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EDITORIAL

Insurance and Health Risks

By Christophe Courbage*

Once again, I am very pleased to introduce to you this new issue of the Health and Ageing newsletter. Not only does it offer various articles on the topic of health in relation to insurance, but it also presents the activities of the Health and Ageing research programme of The Geneva Association.

Two activities are worth stressing. The first one is the publication of a special issue of *The Geneva Papers* on health. This publication continues our series of biennial special issues on health started exactly 15 years ago. The idea of these special issues is to provide a rigorous forum for researchers to better understand the role of insurance mechanisms in financing health risks, with special emphasis on an ageing population. This special issue contributes to this understanding and concentrates on four topics that are dear to The Geneva Association Health and Ageing research programme. These are the phenomena of asymmetric information in markets for health and long-term care insurance, the financing of care for an ageing population, the characteristics of the demand for health insurance, and the impact of health insurance on health expenditures and drug prices. Further information on the content of this special issue is available page 22 of this newsletter. Linked to *The Geneva Papers* and the theme of global ageing, a special issue is also being organised on the topic of “longevity risks”. All interested parties are encouraged to submit a paper for this special issue by the deadline of 7 December 2014 (see the call for papers on page 22).

The second activity that deserves special attention is the forthcoming Health and Ageing Conference on “Emerging health risks and insurance” to be held in Madrid on 7–8 November and kindly hosted by MAPFRE Foundation. The conference will focus on new and emerging health risks, how they impact health and health financing mechanisms, and how insurance covers and manages these risks. The conference is organised around four sessions, each dealing with a specific emerging risk, ranging from lifestyle and behavioural risk, big data and smart analytics, pandemics and antimicrobial resistance, and finally, environmental health

* Research Director, Health and Ageing, The Geneva Association.

risks including health issues related to climate risks. For all these risks, it is very likely that insurance will have an increasingly important role to play in helping society to adapt and become more resilient. Insurers can help in various ways, whether in risk assessment and modelling, in providing incentives to prevention, in promoting risk awareness, and risk retention and risk transfer mechanisms. These themes as well as others will be discussed during the conference (see the programme on page 21).

Health risk and the way it is covered is one of the main concerns of individuals. This is obviously true, as health is by definition an irreplaceable commodity, i.e. a commodity for which there are no perfect market substitutes. This concern is highlighted by the latest Eurobarometer survey, which offers a global picture of opinion of the European population. In this survey, health financing issues rank fourth out of ten amongst the most important issues faced by the general public, just after inflation, taxation and unemployment. This result should not be very surprising in light of the current economic environment in Europe. Indeed, it is now well referenced that the current financial crisis that started in 2008 has severely worsened health outcomes in Europe. This phenomenon occurs via two main channels. First, the proportion of the European population at risk of poverty and social exclusion has risen sharply, leading to unmet needs for medical examination or treatment and to the consumption of less healthy foods. Second, the proportion of public spending dedicated to health has fallen in most European countries, reducing the resources and service provision, which therefore affects the functioning of the health system and access to care for Europeans.

A second phenomenon that is likely to raise concern on population health is climate change. Climate change is affecting the social and environmental determinants of health—clean air, safe drinking water, sufficient food and secure shelter. According to the World Health Organization, between 2030 and 2050, climate change is expected to cause approximately 250,000 additional deaths per year, from malnutrition, malaria, diarrhoea and heat stress.

The insurance industry should be active in fighting against these adverse effects by helping to strengthen health systems and developing collaboration with public authorities. Actually, this is the fundamental role of the insurance industry—to help stabilise the financial situation of individuals, families and organisations so as to promote economic and social development.

This newsletter comprises several contributions which echo the role of insurance in managing risks linked to health and on the needs and organisation of long-term care (LTC).

The article by Tim Eppert offers a thorough analysis of how critical illness insurance can be an adequate insurance product to fit the needs of an ageing population faced with the risk of being diagnosed with a severe disease. While the market for such a product is still low, various paths for making it more successful are explored. The second contribution, by Roland Sturm, addresses the impact on behavioural health risks of wellness programmes that are developed among employer benefits in the U.S. and by health insurers in other countries. His contribution provides further information first on the link between behavioral risk factors and health cost and second on the role of wellness programme in developing incentives for cost-effective preventive effort. The third article is by William Encinosa *et al.* and investigates whether direct-to-consumer advertising (DTCA) raises costs in health insurance markets in the U.S. or makes these markets more efficient in drug pricing. According to their work, they find that an increase in a manufacturer's DTCA spending lowers insurer prices and reduces insurance market price dispersion. Hence, DTCA shows a strong informational effect on insurance market costs. The fourth contribution, by Amanda Glassman, addresses an issue that is at the heart of health economics, namely the optimal allocation of finite resources across unlimited demand of health services, and the role of health benefit plans in improving this allocation. Finally, the last contribution, by Debbie Verbeek-Oudijk *et al.*, discusses LTC trends in the Netherlands and how they differ from that of other European countries with respect to various dimensions ranging from LTC needs, LTC financing, informal care and LTC utilisation.

As you can see, all these topics are of major importance in the quest for solutions for the future financing of health care, one of the aims of the Health and Ageing programme of The Geneva Association. I hope that you will enjoy this particular issue of the Health and Ageing newsletter and wish you a pleasant read.

Critical Illness—Fit for the Elderly?

by Tim Eppert⁺

Critical illness (CI) insurance provides a financial lifeline to people facing the consequences of being diagnosed with a severe disease. Hundreds of thousands claims have been paid to people suffering from cancer, heart attack and other life-threatening diseases. The underlying product idea is simple. Each product contains a list of covered diseases, which need to be clearly defined and assigned a severity criterion. If the definition is met, the insured receives a lump sum payment, which can be used according to this person's individual needs and wishes; for example, to finance the treatment, as substitution for income during recovery, to pay off the mortgage. This concept made CI a core product in many markets worldwide, sometimes under different names such as dread disease or trauma cover.

Creativity and competition led to more complex products with multiple and partial benefits and ever more diseases covered. But still, cancer, heart attack and strokes are responsible for the vast majority of claims. While most products are targeted at young adults or even children, they often offer protection into the higher ages and thus it is time to think about the impact of the demographic changes we observe. In almost all important insurance markets, individual life expectancy has increased enormously during the past decades and is likely to increase further in the future—while birth rates fall in many countries. Although many societies are in the process of ageing, it is not yet possible to visualise the impact of this on CI insurance. One reason is the lack of penetration the product has into this market—a fact borne out by the findings of Gen Re's most recent market survey. The proportion of in-force CI policies held by people over age 60 is still marginal (see Table 1). Up to now, younger consumers are seen as the main target group in many markets.

Table 1. Distribution of in-force CI policies by age group

Age	China	Hong Kong	Malaysia	Singapore	South Korea	Australia	U.K.
0-19	15%	5%	19%	16%	9%	2%	–
20-29	12%	17%	21%	16%	29%	7%	15%
30-39	28%	34%	30%	28%	30%	30%	43%
40-49	29%	30%	20%	25%	23%	40%	33%
50-59	15%	12%	9%	13%	7%	19%	9%
60+	2%	2%	1%	2%	–	2%	1%
Average	36%	37%	32%	35%	34%	42%	38%

Source: Gen Re Dread Disease Survey

There is also political pressure as an economic incentive for insurers to address the demand for CI insurance from people aged 55 and over. While traditional target groups will shrink in coming years, the proportion of wealthy and healthy consumers close to retirement age is set to grow in many markets. Insurable interest continues even in retirement and not only if direct medical expenses need to be covered. The potential still exists to incur costs for short-term care following a medical event or when making housing adaptations to accommodate new disability, for example. Income protection (IP) insurance has only a minor role, if any, to play for retired people, and their need to insure residual debts should also diminish. Hence, the insurable amount required by individuals should be smaller in the higher ages than in the younger ages for many markets.

