the countries of Northern Europe seem to be favored, while those in Eastern Europe present shorter lifespans and fewer healthy years. However, similar gaps can sometimes appear between regions located in the same country, or even between neighborhoods in the same city<sup>(11)</sup>.

(11) On the question of life expectancy without disability, see also the data from the 27 EU countries published by INED in April 2012.



Ratio of persons aged 65 to persons 20-64



Source: OECD.

Number of years in good health

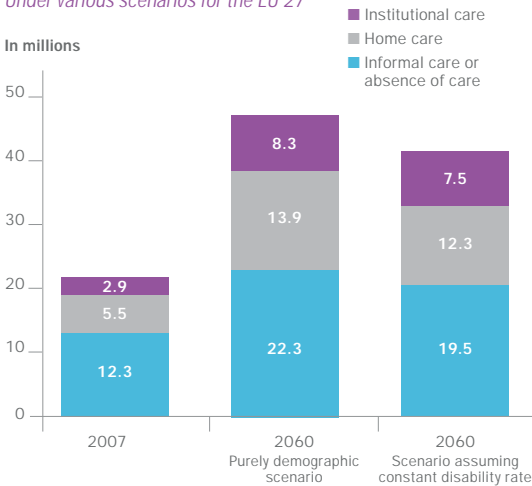


Source: Health at a glance 2009.

■ Life expectancy at 65 ■ Number of years of good health

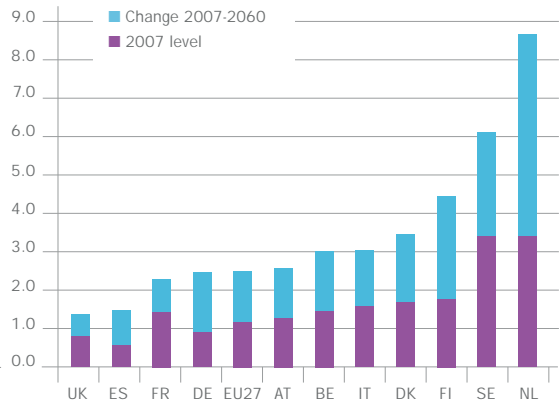
## Projected number of dependent persons by type of care

Under various scenarios for the EU 27



## Public expenditure on LTC, % of GDP

Purely demographic scenario



Source: European Commission, EU (2009)

### 2.2 – The public cost of dependency

The projections produced by the European Union for 2060 show a significant increase in the number of individuals who will require assistance to deal with loss of autonomy. These projections also suggest an increase in the percentage of public expenditure allocated to loss of autonomy/long-term care needs. In countries that include Sweden and the Netherlands, this cost could reach levels above 5% of GDP.

Naturally, the results of our projections depend on the scenario we begin with. The assumption that there will be an increase in life expectancy translating into an increase in the duration of the state of dependency will produce a high result. This result will be reduced under a scenario assuming constant disability.

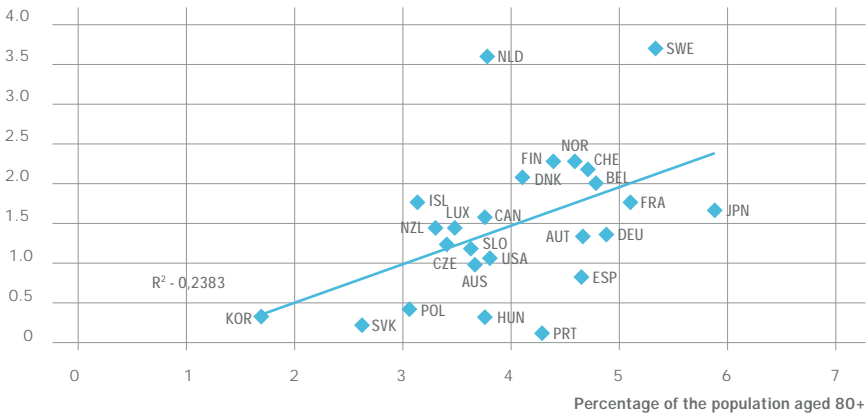
An OECD report published in 2011 shows that the differences in dependency-related expenditure between countries are not highly correlated to the percentage of the population above the age of 80.

Adjusted for comparability based on the number of people over the age of 80, Australia—for example—spends 2.5 times less on long-term care than the Netherlands. Numerous differences exist from one country to the next in terms of the way social security is organized and even accounted for. The Netherlands offers rather generous long-term care coverage. One gets a sense of the catch-up that would be necessary in terms of public expenditure if coverage tended toward homogenization.

A study done by Ziegler (2010) in Germany, which sought to project the number of cases of dementia around year 2050, illustrates how difficult it is to make such projections, including in terms of effective numbers: if certain assumptions are used, the number of cases of dementia in people over 60 could nearly double.

Percentage of population aged 80+ and LTC-related expenditures (as a % of GDP) in OECD countries in 2008 (or most recent year for which data are available\*)

LTC expenditures (as a % of GDP)



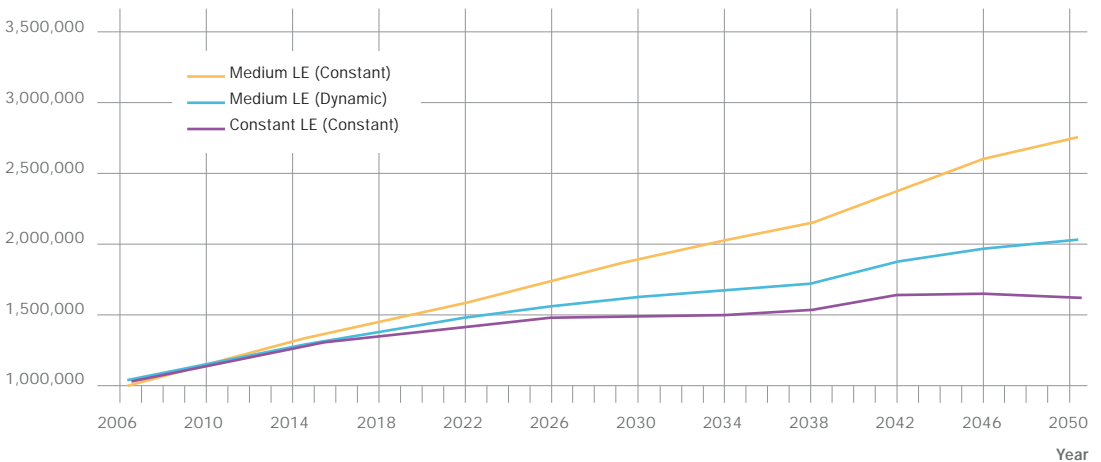
\* Note: 2007 for Denmark and Switzerland, 2006 for Portugal and Slovakia, 2005 and Austria and Luxembourg  
 Data include public and private expenditures  
 Social security expenditures related to LTC are not calculated for the following countries (which include only healthcare expenditures in general): Austria, Belgium, Canada, Denmark, Hungary, Iceland, Norway, Portugal, Switzerland and the US.