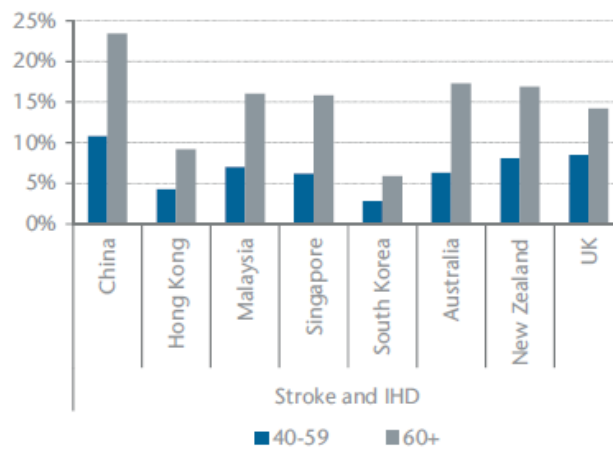
⁺ Senior Pricing Actuary, Research & Development, Gen Re, Cologne. Mr Eppert is an actuary specialising in critical illness insurance including disease definitions, product design and pricing. Tim is a member of the German Actuarial Association (DAV).

In this scenario, it becomes increasingly relevant that CI policies sold today work effectively in the future when a significant proportion of in-force policyholders have aged into their 70s and 80s. It is also appropriate to ask at this point what a CI product that is directly addressed to the older generation should look like.

Shifts in claims and diseases

Cancer is currently responsible for almost 90 per cent of all female CI claims in many markets. It is already possible to trace a marked increase in the proportion of cardiovascular disease claims compared to the age group 40-59 (see Figure 1). From population statistics it is possible to infer this effect will be even more pronounced for women in their 70s and 80s.

Figure 1 – Stroke and IHD* as a percentage of all CI claims

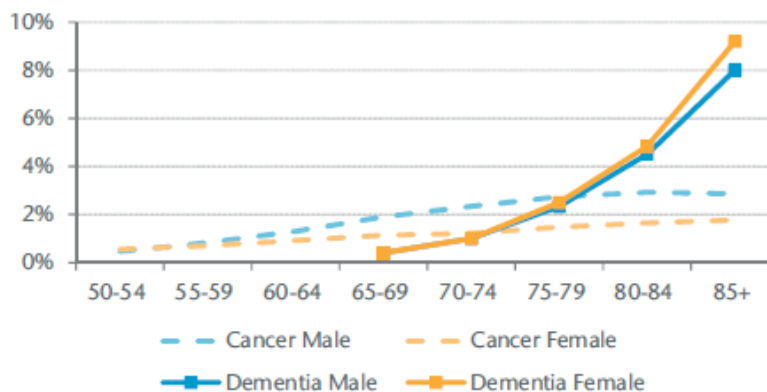


* IHD = Ischemic Heart Disease

Source: Gen Re Dread Disease survey 2004-2008

A major issue in higher ages will be dementia. As dementia in young portfolios is almost non-existent, insurers risk not focusing enough on this disease. A comparison of population rates for cancer and dementia reveals how strongly the weight of certain diseases on claims experience may change with increasing age (see Figure 2).

Figure 2 – Incidence rates for selected diseases (Germany)



Sources: gekid.de, BARMER GEK Pflegereport 2010

Consideration must be given to shifting medical guidelines if major organ transplantation or other surgical procedures are included in the scope of CI cover sold to older persons. Improvements in clinical practices, coupled with improved life expectancy, may increase the maximum age limits of people undergoing certain treatments and interventions, and this in turn could impact on future incidence rates in this area.

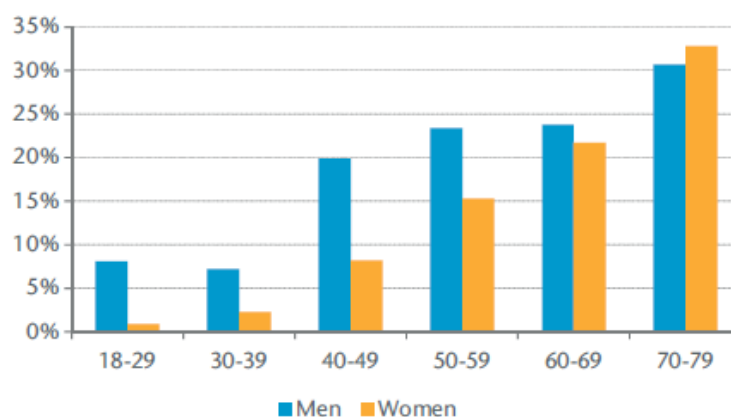
Incurring claims from elderly persons implies that a high proportion of claimants will have multi-morbidity. A study of 85-year-olds found that 68 per cent had at least two chronic diseases.¹ This can complicate CI claims management, as it will not always be clear what disease caused which physical limitation. A possible response is to price for a lump sum disability benefit or long-term care cover based on an “activities of daily living” (ADL) definition. When the combined consequences of the multiple diseases are severe enough to fail ADLs, a claim is payable whether or not it is possible to link the physical decline to a specific disease. For the specific diseases, however, it becomes more important to stress that the severity levels, which are part of the disease definition, must be caused by this specific disease.

Underwriting

For a young target group, the maximum end age will only have a small influence on underwriting requirements. However, if dementia is covered without an age limit, dementia-specific questions can improve the underwriting result.

But a standard underwriting approach is reaching its limits if such a product is to be systematically sold to the 55+ generation. Classic risk factors such as hypertension are much more prevalent in the higher ages than in the younger ages (see Figure 3). This means they work less successfully as indicators of substandard risks in an underwriting context for elderly lives. Using these classic risk factors in the same way as for a 20-year-old would lead to unacceptably and unnecessarily high declination rates. Compared to these risk factors, existing disease and treatment become more important to identify sub-standard risks.

Figure 3 – Proportion of population with hypertension (Germany)



Source: Neuheuser et al., Blood pressure in Germany 2008–2011. Results of the German Health Interview and Examination Survey for Adults (DEGS1)

The increase in existing disease and disease risk factors hinders the effectiveness of underwriting in the absence of intensive individual assessment, which in turn leads to an increased risk of asymmetric information and anti-selection. A limitation on the upper age limit for the entry age (e.g., age 70 or 75) is recommended, especially when an insurance company is just starting to sell to higher age groups and still needs to gather experience.

Product design

For the highest ages, claims will not only become more frequent, but it is harder to derive rates for these ages. Even in markets where CI is a commonly available product, insurers will rely on population data to some extent, while there is only a small number of insureds in the highest age category. Population statistics must be adjusted, as the underlying definition is different and the selection effect for the insured portfolio needs to be calibrated. In addition, the very long durations between entry age and maximum covered age make it difficult to estimate how

¹ Multimorbidity patterns of and use of health services by Swedish 85-year-olds: an exploratory study, BMC Geriatrics 2013, 13:120.

medical progress and changes to disease screening and social behaviours will impact the observed incidence rates over time. Taking this uncertainty into account will lead to a further increase in costs for old-age CI.

On the other hand, policyholders' disposable income will typically not increase much after retirement and, in most cases, is likely to be significantly less than before. Unaffordable premiums in the higher ages are unlikely to meet customers' needs, nor are they a suitable solution for reducing insurers' exposure in the higher ages, as the likely lapses would be highly anti-selective.

Keeping it affordable

What are ways to limit the uncertainty for the insurer and keep the product affordable for the client? One consideration is that robust definitions with objective severity criteria become even more important when higher ages are covered. Compared to a payout on any diagnosis, the risk of deteriorating claims experience is strongly reduced due to medical progress or changing screening behaviour. In addition, if only severe events are covered, fewer claims are to be expected for each age. Where CI is not mainly sold to cover direct medical expenses, this approach is also adequate for elderly insureds. For example, a minor stroke might reduce the ability to work but will often still enable an independent life during retirement; thus, the need to cover early events is diminished.

In addition, it makes sense to decrease the capital at risk with a market segment increasing in age, especially if the product contains guaranteed premiums. One possibility would be the reduction of the sum insured over time—just as it is implicitly implemented, for instance, in credit life insurance—in line with the decreasing insurable interest. This can reduce the risk for the insurer and limit the insurance costs for the policyholder. Another option is to use CI cover as an accelerator to a life insurance policy. At the very least it should be ensured that inflation protection and other increase options cannot lead to unreasonably high sums assured in the long run.

For a product with the end-age set during retirement or even whole life cover, a level premium makes more sense than risk premiums. As life expectancy is likely to increase, insurers may find that insured lives live longer than expected. A long premium payment period can help to ensure that at least a part of this prolonged cover is paid for. If minor diseases with partial payments are covered as well, these should not lead to a waiver of premiums.

There will still be insurers that do not want to offer cover beyond retirement. To cope with current and potential future anti-age discrimination laws, they may think about selling policies with a fixed duration instead of a fixed end-age.

Demographic transition offers chances, and insurers who directly address elderly consumers can gain new and wealthy target groups. They will, however, need to rethink their underwriting process and product design. All insurers that offer cover up to the higher ages—whether they concentrate on current target groups or not—will be affected by ageing portfolios. Robust definitions and limited sums at risk in the higher ages can help to manage the changing age structure. Insurers who adjust their products accordingly will be rewarded: due to increased awareness of the risks of critical illnesses in ageing societies, excellent marketing perspectives exist.

Societal Trends, Obesity and Wellness Programmes

By Roland Sturm⁺

Introduction

Behavioural risk factors, chief among them smoking, heavy drinking and obesity, are known causes of chronic diseases, which in turn drive health care expenditures, disability and eventually mortality. Behavioural risk factors are potentially modifiable, through smoking cessation programmes, taxation and regulation of tobacco and alcohol products, or programmes that encourage healthy diets or increase physical activity. Health promotion and wellness programmes have been the fastest growing areas among employer benefits in the U.S. for several years and similar programmes are developed by health insurers in other countries.

⁺ Senior Economist, RAND, Santa Monica, California U.S.A.

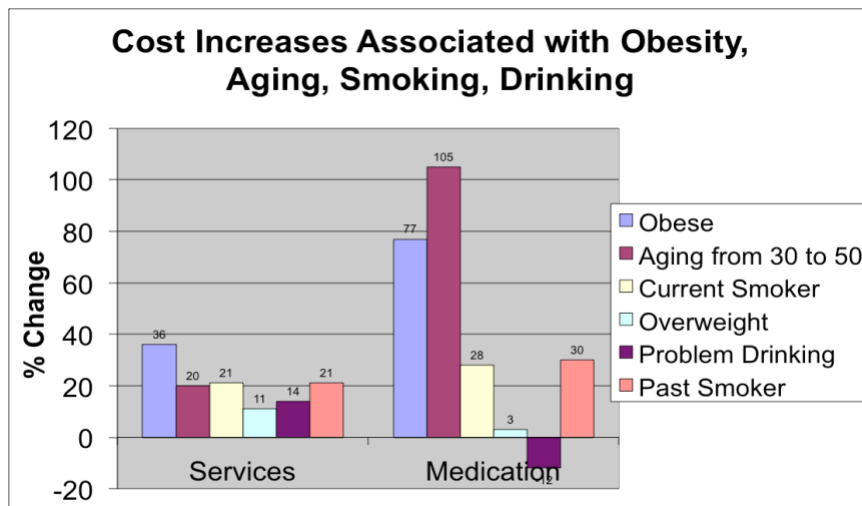
I summarise results in two areas relevant for insurance. The first is the association between different risk factors and costs, which is noticeably different from mortality effects. The second is what wellness programmes can realistically achieve.

What do behavioural risk factors mean for insurers?

Smoking, heavy drinking and obesity are all prevalent risk factors, although only obesity has dramatically increased over the past 25 years. Understanding the relative contributions of risk factors to poor health allows better targeting of health promotion programmes to make prevention efforts more cost-effective.

Figure 1 contrasts the effects of body mass index (BMI) category, smoking status, heavy drinking and ageing 20 years from 30 to 50 on health services and medication. In relative terms, the point estimates suggest that obesity (all levels) increases health-care service costs by about a third to being in a normal weight range; ageing from 30 to 50 increases service costs by 20 per cent; current or past smoking increases service costs by 20 per cent. For all risk factors, the increase is larger for medication costs than for services.

Figure 1. Effects of BMI category, smoking status, heavy drinking and ageing



Source: Author’s calculations using Healthcare for Communities survey data (1998–2002).

There are two important pieces missing for obesity in Figure 1. First, the average in a population obscures the fact that obesity has only a small effect among younger adults (who have not developed chronic conditions with or without obesity), but comes in strongly for middle-aged adults. The second is that severity of obesity has a highly nonlinear effect—and severe obesity is increasing at a much faster rate than moderate obesity.

We have calculated the relative impact of moderate and severe obesity on medical costs for 54–69 year olds in two different countries (the U.S. and South Africa), in different insurance schemes (general population in the U.S., privately insured in South Africa) and in different time periods (late 1990s in the U.S., 2010 in South Africa)—and the results are remarkably similar (see Table 1)! For the U.S., it is the average of the general population, the majority in employer-sponsored health plans, followed by government plans (in particular Medicare for the elderly). There are few individually purchased plans and also some uninsured. In contrast, the South African data includes only people who have individually purchased health insurance plans (the source of our data). Private insurance accounts for about one-sixth of the South African population, generally high-income households, and the majority of South Africans rely on an underfunded public sector.



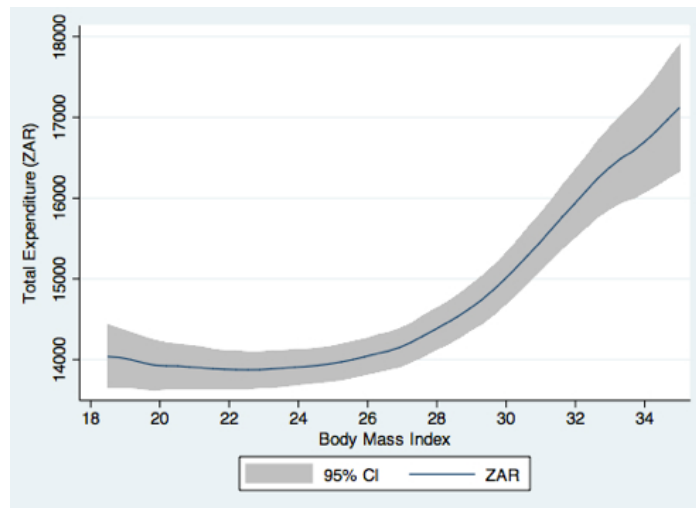
Table 1. Increase in annual health-care costs by obesity status relative to similar individuals in normal weight category

	Moderate obesity ($30 \leq \text{BMI} < 35$)	$\text{BMI} \geq 35$	$\text{BMI} \geq 40$
54–69 year old Americans	24%	50%	100%
54–69 year old South Africans	21%	51%	Not available

Source: Andreyeva et al. (2004) ; Sturm et al. (2013a)

This nonlinearity in health-care cost increases as a function of obesity is clearly seen in Figure 2, based on 2010 claims among members in Discovery/Vitality in South Africa.