Source: OECD Social and Demographic Database, 2010, and OECD Health Data 2010.

Increase in the number of persons over 60 suffering from dementia

Under various scenarios - Germany

Percentage of population suffering from dementia



Source: Uta Ziegler, 2010.



### 2.3 – Informal caregiving

Informal caregiving, which can be defined as non-professional assistance provided by loved ones, is a resource that could become increasingly scarce.

Today, the amount of informal caregiving is considerable. This is even true in countries such as Sweden, where a high level of public coverage is provided. A Swedish study published in 2002<sup>(12)</sup> estimated that 70% of the care given to people over the age of 75 in Sweden in 2000 was informal care.

This high level of informal caregiving is not directly captured in public finances. But this does not mean it does not have a cost, since it causes some caregivers to cut back on their own professional activity or even stop working in some cases. Some studies have suggested that for caregivers with a low burden<sup>(13)</sup> the impact of informal caregiving can even be positive (the feeling of being useful, bonding with the person receiving care). But the vast majority of the work done on the subject

has shown, particularly for caregivers whose burden is heavy, a very negative impact on their quality of life as well as on their own health. Indeed, the chronic stress that they may be exposed to can put them at higher risk for cardiovascular disease and depression. Some studies even mention a significantly higher rate of mortality. The fact of having provided informal care to an Alzheimer's patient also seems to engender a higher risk of suffering from Alzheimer's in turn.

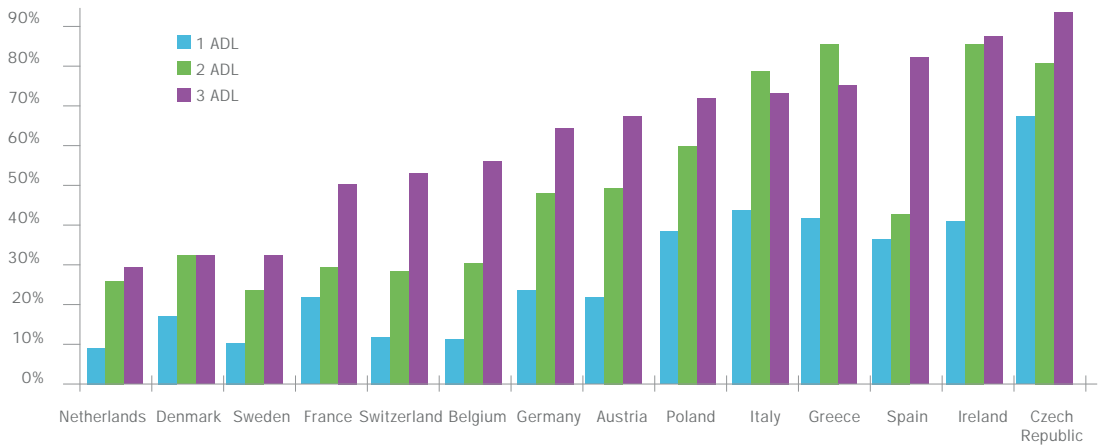
(12) The Shifting Balance of Long-Term Care in Sweden, Sundström *et al.*

(13) The level of burden is evaluated using a questionnaire on the frequency and intensity of the consequences of providing assistance for the caregiver: psychological, physical and social.



## Limitations in terms of daily acts and informal care received

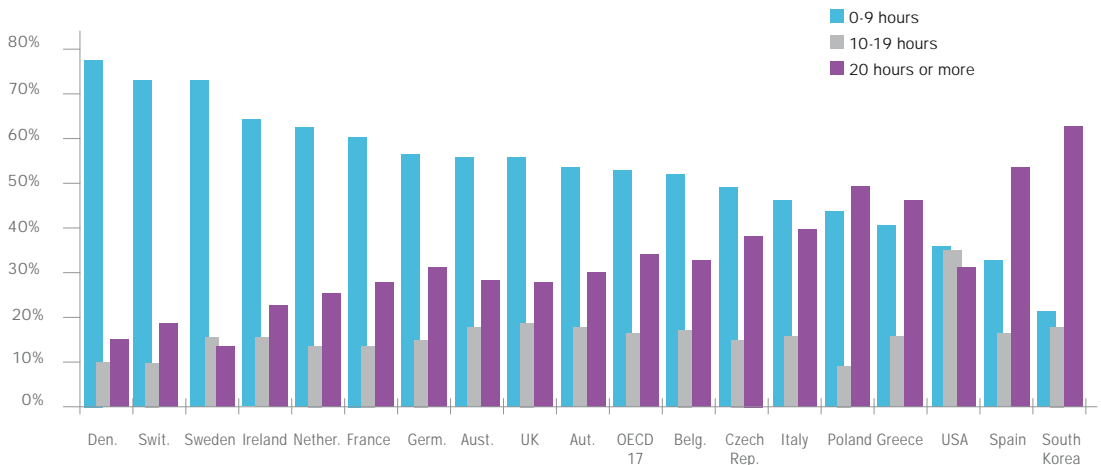
Percentage of the population receiving informal care by number of ADL lost



Note: ADL = Activities of Daily Living  
 Sample: Persons aged 50 and +, 2004-2006  
 Source: OECD estimates based on SHARE study.