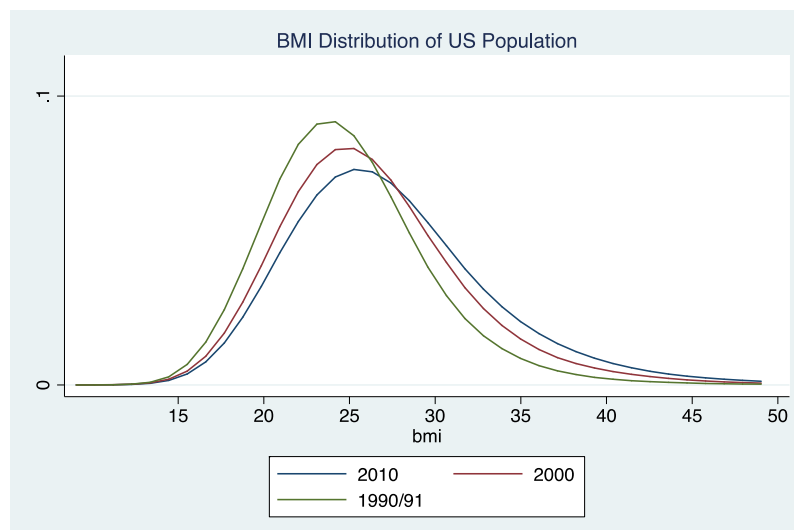
Figure 2. Medical expenditures increase rapidly with BMI—South Africans with private health insurance



Source: Sturm et al. (2013a).

The obesity epidemic is a phenomenon over time. What is particularly disconcerting is not just that the median person gains weight, but that the population becomes more heterogeneous. In other words, the BMI distribution not only shifts to the right, but also becomes flatter, with more people in the severe obesity tail (see Figure 3).

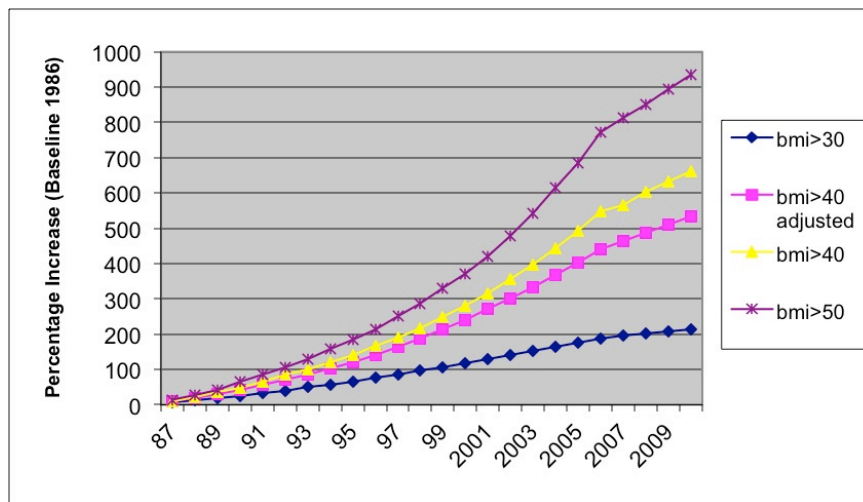
Figure 3. BMI distribution



Source: Author’s calculations using Behavioral Risk Factor Surveillance System (BRFSS) data.

The consequences of this flattening or increased population heterogeneity become more obvious when we graph growth rates by BMI categories in the U.S. as shown in Figure 4.

Figure 4. Growth rates for severe obesity are much higher than for moderate obesity



Source: Author's calculations using Behavioral Risk Factor Surveillance System (BRFSS) data.

The faster growth rate for severe obesity is not limited to the U.S., but seems to happen in other countries as well: Basterra-Gortari (2011) report a tripling of morbid obesity in Spain over 14 years.

Much of the media coverage on obesity focuses on mortality, but that creates a misleading picture of the impact of obesity. The "signature" conditions associated with obesity (type 2 diabetes) and smoking (lung cancer) indicate why mortality and morbidity effects can differ: type 2 diabetes leads to long-run medical care to manage it, whereas lung cancer is a rapidly progressing condition with 5-year survival rates below 50 per cent even with early stage detection. Obese people will spend a larger part of their life with disability than smokers. For the Netherlands, life expectancy at age 55 differed by 1.4 years among groups defined in terms of BMI, 4.0 years by smoking status and 3.0 years by alcohol consumption (Klijs *et al.*, 2011). Obese persons could expect to live more years with disability (5.9 years) than smokers (3.8 years) and drinkers (3.1 years).

The fundamental drivers of obesity are broader societal trends that are difficult to change (Sturm and An, 2014). Even if they fuelled the obesity epidemic (such as historically low food prices relative to disposable income), that does not mean that those trends themselves were undesirable, but it poses challenges for health promotion or wellness programmes.

Wellness programmes and lifestyle management

RAND recently completed the most comprehensive analysis of U.S. wellness programmes to date (Mattke *et al.*, 2013). Those programmes, in some form or another, have become almost universal among large employers. Workplace wellness takes advantage of employers' access to employees at an age when interventions can still change their long-term health trajectory. The Patient Protection and Affordable Care Act (PPACA) has encouraged further adoption of wellness programmes.

Lifestyle management interventions as part of workplace wellness programmes can reduce risk factors, such as smoking, and increase healthy behaviours, such as exercise, and those effects are sustainable over time and clinically meaningful. The RAND study found statistically significant and clinically meaningful improvements in exercise frequency, smoking behaviour and weight control, and those improvements were sustainable over an observation period of four years (Mattke *et al.*, 2013). However, what remains uncontrolled are unobservable differences between programme participants and non-participants, such as differential motivation to change behaviour.

Even when there are meaningful improvements in health behaviours, it is far from clear that wellness programmes result in net savings to employers. The RAND study only saw a minor decline that was well within the margin of

error and would be offset by the costs of a programme. That should not be surprising: wellness-sensitive acute events account only for a very small fraction of costs and would be the only ones amenable to short-run (within a few years) changes. Preventing obesity in 30-year olds will not reduce costs until those people are in their 50s. Then, there are big differences between obese and normal weight individuals as shown in Table 1. Having a population 54–69 with 10 percentage-point lower obesity rates could lead to costs that are 2.5–5 per cent lower.

The relative modest and statistically insignificant cost-savings reported in the RAND study are quite different from what has been claimed by programme advocates. Until a few years ago, wellness programmes covered a specialised niche, both in world of employer benefits and the world of academic research, that escaped scrutiny. This led to a proliferation of implausible and often impossible success claims by advocates, vendors and affiliated consultants. Lewis (2012) provides an accessible account why such claims are not credible.

The marketplace for wellness programmes is very dynamic. After a wave of irrational exuberance about wellness programmes, the pendulum is now swinging the other way. “Get well quick” schemes that promise employers substantial cost savings are unlikely to stay around for very long because they will simply fail to deliver.

As programmes develop and become more evidence-based, there are good reasons to believe that a reduction in direct medical costs could materialise in the long run. Long-run engagement is the key, as health problems associated with poor health behaviours neither appear nor disappear overnight.

But wellness programmes can do a few things. Framed appropriately, wellness programmes that provide incentives can turn into a mechanism that makes employees (in the U.S. employment-based system) or health plan members feel like they are saving money. It can provide a signal that employers/health plans care about their members and that is an end in itself. Finally, it can substantially affect the health status of the population through two mechanisms. The first is the one touted by programme, namely that they make the enrolled population healthier. The second is that a well-designed programme can create an environment that is attractive to people interested in healthier lifestyles. For employers, creating an environment that is attractive to young, healthy employees is essential to recruit and retain a productive workforce. For health plans, such risk selection is obviously an even more direct factor on profitability. But creating a culture of well-being is much more difficult than buying a wellness programmes.

RAND researchers have started to analyse one programme, developed by South Africa’s largest health insurer, Discovery, that is unusual in its scope: the programme Vitality integrates incentives for health promotion and preventive care in one programme, offers substantial discounts for buying healthier foods, offers benefits for physical activity programmes, provides the potential for large financial rewards for participants and uses a reward structure that mirrors insights from behavioural economics. The programme is a voluntary supplement and participants have to pay an additional subscription fee.

Does it work? For Discovery, the answer is yes, and the integration of health promotion into the health plan (or life insurance) is central to its business strategy. How and why it works remains unclear, because both causal effects and risk selection come into play and those two are difficult to separate in naturalistic settings. For a health insurer, there is a very obvious reason to encourage this programme: On average, members in Vitality are seven years younger than other health plan members. Vitality satisfies a key element for long-run success in the market place that is absent in typical employer wellness programmes: People actually like it so much that they pay to be part of it.

There is no collective impact assessment of all the components of the Vitality programme yet, but we have analysed one component of the programme, namely the healthy food benefit, which offers members a 25 per cent rebate on healthy food purchases in participating supermarkets (Sturm *et al.*, 2013b). The healthy food benefit significantly changed purchasing patterns among participants and accounted for about 1/3 of the difference between participants and non-participants. Behaviour changes are proportional to price changes. When people’s actual eating behaviours and what nutritionists recommend differ several-fold, even a 25 per cent price change closes just a small fraction of that gap. There were no immediate short-term changes in obesity or chronic conditions as a consequence of the healthy food benefit within the first 2 years of participation, but that should not be expected because preventing chronic disease is a long-term process.

What remains unknown is how the different components of a comprehensive programme like Vitality work together to encourage a culture of well-being among its members and what it finally can achieve in terms of causal health improvement.

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Direct-to-Consumer Advertising and its Impact on Health Insurance Markets*

By William Encinosa, Chad Meyerhoefer, Samuel Zuvekas and Dongyi Du

Introduction

Spending on prescription drugs in the U.S. was projected to be US\$269 billion in 2012, now making up 10 per cent of all health-care spending (Keehan *et al.*, 2012). Thus, it is not surprising that direct-to-consumer advertising (DTCA) for prescription drugs has increased dramatically over the past decade, from US\$200 million in 1997 to US\$3.9 billion in 2011, accounting for 37 per cent of total drug promotion expenditures. It now represents 2.3 per cent of all consumer advertising spending in the U.S., exposing the average American television viewer to 30 hours of DTCA each year. This has had a profound effect on the consumer. Consumer surveys consistently find that between 2 and 7 per cent of adults each year request and receive prescriptions for specific drugs after seeing advertisements for these products (Kravitz *et al.*, 2005).

However, outside the United States and New Zealand, many nations continue to ban DTCA (Humphreys, 2009). One main counterargument against DTCA is that it raises health-care costs in the insurance market. Indeed, the "persuasion theory" of advertising predicts that DTCA will raise prices due to persuasive brand effects that deter competitive entry from rivals. As a result of this anti-competitiveness, pharmaceutical manufacturers might be able to pass advertising costs through to insurers and patients, and patients might insist that they receive the advertised drug, as opposed to a generic drug or no drug at all, thereby raising the costs of insurance through higher drug prices. In contrast, the "informational theory" of advertising predicts that DTCA will lower prices by making patients more aware of all the possible drugs available for their condition, increasing their price sensitivity and

* This article is extracted from an original paper published as: Encinosa, W., Meyerhoefer, C., Zuvekas, S., Du, D. (2014), "The Impact of Direct-to-Consumer Advertising on Health Insurance Markets", *The Geneva Papers on Risk and Insurance – Issues and Practice*, 39(4): 749–767.

inducing more price shopping. Thus, there are two general countervailing theories of how DTCA may impact insurance markets.

While there has been little research on which of these two price effects of DTCA dominates in insurance markets, DTCA has been shown to have a positive informational effect in terms of improving health-care outcomes for patients. For example, DTCA can inform patients that they suffer from an undiagnosed medical condition (Myers *et al.*, 2011). There is also evidence that DTCA induces patients to start drug therapy sooner and can match patients to the best drug for their case (Bradford *et al.*, 2006).

This short text summarises the recent work by Encinosa *et al.* (2014) that examines if there is a similar informational effect of DTCA, not on health outcomes, but on costs in the insurance market.

Background on advertising and prices

While the studies cited above show that there is some initial evidence of value added from the clinical information conveyed in DTCA, one main counterargument against DTCA is that it is very costly and raises the price of drugs, outweighing the benefits. This can occur both directly and indirectly.

Firstly, DTCA could indirectly raise prices by inducing consumers to switch from a low-cost drug to a high-cost drug with little added clinical benefit. But, according to Berndt and Donohue (2006), most studies have consistently shown that DTCA does not induce switching and does not change individual market shares. Instead, DTCA attracts new consumers and expands the overall market. Secondly, DTCA can increase prices directly simply due to the large costs of advertising. In 2005, US\$4.2 billion was spent on DTCA. Berndt and Donohue (2006) estimate that this was about 2.2 per cent of total drug sales. In fact, the European Union and Canada have banned DTCA primarily on cost concerns. Unfortunately, the effect of drug advertising on prices still remains an open question.

It is well known that the advertising of drug prices by pharmacists and retailers is pro-competitive and lowers retail prices (Kaul and Wittink, 1995). However, DTCA ads from the manufacturers never include price information (due perhaps to the past per se illegality of resale price maintenance). Yet, several theories have been posited on how manufacturers may nevertheless affect prices with non-price advertising. These theories fall under two general schools of thought on the economics of advertising: the “persuasion theory of advertising” and the “information theory of advertising”.

“The persuasion theory of advertising” posits that advertising is used by manufacturers to sustain market power. This theory is called the “persuasion theory of advertising” since the consumer is persuaded that the product is better than anything else to the extent that rivals are dissuaded from entering the market (Leffler, 1981). One early model in this area was the single stage model developed by Comanor and Wilson (1974) which showed that a large incumbent firm may have economies of scale in advertising which prevents entry into a market. The large advertising outlays of the incumbent and the barriers to entry due to the rival’s higher marketing costs allow high profit margins to be earned by the incumbent. This was empirically supported in several industries by Comanor and Wilson (1974). While Comanor and Wilson (1974) inferred that these higher profit margins were due to higher manufacturer prices, this has not yet been empirically demonstrated. More generally, the “persuasion theory of advertising” predicts higher prices, since advertising differentiates the brand relative to rival brands and, thus, decreases consumers’ price sensitivity for the brand and increases market concentration.

In contrast, the “information theory of advertising” (Nelson, 1974) predicts that advertising lowers prices. Instead of differentiating brands, advertising in this case now allows consumers to recognise substitutes more easily, creating more price competition. The product information provided by advertising makes consumers more price sensitive. For the case of drugs, it lowers the search costs for consumers to find an appropriate set of drugs for their disease. On the retail side, Steiner (1993) showed that advertising resulted in lower retail prices and margins, as demonstrated in a number of empirical studies and case studies of various industries. Moreover, it is well known that a telltale sign of increased price sensitivity is a reduction in within-market price dispersion. The dispersion is the variation in prices within a market for a given drug (e.g. the maximum price minus the minimum price paid for a drug within a market). Therefore, under an informational effect of DTCA, reduced retail price dispersion would be expected, while under the persuasion effect, greater price dispersion would be expected.