## Number of hours of informal care provided

Percentage of caregivers – by number of hours of care provided per week



Note: sample of persons aged 50 and + (45 and + for South Korea).  
 Years studied: 2005-2007 for Australia, 1991-2007 for the UK.  
 2004-2006 for other European countries, 2005 for South Korea and 1996-2006 for the US.

Source: OECD estimates from HILDA studies (Australia), BHPS (UK), SHARE (other European countries), KLoSA (South Korea) and HRS (US).

include Sweden  
and the Netherlands  
the cost could re  
levels above 5%  
of GDP



more than a US citizen  
85 spends on average  
A citizen over the

ZIEGLER  
(2010) IN GERMANY,  
THE NUMBER OF CASES  
OF DEMENTIA IN  
PEOPLE OVER 60 COULD  
NEARLY DOUBLE.

CONSEQU  
EMOGRAM  
G HAVE A  
FACT IMPAC  
NOW LTC/  
DEPENDENCE

# 3. RESPONSES TO THE RISK

A recent report published by the OECD on providing and paying for long-term care<sup>(14)</sup> places public schemes for long-term care into three broad categories. The first is a universal system of LTC insurance within a single system, with three main sub-models: tax-funded models, public LTC insurance models, and personal and nursing care provided through the health system. The second model focuses on the most disadvantaged (means-tested systems) while the third is a mix of public and private coverage.

As for private LTC, two major types of products have been developed by insurers operating in various markets: reimbursement type products, which pay a fixed benefit once the insured requires long-term care, and indemnity model products, which reimburse the cost of needed care.

## 3.1 – Varied level of coverage

### France

France already has considerable experience, in terms of both public provision and the private market.

#### Public coverage with funding issues

The French system (*Allocation Personnalisée d'Autonomie* or APA) is managed by pay-as-you-go and jointly funded by the central government and the French departments. The level of dependency is assessed by a team of trained health and welfare professionals using the AGGIR grid. The amount payable is determined on the basis of several factors (level of dependency expressed as GIR 1 to 4, a personalized benefit plan granted and stated as a percentage of the maximum amount granted by GIR, care provided at home or in an institution). Then, an income-based co-payment ticket system is applied. For GIR 1 (the most severe level of dependency) the maximum amount for homecare is theoretically 1,235 euros (at year-end 2010), and the

average amount paid after applying the co-pay ticket is around 820 euros.

The number of individuals receiving APA benefits is constantly growing. As of September 30, 2010, there were 1,185,000 individuals, an increase of 3.2% in one year.

This system, which is both costly from a public finance perspective and inadequate for those who require LTC, is in need of reform. Although various avenues have been explored, due to the upcoming presidential election, no reform will take place before 2013 at the earliest.

#### A well-developed private market with a long history

France has one of the most developed LTC insurance markets. The first LTC insurance policy was offered in 1986, and many private insurers have an LTC product range. Both basic policies and supplemental coverage are offered, and LTC coverage is offered under individual and group policies. The current market is estimated to cover 5.5 million individuals, which is a penetration rate of nearly 10%, making France the world's number one market for non-mandatory LTC insurance coverage.

After a period of strong growth between 2000 and 2005, the French market entered into a marked slowdown as many players waited for the passage of a new law on covering LTC needs.

The typical French product is an annuity product that covers severe long-term care needs.

Increasingly, insurers are offering partial LTC insurance, for which there is greater demand. But this risk is difficult to estimate and hence to price. The French market is also moving in the direction of extending the range of services offered, prevention—which, among other things, helps to maintain a link with the insured over long-term policies—and assistance for caregivers.

(14) "Help Wanted? Providing and paying for Long-Term Care" (OECD 2011).

## Germany

### A lopsided pay-as-you-go system with a very dynamic private market in supplemental coverage

The German LTC insurance system, which is known as Pflegeversicherung, went into effect in 1995.

The mandatory system is both public and private in Germany. The mandatory component is based on a social security regime that covers about 90% of the population and a private plan that can be paid into by people whose income is above a certain threshold, and which covers the remaining 10% of the population. Beyond this basic system, there is an optional private supplemental insurance market. A growing portion of LTC insurance is managed by the private sector with the development of supplemental coverage. As for the mandatory public portion, the system is pay-as-you-go via taxes on both wages and pensions. This contribution was initially set at 1.70% of income, but the German government decided to raise the rate, initially to 1.95% (with an additional 0.25% levied on people without children), in order to reduce the system's deficit. The higher rate went into effect in 2008, and was intended to ensure system balance until 2014. But a second increase is slated for 2013 (another 0.1 point), along with an adjustment in benefits. The mandatory private component is financed through premiums, calculated on the basis of age-related risk. The private supplementary insurance market seems to be benefitting from the current situation, with a rate of growth approaching 20% in 2010 and more than 1.3 million policies written. This market is dominated by health insurers. Life insurers have won just 3% of the market, because they are legally required to guarantee their premiums, whereas health insurers can adjust theirs.

## United States

Public coverage is primarily provided through Medicaid, for the elderly, and through Medicare, for the most disadvantaged. Some economists have pointed out

the major flaws in this system of coverage, which offers eligibility for the public system to individuals who have the means to assume the cost of LTC. The criteria used to assess wealth/means are often inadequate. In 2011, a reform project<sup>(15)</sup> was drafted, calling for a public-private partnership with incentives for the development of employer-sponsored group plans. In the end, this project was rejected.

The private market in the US has two facets: it is one of the most developed markets in the world (8 million policies according to the AALTCI) and one of the oldest, but also one in which insurers have sustained heavy losses and policyholders have faced substantial increases in premiums. Many major players have pulled out of the market. Indeed, the conventional LTC insurance product sold in the US is a reimbursement product—particularly complex to price and manage, since it requires an assessment of changes in the price of medical care and retirement living. For these products, insurers in the US have historically underestimated morbidity and overestimated mortality and lapse rates, leading to the aforementioned losses. Currently, insurers are trying to innovate in this market: it has become possible to opt for an annuity type product, and insurers are also trying to develop combo products, which combine life insurance with LTC coverage.