Thus, we are faced with two competing models of the impact of advertising on retail prices—the persuasion effect results in higher prices and the information effect results in lower prices. It could be that the persuasion effects raise wholesale price, while the informational effects lower retail price conditional on wholesale price, with the net change in retail price being unknown. In this paper we will examine which effect of advertising on prices dominates in the fastest growing advertising market, the DTCA pharmaceutical drug market. Because of the positive clinical effects of DTCA on patient outcomes, it is anticipated that the information effect of advertising will dominate in the drug market. Therefore, it is posited that greater manufacturer DTCA will lower retail prices and reduce price dispersion.

While there has been little research on DTCA and retail prices, two recent papers by Capella *et al.* (2009) and Dave and Saffer (2010) consider the impact of DTCA on wholesale prices aggregated to the national level. Capella *et al.* find no impact of DTCA on wholesale prices, while Dave and Saffer (2010) found that DTCA increases wholesale prices. Thus, the effect of drug advertising on prices still remains an open question, especially for retail prices—the prices paid by consumers.

Results and discussion

Encinosa *et al.* (2014) fill this gap in the literature by attempting to move beyond the data limitations found in these two recent papers. Firstly, the use of national level prices in these papers precludes the correction for biases arising from market selection effects and pharmacy heterogeneity. Second, these papers consider only wholesale prices paid by pharmacies, not retail prices paid by consumers.

Using 17 million prescription drug insurance claims and all local and national DTCA advertising in 212 advertising markets across the United States, Encinosa *et al.* (2014) examine the impact of DTCA on insurers' negotiated prices for 166 drugs. Controlling for unobserved pharmacy and pharmacy benefit manager attributes, as well as manufacturer advertising market selection effects, they find that an increase in a manufacturer's DTCA spending lowers insurer prices and reduces insurance market price dispersion. These competitive effects intensify as DTCA competition increases between drug manufacturers.

Therefore, Encinosa *et al.* (2014) find that there is little empirical support for the "persuasion theory" of advertising—advertising that deters entry and raises retail prices. Instead, they find that DTCA lowers retail prices. This supports the "information theory" of advertising, increasing demand and resulting in greater economic efficiency, as reflected in mean prices and the degree of price dispersion. First, retail prices decline with DTCA. Second, retail price dispersion declines with DTCA. Third, retail prices and dispersion both further decrease with increased DTCA competition within a pharmacological class. Fourth, the presence of generic competition intensifies these effects of DTCA.

Currently, the U.S. and New Zealand are the only developed countries that do not ban DTCA. However, as European health care becomes more privatised, the European Union has recently loosened some of its restrictions on DTCA, allowing pamphlets and websites on treatments for diabetes, AIDS and asthma (Calfee, 2002). In December 2008, the European Commission proposed legislation that would allow DTCA with "objective and non-promotional" information. However, 22 of the 27 European Union Member States voted against the proposed legislation that would have allowed even this limited information to patients (Humphreys, 2009). In contrast, the U.S. market is moving towards tighter voluntary regulation due to recent drug safety concerns. As a result of the potentially negative effects of DTCA brought to light by the removal of Vioxx from the market, the Pharmaceutical Research and Manufacturers of America voluntarily issued a moratorium on DTCA for new drugs for an unspecified amount of time. Similarly, the Institute of Medicine has called for a two-year moratorium on DTCA after the introduction of new drugs. Simulations from Encinosa *et al.* (2014)'s regression results show that a ban or moratorium on DTCA would raise retail prices for consumers. Among the 38 advertised drugs, a ban on advertising in 2001–2002 would have increased the retail price per prescription by 86 cents and increased the retail price range per prescription by US\$1.09.

Encinosa *et al.* (2014) do not know how manufacturers will fare under a ban since they do not know their total costs of advertising. But, clearly, their research suggests that consumers may face higher costs under a ban or moratorium on DTCA. Their research indicates that DTCA is Pareto improving—patients obtain lower prices with less dispersion, and manufacturers earn a profit (otherwise they would not opt to advertise).

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Setting Priorities for Universal Health Care in Low- and Middle-Income Countries

By Amanda Glassman*

The problem: allocating scarce resources across competing priorities

A fundamental challenge for all health systems and health insurers is to allocate finite resources across the unlimited demand for health services. This is a rationing problem, regardless of whether it is explicitly addressed as such, because it requires active or passive choices about what services are provided to whom, at what time and at whose expense. Inevitably, some demand goes unmet, which is one source of the intense pressure to provide more services within any given resource envelope. Efforts to reduce waste, increase quality and improve efficiency are all responses to this pressure. Expanding health-care costs are another reflection of the same forces. A 2010 report by the Organisation for Economic Co-operation and Development (OECD) found that health spending growth exceeded economic growth in almost all OECD countries over the past 15 years. In the context of worsening fiscal positions in the global recession and greater demand for services because of ageing populations, the pressure on OECD health systems to deliver more care with greater efficiency is unprecedented.

The scarcity of health funding in low- and middle-income countries (LMICs) also increases the negative consequences of sub-optimal decisions on the uses of public subsidy or insurance premiums. Although 10 percent of the world economic product is spent on health, all LMICs together spend less than 3 percent of this total. Per capita annual public spending on health in LMICs ranges from a low of US\$2 in Myanmar to a high of US\$1,200 in

* Director of global Health Policy, Center for Global Development, Washington (aglassman@cgdev.org).

Equatorial Guinea. The variation in this range is enormous, but even the high end is dwarfed by spending in rich countries; annual public spending on health in the U.S. is over US\$3,602 per capita.

However, pushed by rapid ageing and growing economic prosperity and education levels, demand for health care is also on the rise, and public spending on health in LMICs is growing at pace. On average, LMIC public spending increased about 0.1 of a percentage point every 10 years between 1985 and 2010, which translates into an annual percentage change in real per capita terms of 3.4 percent for public spending on health. In some middle-income countries, growth in public spending is notable. In Turkey, for example, between 1981 and 2012, the average annual percent change in public spending on health was 11 percent. Likewise, South Korea was 10.1 and Mexico 4.5 percent.

Rapid growth in LMIC expenditure matters for two main reasons. First, significant quantities of additional funding are rapidly coming online and choices must be made on their use, choices that will determine the health system's impact on health and other outcomes, as well as the trajectory of future spending. Second, increased public expenditure has created a larger market for health-care products and services, one more attractive to industry than the historically small markets in LMICs. Industry marketing and advocacy are scaling up rapidly; in 2010, total emerging-market spending on pharmaceutical products was just over US\$200 billion.² Novartis and Roche generate nearly 25 per cent of sales from emerging markets. By 2020, UBS estimates that developed and emerging markets could be almost equal in size, driven by an expansion of state health-care coverage. Balancing the public interest with commercial interests will become increasingly complex.

It is therefore in LMICs that the need for better priority setting is greatest. Although many health technologies may be cost-effective when assessed against a health maximisation or financial protection goal, they may be unaffordable under a given budget constraint, forcing countries or insurers to say "no" to good value, effective technologies, or resort to inequitable implicit rationing methods.

One solution: health benefits plans?

To respond to these pressures, LMICs are developing new or improving policy instruments to set priorities for public or insurer spending on health. Health benefits plans (HBPs) have become increasingly popular and are defined by Velasco-Garrido *et al.*³ as a description of "services, activities and goods reimbursed or directly provided by publicly funded statutory/mandatory insurance schemes or by national health services." At core, benefits plans describe not only "what" is to be provided but also "to whom" and "in what circumstances", and should therefore be at the core of all publicly funded health care, and ultimately progress towards universal health coverage. And ideally, an HBP is not merely a list or a set of decisions, but should also be understood as an on-going process that shapes resource allocation and its outcomes now and in the future ("how 'who gets what' is decided"). Therefore, a benefit plan also defines a specific list of contingent liabilities for its beneficiaries—and consequently contributes substantially to defining its costs as well.

Although readily defined, identifying and classifying HBPs in practice is not straightforward, and analysts may disagree on what might qualify. Within the group of health systems that describe the services, activities and goods reimbursed and/or directly provided with some detail, explicit HBPs come in many shapes and sizes. HBPs may be positive or negative lists, catalogues or fee/reimbursement schedules. They may have broad or narrow scopes in terms of types of technologies, disease control priorities or eligible populations. And HBPs may be detailed and granular, or provide a less specific overview or guidance on the nature and content of goods and services to be funded and provided.

Motivations to adopt HBPs vary. The World Bank's World Development Report 1993, the Commission on Macroeconomics and Health⁴, and—most recently—the Global Health 2035 Commission⁵ argue that HBPs can be successfully used to channel funding towards health-maximising products and services. New guidelines issued by

² http://online.wsj.com/article/SB10001424052748704113504575264453499634626.html?mod=WSJ_Markets_section_Heard

³ Velasco Garrido, M., Kristensen, F.B., Palmhøj Nielsen, C. and Busse, R. (2006) *Health Technology Assessment and Health Policy-Making in Europe*, European Observatory Studies Series No. 14, Copenhagen: World Health Organization Regional Office for Europe.

⁴ Commission on Macroeconomics and Health, Working Group 5 (2002). *Improving Health Outcomes of the Poor*, Geneva, Switzerland: World Health Organization.

⁵ Jamison, D. *et al.* (2013). "Global health 2035: a world converging within a generation." *The Lancet* 382(9908): 1898-1955.

the World Health Organization describe universal health coverage (UHC) as requiring the definition of “a comprehensive range of key services well aligned with other social goals.”⁶ Indeed, many countries planning UHC reforms use HBPs as a means to understand and mobilise expenditure requirements associated with coverage expansions. In health systems that separate payment and provision functions, some variant of HBP is required to set expectations, organise payment systems and hold providers accountable for service delivery. Still others have argued that HBPs are necessary as a means to spell out entitlements to the population as part of the right to health, and to determine what is not covered so that individuals can self-insure for uncovered risks where possible (and insurance markets can develop). The International Monetary Fund (IMF), the European Commission and the European Central Bank have recommended “streamlining” HBPs to countries in economic crisis as a means to reduce public spending on health in the context of a fiscal crunch, or to identify essential health benefits. As a result of these multiple motivations, health systems in at least 65 low- and middle-income countries currently use some form of HBP as a policy instrument, with differing levels of explicitness and effectiveness.⁷

But, while commonly invoked as a policy recommendation and used in practice, HBPs and their associated processes share in common a surprising lack of scrutiny and evaluation. Beyond the 2004–2007 HealthBASKET project in Europe, other limited literature⁸ and a forthcoming study on OECD countries, there has been little comparative analysis and forward-looking guidance specifically targeted to low- and middle-income country settings. *Health Benefits Plans in Latin America* by Giedion *et al.*⁹ is a notable exception that explores motivations, scope, coverage and organisation of plans in seven Latin American countries, and analyses achievements and challenges. Further, work from Thailand on using health technology assessment (HTA) to inform coverage decisions¹⁰ and to design a benefits plan in reproductive health¹¹, from Chile on the plan of universal guarantees (AUGE)¹² and from Mexico on the use of benefits plans for resource mobilisation and financial protection¹³ have helped illustrate the potential of HBPs to deliver health system objectives. Literature and experience on priority-setting and resource allocation in general, as well as HTA, cost-effectiveness analysis, evidence-based/informed policy and medicine, clinical guidelines, comparative effectiveness research, systematic reviews and impact evaluation are also closely related and relevant areas, but have not been tightly linked to the process and practice of HBP design, adjustment and evaluation.

As a result, there is much more to be done to respond to policymakers’ most basic queries on a range of issues. In general, policymakers would like to understand the options available to decide what’s in and what’s out, and what other countries have done. On balance, is an HBP a good idea in my health system, or not? What methods and criteria should underpin decisions, and how should or can these criteria be balanced? How will the plan be kept up to date? What processes and institutions are needed? What can be done about non-prioritised benefits? How will the standard package be defined legally, e.g. what legislative and other approaches should apply and how will these relate to definitions of services for payment purposes? How will disputes in relation to the scope and content of the standard package be resolved? How should we manage the complex political economy and ethical terrain in which HBP decisions are taken and implemented? And finally, how can we make HBPs work in practice, aligning

⁶ World Health Organization (2014). *Making fair choices on the path to universal health coverage*, final report of the WHO Consultative Group on Equity and Universal Health Coverage, Geneva, Switzerland: World Health Organization.

⁷ Glassman, A. and Chalkidou, K. (2012). *Priority-Setting Institutions for Global Health Working Group Priority-Setting in Health: Building Institutions for Smarter Public Spending*, Washington, DC: Center for Global Development.

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¹⁰ Mohara, A., Youngkong, S., Pérez Velasco, R., Werayingyong, P., Pachanee, K., Prakongsai, P., Tantivess, S., Tangcharoensathien, V., Lertindumrong, J., Jongudomsuk, P. and Teerawattananon, Y. (2012) “Using health technology assessment for informing coverage decisions in Thailand.” *Journal of Comparative Effectiveness Research* 1(2): 137–146.

¹¹ Teerawattananon, Y. and Tangcharoensathien, V. (2004) “Designing a reproductive health services package in the universal health insurance scheme in Thailand: match and mismatch of need, demand and supply”, *Health Policy and Planning*; 19(suppl. 1): i31–i39.

¹² Vargas, V. and Poblete, S. (2008). “Health prioritization: the case of Chile.” *Health Aff (Millwood)* 27(3): 782–792.

¹³ González-Pier, E., C. Gutiérrez-Delgado, *et al.* (2006) “Priority setting for health interventions in Mexico’s system of social protection in health”, *The Lancet*, 368(9547): 1608–1618.

with other enabling health system functions like payment? How do we know if HBPs are delivering on the motivations that led to their creation and implementation?

These questions require further analysis and will form part of a new effort led by NICE International¹⁴ to understand how to better support LMIC governments and other payers in their efforts to set priorities on the path to universal health care.

Who Cares in Europe? A Comparison of Long-Term Care for the Over-50s in Sixteen European Countries*

by Debbie Verbeek-Oudijk, Isolde Woittiez, Evelien Eggink and Lisa Putman

Long-term care undergoing change

Long-term care (LTC) in the Netherlands has been changing for several years. Many people make use of this care, and the costs of the care sector amounted to 5 per cent of the Dutch gross domestic product (GDP) in 2010. In this work, LTC means the help provided to people who, due to a chronic physical, cognitive or psychological impairment, need long-term support in their daily functioning. Population ageing means the number of older persons needing care is rising, leading to a concomitant rise in the costs of care. Through a series of economy measures and reforms, the Dutch government is seeking to create a stable and efficient care system. Comparison with other countries is a useful means of gaining an insight into how the Dutch care system could work better. In this report we compare the Netherlands with a group of countries which represent a wide array of care systems.

Specifically, this report describes the degree to which LTC for people aged over 50 years living independently in the Netherlands differs from that in other European countries in the following five areas: (1) the LTC system; (2) the care need; (3) the risk of a LTC need and care utilisation; (4) the family care network; and (5) utilisation of paid and unpaid care.