## Singapore

With its ElderShield Plan, rolled out in 2002, Singapore is often cited as a good example of a durable public-private partnership. This plan, which was developed from specifications elaborated by the Ministry of Health and carried by insurers, automatically enrolls all Singaporeans with a Medisave account (85% of the population) the year they turn 40, and anyone can opt out of the plan. The advantages of automatic enrollment

(15) Long Term Care Class Act Program.



(in particular the absence of medical screening) disappear for those who initially opt out and then want to opt back in. The first year, automatic enrollment was extended to all Singaporeans between the ages of 40 and 65, and special measures were passed to enable those over the age of 65 to receive LTC insurance. The opt-out rate for the plan, which reached 40% the first year, has since stabilized at below 10%. The system is assessed every five years to ensure that any needed corrective measures are taken. Three insurers offer the standardized product, an annuity that pays around 400 Singaporean dollars<sup>(16)</sup> over six years in the event that the need for LTC materializes. Initially, the annuity payments were 300 dollars a month over five years, but the coverage was improved when the system was assessed in 2007. Insurers propose certain optional features that improve on the basis coverage provided. The LTC needs covered under the plan include severe dependency and premiums are priced on the basis of the gender and age of enrolment in the plan. There is no means testing. Insureds are assigned randomly to different insurers. They can switch if they want, but this rarely occurs.

### Japan

In Japan, since the Gold Plan was implemented in 1989, followed by the Long Term Insurance Law in 2000, long-term care is covered under a universal insurance system that covers LTC for those over the age of 65, as well as age-related illnesses and diseases—such as Alzheimer's—as of the age of 40. Local governments manage this system of coverage and care. After assessment, applicants are assigned to a health plan. The system is based on the reimbursement of costs incurred under the health plan, and may include prevention, homecare and

short- or long-term housing. A 10% co-pay/user fee has been in place since 2000. The program is half financed through contributions paid by insureds and half financed by public organizations. This system is already costly for public finances, and is expected to rise considerably in the near future.

The market for private LTC insurance has existed since 1985. Products that include primary coverage of LTC are currently gaining ground.

### South Korea

South Korea initially developed a market for private LTC insurance. In 2003, Samsung Life launched an LTC product inspired by the French model, and it was fairly successful (200,000 policies were sold in 2006). But in 2008, the South Korean government implemented a system of public LTC insurance, and that development curtailed the private market considerably. The new system covers people over the age of 65 who develop LTC needs as well as younger people who suffer from geriatric diseases. It is financed through contributions to the healthcare system paid by everyone who is of working age. In the event of dependency, the LTC system offers services and financial aid.

### Sweden

Sweden offers generous LTC coverage for anyone suffering from functional, cognitive or social limitations. The dependent individual has the final say as to whether he or she will remain at home or enter assisted living or a nursing home, especially since around 2000. Before then, and since the 1970s, Sweden has invested massively in nursing home care for dependent elders. The assessment is made on the basis of the needs expressed by the individual, and the system is managed at the local level. It takes the form of home services and care or care in various institutional settings. There is no monetary aid offered. The system is mainly financed through taxes, with a very limited co-pay/user charge (5% of costs in 1997).

(16) 233 euros as of July 12, 2011: for the sake of comparison, the average monthly wage of a janitor was 525 euros in June 2010 according to the Singapore Department of Statistics.

The principal challenge is the high public finance cost of this kind and level of coverage.

### *Spain*

The LTC insurance law went into effect on January 1, 2007, and is gradually being rolled out. The most severe LTC needs have been given top priority, followed by more moderate forms of LTC needs. The law guarantees benefits in the form of services for individuals that meet certain means-based criteria (income and assets), and in the form of cash allocations for any individual who is in need of healthcare. In light of Spain's demographics, the private market would appear to have development potential, but it remains limited to date.

### *United Kingdom*

The issue of covering LTC needs is a frequent topic of debate. For now, public coverage is considered to be fragmented and incomplete. It is managed by local governments and generally benefits the most disadvantaged. There is also a non-means based form of universal assistance for dependent individuals over the age of 65, but it is rather expensive (up to 288 £ per month). The private market is practically non-existent – the last insurer to offer primary LTC coverage withdrew from the market in 2010. Earlier attempts have not panned out, not just because the products proposed have proven unsuitable, but also due to the strong presence of the critical illness market, which in some ways competes with the LTC market.

The issue of LTC was recently eclipsed by the shrill debate on retirement and pension funds. However, numerous reports have been issued suggesting that this issue is becoming more central. The most frequently cited options are a public-private partnership, the development of private insurance or the creation of mandatory LTC insurance.

### *Other countries*

In several parts of the world—China and Eastern Europe, for example—an uptick in the demographic ageing process is projected over the next few decades. The need for LTC on the part of older people will certainly become a key challenge.

Other countries that are already seeing a high level of demographic ageing seem to show a significant margin for development. Italy, where the private market seems to have begun to progress, is one example. Similarly, the Belgian market shows potential for the development of LTC products. The rollout of public coverage for the Flanders/Brussels regions demonstrates growing awareness, though the result so far is largely inadequate to cover the needs of the population. As for a country such as Switzerland, where the society as a whole covers the needs of the least fortunate relatively well, it is the most affluent members of society who appear to be most directly interested in developing LTC products.

### 3.2 – Synoptic table of the major markets

#### Public systems

| Country   | Plan                       | Features   | Drawbacks/Advantages  | Definition of dependency/LTC                                  |
|-----------|----------------------------|--|---|---|
| France    | APA                        | - Reform underway  | - Coverage is inadequate<br>- Major expense for some departments                          | - AGGIR grid  |
| Germany   | Pflegeversicherung         | - Mandatory insurance<br>- Financed via a 1.95% levy on income (2.10% for singles)                   | - Major funding issues<br>- Running a deficit four years after creation                   | - 3 levels of dependency based on the number of hours of care |
| Japan     | Golden Plan<br>Kaigo-Hoken | - Reimbursements   | - Funding problems  | - Six levels of dependency                                    |
| USA       | Medicaid<br>Medicare       | - Resource constraints for Medicaid<br>- Incentive to purchase private policies                      | - Coverage is inadequate<br>- Non-negligible cost<br>- Poor resource allocation           | - Based on care   |
| Singapore | ElderShield Scheme         | - Automatic enrolment with an opt-out facility<br>- Lump-sum benefit<br>- Public-private partnership | - Durable system<br>- Extensive coverage of the population                                | - 3 ADL out of 6  |
| Spain     | Gradual rollout            | - Incentive to purchase private policies to cover cases of severe LTC needs                          | - Coverage is inadequate  | - 3 levels<br>- 2 sub-levels                                  |
| Belgium   | Flanders and Brussels Plan | - Cash benefits  | - Problems related to definition<br>- Contributions doubled three years after plan launch | - Grid with 3 sub-grids and scores (BEL)                      |

#### Private markets

| Country | Market size   | Market specifics / Product features   |
|---------|---|---|
| France  | 5.5 million people covered<br>1.6 million – Insurers<br>3.6 million – Mutuels<br>300 000 – Instituts de Prévoyance (2010) | - First product launched in 1986<br>- Annuities<br>- Mostly severe LTC coverage<br>- Substantial market growth between 2000 and 2005 (20%), stagnating since 2005<br>- For policies taken out with insurance companies, the average age at the time of purchase is 60<br>- In 2008, four companies had 75% of the market: CNP, Groupama, AG2R and Predica<br>- Bancassurance is very present in this market (50%) |
| USA     | Market estimated to be 8 million (2010)   | - Reimbursement products. Market has sustained major losses (due to pricing problems on many products)<br>- Private policies covering loss of 2 ADL/6 for 90 days<br>- Many players have withdrawn from the market  |
| Germany | 1.3 million supplementary LTC policies, 8 million people covered by the mandatory private system (2010)                   | - Mostly annuity type products. Some reimbursement based products have been sold<br>- 97% health insurers, 3% life insurers<br>- Children are automatically covered through their parents' policies<br>- No age restrictions – all LTC needs covered at all times   |
| Japan   | Market estimated to be around 2 million policies in 2000  | - Primary LTC coverage or as a supplement to a health insurance policy<br>- Mostly annuity type products<br>- Market experienced rapid growth in the early 1990s, stagnating since 2000   |

### 3.3 – Prevention and gerontechnology

Other than medical breakthroughs, preventing LTC needs from developing is the main arena for promising future action. This focus enables us to push back the age at which individuals enter the realm of dependency, and in some cases even prevent loss of autonomy. Research in this field, which is currently booming, focuses on promoting virtuous behaviors such as healthy eating, regular physical and intellectual activity, medical care, healthy lifestyles, etc. With respect to both basic and supplementary insurance, the healthcare and medical systems in a growing number of ageing national communities face non-negligible challenges.

It seems that eating right, getting enough exercise and maintaining a healthy social life can help people age better. However, there is neither certainty nor consensus as to the exact nature of this relationship. Data derived from observing very old people remain rather limited. We don't know, for example, whether adopting these good practices late in life is highly effective, and this is a critical practical question that needs to be answered so that the most appropriate methods of intervention can be developed and carried out.

Most illnesses and diseases related to ageing present modifiable risk factors, meaning that they are, on the face of it, amenable to prevention. Although not infallible, the notion that "it is never too early or too late"<sup>(17)</sup> is probably a good guideline for action. As the HYVET<sup>(18)</sup> survey demonstrated, it is possible to reduce the rate of mortality by 40% and reduce the incidence of strokes (CVA) by 30% by treating people over 80 years of age for high blood pressure. Current and future medical breakthroughs will certainly promote this type of prevention.

Adopting good practices is essentially a question of lifestyle. The ability to adopt an appropriate lifestyle depends—and this is the heart of the matter—on a number of factors, some of them socio-economic.

It also depends on more subjective factors, such as the sensitivity and receptivity of at-risk individuals. It is therefore essential to ensure that they receive relevant preventive advice delivered in ways that are adapted to their specific situations. This is especially true when it comes to communicating good practices against obesity and inactivity, which are major emerging factors in the LTC risk.

Maintaining daily activity reduces mortality and improves cognitive health. It turns out that preventing cognitive deficiency is particularly challenging. As indicated, education seems to be a protective factor for mental health in older people that can delay the onset of the clinical symptoms associated with Alzheimer's disease.

The concept of cognitive reserve holds that practicing physical and intellectual activities can make people more resilient in the face of mental illness. It would appear that these activities can protect them against the development of certain cognitive difficulties, Alzheimer's and other forms of dementia. Leisure or recreational activities can also decrease the prevalence and incidence of Alzheimer's. Similarly, an active social life can reduce mortality and lower the risk of the appearance of symptoms.

Medical research has also considered the effects of professional activity. It has been suggested that postponing retirement could have a positive effect on health. This, in any case, is what a combined analysis of two important studies seems to suggest. The first is the Health and Retirement study conducted in the United States between 1998 and 2006, and the other is the SHARE<sup>(19)</sup> study carried out in 14 European

(17) The expression has been borrowed from Professor Françoise Forette, as formulated during the Global Forum for Longevity organized by the AXA Research Fund in March 2011.

(18) The findings of this important clinical trial, conducted on nearly 4,000 patients worldwide, were published in 2008.

(19) Survey of Health, Ageing and Retirement in Europe.

countries. The findings observed in Europe are comparable to those observed in the United States.

The concept of “fragile” elderly person has been developed to promote a better understanding of the states of pre-dependency and factors that influence the loss of autonomy. First of all, it is important to bear in mind that need for LTC is generally the result of pathology (cardiac, respiratory, joint, CVA, cancer but also neurological disorders—dementia or Parkinson’s, even perhaps depression). It can also be more or less directly caused by an accident. Epidemiologists are currently trying to gain a better understanding of the entire set of mechanisms involved. It is thought that around 10% of the very elderly present with the fragility syndrome, which is a physiological state of increased vulnerability to stress that causes people to become dependent in stressful situations. A fall that causes a femoral neck (hip) fracture is a classic trigger. Victims of hip fractures, often very old and weak, must receive special preventive treatment as a matter of priority.

Lastly, focusing research on the right subjects is a judicious prerequisite to preventive efforts. For example, it appears that a musculoskeletal disease such as arthritis, which afflicts more than half of all people over the age of 85, presents a high risk of disability. Unfortunately, little research investment is being made in the study of this type of disease.

Distinct from and complementary to prevention, gerontechnology is another area that holds out great hope for the future. Here, the focus is not on delaying or preventing loss of autonomy from occurring, but rather on providing daily support and improvements once this loss of autonomy occurs. Gerontechnology encompasses various technologies, including remote or telemedicine, geo-localization, robotics, cognitive stimulation, domotics and fall sensors. It constitutes an enormous potential source of innovation, and could enable an increasingly large number of elders to live at home for as long as possible.

## AXA Research Fund

The Fund was created to step up the pace of the scientific progress and discoveries that help us to understand environmental, life and socioeconomic risks. In 2011, more than 80 new academic teams joined a scientific community that already counts 290 teams of researchers hailing from 47 different countries. The support that the Fund delivers, with no strings attached, to support academic research is unique in Europe.

In March 2011, the AXA Research Fund hosted the first ever Global Forum for Longevity, a public colloquium in which some fifteen scientists of the first rank participated. Professor Carol Jagger, who is the current holder of the AXA Longevity and Healthy Ageing Chair at the University of Newcastle, was among them. She presented the Newcastle 85+ study mentioned in section 1.2, in which she participated.

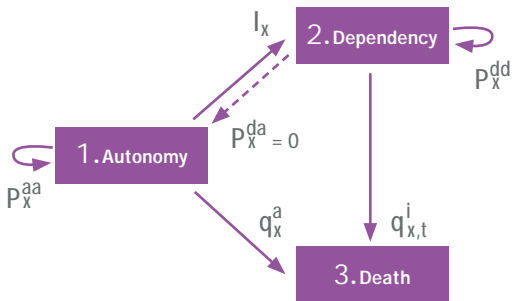
Several research projects devoted to the LTC risk are currently being prepared with the financial support of the Fund.

# 4. MODELING OF THE RISK

## 4.1 – Modeling long-term care is based on multiple state models

The most complete modeling is traditional and is the same as that used for other life insurance products. It consists of estimating, for a given individual, the probability of healthy survival and then the probability of becoming dependent (requiring long-term care), and finally the probable duration of benefit payment once the risk is recognized and demonstrated.

This entails the use of so-called multiple state models, which are schematized here. An individual, at any given time, can only be in one of the three states depicted: autonomous (independent), dependent or deceased. The idea is basically to estimate the probability of remaining in a given state and the probability of passing from one state to another.



\* Conditions of LTC coverage often contain an irreversibility clause; this is why the probability of passing from dependency to autonomy (Independence) is given a value of zero in the diagram above.

These laws of transition are estimated based on age, sex and even level of dependency if the product happens to cover several. The most sophisticated models, referred to as semi-Markovian, also add another dimension by making the probabilities of going from one state to another a function of the time spent in the preceding state: the probability of dying during the first year of dependency is higher than in the years

that follow, in particular for individuals who are under the age of 60.

As with any insurance product, the quality and the relevance of the data used to construct the transition laws are critical factors in modeling. In general, insurance data are better than public surveys, which do not necessarily use the same definition of the risk and which are often based on self-disclosures—less robust by nature. Data from the insurance portfolio offer the advantage of specifically and precisely identifying policy trends and developments. Since the first LTC policies were introduced in the 1980s, insurance carriers continue to acquire experience from year to year. This is a long-term risk, and twenty or even thirty years can pass between the time the policy is purchased and the ensuing claim or death. Hence, experience still remains rather confined to the highest ages, in particular for the mortality of dependent insureds. In addition, by designing simple products, the optimization of available data is guaranteed. In fact, highly segmented products with a broad array of options have not achieved the volume required to generate statistically significant indications. For the emerging markets, insurance carriers have a tendency to look to the experience observed in the more mature markets.

## 4.2 – The risks insurance

The consequences of demographic aging have a direct impact on how LTC/dependence is modeled. The uncertainties related to longer healthy life expectancy and to lower rates of mortality remain major factors. There is no consensus with respect to underlying trends or how they should be modeled. Pricing impacts are not negligible and turn out to be quite variable depending on the various possible future trend scenarios: compression, stability or extension of the morbidity period. In the face of these long-term commitments, insurers in fact supplement their experience

## AXA's Group Risk Management (GRM)

The GRM, which made a substantial contribution to the preparation of this notebook, has three fundamental missions:

- Create a secure risk frame by promoting decision-making that favors better risk selection. To this end, the GRM has developed a series of standards, such as the PAP (Product Approval Process) applied to every new product prior to its market clearance.
- Protect the Group over the very long term by testing its ability to overcome major crises of all types and to resist rare and extreme conditions that have multiple impacts.
- Develop a risk culture within the Group through training and communications aimed at raising operational awareness of the importance of good risk management.

In terms of the LTC risk, the GRM works closely with entities to ensure that the products launched are robust.

with a margin of safety, often established on the basis of incidence and mortality sensitivity analyses.

In addition to biometric risks, there are other insurance related risks that must be integrated into the model-building:

- The policy lapse risk<sup>(20)</sup>: For a long-term care product, overestimating lapse rates leads to an underestimation of prices.
- The random element of the cost of benefits must be taken into account in the case of products that pay indemnities. Modeling must therefore be supplemented by assumptions concerning inflation for medical care reimbursements and anticipations on the consequences of technical advances.

These two factors have generated massive losses for numerous insurance carriers in the United States, who have overestimated lapse rates and underestimated future payouts.

(20) When the insured terminates the policy.

(21) The anti-selection risk (or adverse selection) is the result of asymmetry of information. The insured has the possibility of using to his or her advantage undisclosed information about the level of risk he or she presents, and of which only he or she is aware.

- The anti-selection risk<sup>(21)</sup>: This additional factor does not exist within a framework of mandatory universal coverage. But it does appear whenever coverage is optional and whenever membership in a plan is thus a choice. In this case, medical selection and the application of waiting periods can offer insurance carriers some protection against the problem of pre-existing conditions.

An alternative modeling method based on rates of prevalence. These are the ratios between the number of dependent persons and the total number of insureds. This approach is less robust because it tends to conceal the specific impact of each risk factor taken individually: the portfolio is projected as a whole and then a ratio is applied by generation to define the insurer's load/charge. It offers a global perception where no distinction is made between the incidence and mortality of autonomous versus dependent persons. While it is admittedly easier to implement, the method does not lend itself to adequate management. In fact, in some circumstances it can lead to an erroneous analysis and misguided decisions. This is the case, for example, if healthy life expectancy increases,

while the incidence of dependency and dependent mortality remain constant. The number of autonomous persons rises, and the number of individuals becoming dependent increases proportionately. Under this scenario, the prevalence-based approach suggests that it is possible to lower prices, while the multi-state approach reveals that it is necessary to raise prices in order to maintain a healthy underwriting balance.

Full and regular monitoring is absolutely critical if we are to enhance our knowledge and anticipate the risks for the years to come. Risk monitoring must be carried out via the various factors used to build the model: incidence and autonomous/dependent mortality rates. Acquiring these tools is a must for rapidly rolling out corrective actions when an adverse deviation is observed, so that insureds get fairly-priced coverage at all times.

#### 4.3 – Preventive actions, a major issue

The demographic changes that are linked to living longer and the demographic ageing of world populations now form a common backdrop for a number of countries. In the most favorable cases, living longer is accompanied by a reduction in the number of years spent in bad health and a concomitant increase in the number of years spent in good health.

Current research is still confronted by numerous uncertainties as to the relationship between eating habits, physical activity, mental activity, social integration, disability and longevity. What about adaptations made for very old age? Can they still have a positive impact? How can we come up with the most appropriate methods of intervention? In addition, will we—in the future—have access to medical breakthroughs, such as a vaccine to prevent the onset of Alzheimer's?

Offering coverage of the LTC risk addresses an increasingly manifest need for protection. But in most countries it is not possible for the public sector to

assume responsibility for it over the long term. Accordingly, we should also see a growing need for private insurance protection against the LTC risk.

LTC insurance requires a high degree of conceptual, pricing and management discipline. A number of insurance carriers are currently working in this area to devise solutions, many of which focus on raising awareness among people while they are young—which, among other things, makes it possible to spread the costs of protection over time—and on the development of services that are adapted to the risk.

At a time when many social security and welfare budgets are running deep deficits, the public debate tends to crystalize around how to finance coverage... and around primarily curative aspects. Covering pathologies and dependency once they have occurred turns out to be very costly. For this reason alone, it makes more sense to consider dependency from the perspective of prevention.

Above all, as we continue to address this challenge, it is important to eliminate the negative stereotypes that are still too often projected onto older people and learn how to emphasize what is positive about ageing.

In Sweden, the period of heightened dependency risk, the gap between life expectancy and healthy life expectancy, is estimated to be 10 years for men and 14.6 years for women. Sweden does better than other countries: in France, for example, the figures are around 15 years for men and around 20 years for women.

At a time when the compression of morbidity and the prevention of loss of autonomy at the end of life are major challenges for public healthcare policy in many ageing national communities, the Swedish example offers hope and should also inspire us to continue to focus on preventive actions.



## SELECTED ONLINE BIBLIOGRAPHY

### International reports

"*Help Wanted? Providing and Paying for Long-Term Care*", OCDE

[http://www.oecd.org/document/23/0,3746,en\\_2649\\_37407\\_47659479\\_1\\_1\\_1\\_37407,00.html](http://www.oecd.org/document/23/0,3746,en_2649_37407_47659479_1_1_1_37407,00.html)

"*Les défis de l'accompagnement du grand âge - Perspectives internationales*", Conseil d'Analyse Stratégique, June 2011

[http://www.strategie.gouv.fr/system/files/version3\\_rapp\\_dep\\_28juin\\_15h\\_0.pdf](http://www.strategie.gouv.fr/system/files/version3_rapp_dep_28juin_15h_0.pdf)

*The 2009 Ageing Report*, European Commission (DG ECFIN) and the Economic Policy Committee (AWG)

[http://ec.europa.eu/economy\\_finance/publications/publication14992\\_en.pdf](http://ec.europa.eu/economy_finance/publications/publication14992_en.pdf)

### Epidemiological reports

"*Trends in Disability-free Life Expectancy at age 65 in the European Union 1995-2001: a comparison of 13 EU countries*", EHEMU Technical report 2009\_5.1 June 2009

[http://www.eurohex.eu/pdf/Reports\\_2009/2009TR5\\_1\\_Trends\\_13EUMS.pdf](http://www.eurohex.eu/pdf/Reports_2009/2009TR5_1_Trends_13EUMS.pdf)

*Advanced Research on European Health Expectancies – country reports*, <http://www.eurohex.eu/index.php?option=countryreports>

[http://www.ined.fr/fichier/t\\_presse\\_fichier/51/fichier\\_fichier\\_fr\\_cp\\_du\\_17\\_04\\_2012\\_evsi\\_inserm\\_ined.pdf](http://www.ined.fr/fichier/t_presse_fichier/51/fichier_fichier_fr_cp_du_17_04_2012_evsi_inserm_ined.pdf)

*Dépendance 4 cohortes - Rapport final - November 2011*, INSERM

[http://www.cnsa.fr/IMG/pdf/\\_Projet\\_Dependance\\_4\\_cohortes\\_CNESA\\_Version\\_finale\\_nov2011\\_.pdf](http://www.cnsa.fr/IMG/pdf/_Projet_Dependance_4_cohortes_CNESA_Version_finale_nov2011_.pdf)

"*Espérances de vie, espérances de vie en santé et âges de départ à la retraite:*

*des inégalités selon la profession en France*", retraites et société, août 2010, Emmanuelle Cambois et al

[http://www.inegalites.fr/IMG/pdf/Esperances\\_de\\_vie\\_Emmanuelle\\_Cambois\\_R\\_S\\_59.pdf](http://www.inegalites.fr/IMG/pdf/Esperances_de_vie_Emmanuelle_Cambois_R_S_59.pdf)

### Dementia

*Dementia "A public health priority"*, OMS

[http://whqlibdoc.who.int/publications/2012/9789241564458\\_eng.pdf](http://whqlibdoc.who.int/publications/2012/9789241564458_eng.pdf)

*Alzheimer Report, 2007*, INSERM

<http://www.inserm.fr/mediatheque/infr-grand-public/fichiers/thematiques/sante-publique/expertises-collectives/alzheimer-enjeux-2007>

### Country perspectives on long-term care

#### France

"*Perspectives financières de la dépendance des personnes âgées à l'horizon 2025*" (the Gisserot Report), 2007

<http://www.ladocumentationfrancaise.fr/var/storage/rapports-publics/074000235/0000.pdf>

"*Rapport d'information de M. Alain Vasselle, fait au nom de la Mission commune d'information dépendance n° 447 tome I (2007-2008) - July 8, 2008*"

<http://www.senat.fr/rap/r07-447-1/r07-447-11.pdf>

"*Les personnes âgées dépendantes : rapport au Président de la République suivi des réponses des administrations et des organismes intéressés*", Cour des comptes, 2005

<http://www.ladocumentationfrancaise.fr/var/storage/rapports-publics//054000746/0000.pdf>

*INFORMATION REPORT on providing long-term care for the aged, known as the Rosso-Debord Report*,

June 2010

<http://www.assemblee-nationale.fr/13/pdf/rap-info/i2647.pdf>

*French task forces on long-term care, reports:*

Group 1: "*Société et vieillissement*"

[http://www.solidarite.gouv.fr/IMG/pdf/Rapport\\_final\\_Groupe\\_1.pdf](http://www.solidarite.gouv.fr/IMG/pdf/Rapport_final_Groupe_1.pdf)

Group 2: "*Perspectives démographiques et financières de la dépendance*"

<http://www.ladocumentationfrancaise.fr/var/storage/rapports-publics//114000333/0000.pdf>

Group 3: "*Accueil et accompagnement des personnes âgées en perte d'autonomie*"

<http://www.ladocumentationfrancaise.fr/var/storage/rapports-publics//114000334/0000.pdf>

Group 4: "*Stratégie pour la couverture de la dépendance des personnes âgées*"

<http://www.ladocumentationfrancaise.fr/var/storage/rapports-publics//114000335/0000.pdf>

## United States

*"A Report on the Actuarial, Marketing, and Legal Analyses of the CLASS Program"*,  
U.S. Department of Health and Human Services, October 2011  
<http://aspe.hhs.gov/daltcp/Reports/2011/class/index.shtml>

## Germany

*BARMER GEK Pflegereport 2010*, Rothgang *et al.*, 2010  
<http://www.barmer-gek.de/barmer/web/Portale/Presseportal/Subportal/Presseinformationen/Archiv/2010/101130-Pflegereport/PDF-Pflegereport-2010,property=Data.pdf>

*Long-term Care Insurance in Germany, Assessments, benefits, care arrangements and funding*,  
Theobald, Institute for Future Studies, 2011  
<http://www.framtidsstudier.se/wp-content/uploads/2012/03/2011-13-3rev.pdf>

## Belgium

*"The belgian long-term care system"*, Peter Willemé, Enepri research report n° 70, 2010  
<http://aei.pitt.edu/14688/1/Belgium.pdf>

## United Kingdom

*"The impact of devolution Long-term care provision in the UK"*, David Bell, January 2010  
<http://www.jrf.org.uk/sites/files/jrf/impact-of-devolution-long-term-care.pdf>

*"Securing Good Care for Older People: taking a long-term view"*,  
Wanless Report, 2006  
[http://www.kingsfund.org.uk/publications/securing\\_good.html](http://www.kingsfund.org.uk/publications/securing_good.html)

*"The Cognitive Function and Ageing Studies"*, Medical Research Council  
<http://www.mrc-bsu.cam.ac.uk/Research/CFAS.html>

## Others

*Following the Care Conference "Does Europe Care?"*  
<http://www.careconference.eu/site/node/74> (Presentations from the conference are available from the website)

*Revue Risques*, numéro spécial dépendance, 2009  
<http://www.ffsa.fr/webffsa/risques.nsf/html/listeetsommairesdetails?opendocument&arg=78#10.2>

*A Road Map for European Ageing Research*  
<http://www.futurage.group.shef.ac.uk>

*Ageing and Long-term care LSE Health*, Eurohealth volume 17 Number 2-3, 2011  
<http://www2.lse.ac.uk/LSEHealthAndSocialCare/publications/eurohealth/eurohealth.aspx>

*AXA Global Forum for Longevity – Report of the proceedings*  
<http://www.axa.com/lib/fr/library/global-forum-for-longevity/8552.aspx>

## For more information about AXA, visit [axa.com](http://axa.com)

Communications and Publication director: Direction of Communications and Corporate Responsibility – Corporate Communications & Group Risk Management – June 2012  
Design and production: W|W&CIE  
Photo credits: Benoit Paillé, Getty Images, Corbis

This document was printed by a professional Imprim'Vert - certified printer, using vegetal inks on paper made entirely from fiber originating from forests managed in a sustainable and equitable manner or controlled in a factory which is ISO 14001 and EMAS certified.







**redefining** / standards