To answer the research questions we draw on data from the Survey of Health, Ageing and Retirement in Europe (SHARE), a survey of persons aged 50 years and older living independently in a number of European countries.

Comparable problems, different approaches

As in the Scandinavian countries, the government in the Netherlands assumes a high degree of responsibility for providing LTC. Additionally, at least in the Netherlands, providing help for people with relatively slight health impairments is also regarded as a task of the government. In the Southern European countries, by contrast, as well as in Switzerland and Eastern Europe, the family takes primary responsibility for caring for people with a health impairment. In Belgium, Germany, France and Austria, responsibility for providing LTC is shared between family and government. Non-residential care in the Netherlands is regulated at the central level, though implementation is increasingly being devolved to the regional and local levels. The organisation of care in a number of Southern and Eastern European countries is highly decentralised.

Broadly speaking, two policy trends can be observed in the countries covered in this study. The first trend is that countries with a large amount of publicly funded care are increasingly shifting the focus towards family or social responsibility, and towards promoting informal care. At the same time, in countries where informal care already dominates, that care remains important, but efforts are also being made to improve the quality and accessibility of publicly funded care. The second trend is that the organisation and regulation of care is increasingly being devolved to local and regional authorities, based on the assumption that, if the provision of care is organised close to the

¹⁴ <http://www.nice.org.uk/about/what-we-do/nice-international>

* This text is a summary of a report published on 2 June 2014 by The Netherlands Institute for Social Research and written by Debbie Verbeek-Oudijk, Dr Isolde Woittiez, Dr Evelien Eggink and Dr Lisa Putman. The full report is available at http://www.scp.nl/english/Publications/Publications_by_year/Publications_2014/Who_cares_in_Europe

recipient, this will lead to more appropriate care solutions. These two trends can also be observed in the Netherlands.

Countries where care is seen as the responsibility of the government are characterised by relatively high public spending on LTC. However, this is not a one-to-one relationship. Public spending on care is also high in some countries where care is seen as a responsibility of the recipient's family. Public spending on LTC does not appear to be related to whether the care is organised centrally or locally/regionally. Compared with the other countries in this study, the Netherlands spends an average percentage of GDP on non-residential LTC.

Based on the expenditure on non-residential LTC and the entity that bears responsibility for providing care, the European countries in this study are clustered into groups when discussing the results. There is a Northern cluster (comprising the Netherlands, Sweden and Denmark), a Central European cluster (Austria, France, Belgium and Germany) and a Southern and Eastern European cluster (Italy, Spain, Portugal, Estonia, Hungary, Czech Republic, Poland, Slovenia and Switzerland). As a general rule, countries in the Northern cluster are characterised by high public spending and low family responsibility for care, the Central European cluster by average expenditure and average family responsibility and the Southern and Eastern European cluster by low public expenditure and high family responsibility.

Diversity in health impairments of the over-50s in Europe

The prevalence of health impairments in the population is very important for the volume of care utilisation. Based on data from the share dataset, we operationalise care need using three measures of health impairment: physical, psychological and cognitive, plus an overall measure summarising the care need. Roughly one in three over-50s living independently in Europe have no health impairment at all; just under one in three have a slight impairment, while the remainder (one in six) have moderate or severe impairment. Just under half the younger members of the over-50 age category have no health impairment, compared with only 6 per cent of those aged over 85 years. A not inconsiderable proportion of the "younger" over-50s thus have some form of impairment. The percentage of people with health impairments rises with age in an almost linear trend.

There are considerable differences between the countries in the study. The proportion of Dutch over-50s without health impairments is high (45 per cent), as it is in the Scandinavian countries and Switzerland. This proportion is much lower in the Southern and Eastern European countries (around 30 per cent). The same conclusions in terms of country differences apply for the age categories 50-64 years, 65-79 years and over-80 as for the entire population aged over 50. Physical impairments occur commonly in all countries studied; psychological and cognitive disorders are less common. All forms of health impairment are more prevalent in the Southern countries.

Although a sizeable proportion of the population aged 50 years and older have some form of health impairment, not everyone experiences it as such. It may be that, with mobility aids, care and/or home adaptations, over-50s are perfectly capable of functioning well in their daily lives and therefore claim that they have no difficulties. Just under half those with a severe impairment report that their health is poor, while just over half say they experience limitations in their daily functioning. It is striking that there are relatively few over-50s in the Northern countries with health impairments, but a relatively high number who experience limitations to their functioning, whereas in the Southern countries, people often state that they experience no limitations in their daily functioning despite having health impairments.

Wide differences in risk factors for care utilisation

Other characteristics in addition to health impairments, such as sex, age, marital status, education level and income, can play a role in explaining differences between countries in utilisation of LTC. These are *predisposing* and *enabling* factors for care utilisation. The proportion of single persons among the over-50s living independently is higher in almost all European countries studied than in the Netherlands. The Netherlands falls into the middle range in Europe in terms of the percentage of over-50s with a low education level; Spain, Italy and Portugal, in particular, have a high proportion of low-educated over-50s. The Netherlands has more highly educated over-50s than most other countries in Europe. Total annual household income in the Netherlands also differs markedly from

the other countries studied. The share of higher incomes is greater in the Netherlands than in most of the other countries.

In addition to demographic and socio-economic factors, life events can also create a care need (predisposition). We therefore investigate the degree to which the following life events occur in the various countries: serious illness as a child; going through one or more separations/divorces; death of a partner or child; and change of lifestyle. We find a number of differences between countries in the degree to which people aged over 50 have experienced such events. Over-50s in the Netherlands have experienced a serious childhood illness considerably more often than their peers in the Northern and Southern countries. There is also a striking difference between the European regions as regards behavioural adjustments that can promote health. A higher proportion of over-50s in the Netherlands and Scandinavia have, for example, given up smoking, reduced their alcohol intake and began taking more exercise than in the other European countries. People in Southern Europe have least often changed their life habits.

Many people have a family network

Andersen and Newman¹⁵ argue that the social network of people aged over 50 is an important enabling factor for care utilisation on which those in need can draw. People who do not have access to a social network but who need help are more likely to have to seek recourse to publicly funded care. This report looks only at the presence of a family care network from which the person needing help might be able to receive unpaid care. That network consists mainly of partners and children. The share dataset contains insufficient information on the availability of others, such as neighbours, friends and acquaintances. The family care network covers much of the entire network that is able to provide unpaid care. In practice, however, parents and children will not always be able to actually provide care if needed. They may face impediments that prevent them from providing care, because they are themselves sick or unfit for work, or, in the case of children, because they work full-time, have young children of their own or live a long way from their parents. In the light of this, the proportion of the potential family care network that experiences such impediments is considered in more detail.

Three-quarters of Dutch over-50s have a partner, a higher proportion than in most other countries. This percentage declines with advancing age. One in ten Dutch over-50s has one or more children living at home and two out of three (also) have children living away from home. In total, 90 per cent of Dutch over-50s have access to a network that could potentially offer unpaid help. This is in line with the average in the countries studied. In the Netherlands and most Southern European countries, the network consists mainly of people within the recipient's own household; elsewhere in Europe, it often comprises children living outside the home. Around 10 per cent of all Dutch over-50s do not have access to a family network, and the same percentage applies in almost all other countries studied.

This is potentially a very vulnerable group. Just under 70 per cent of over-50s living independently in the Netherlands have someone in their family care network who could provide care without encountering impediments. The average across the countries studied is 66 per cent. Portugal is the only country where this figure is higher than in the Netherlands. It should be noted that in most countries those aged over 80 less often have a family care network that could provide care without impediments than those aged 65–79 years and those aged under 65.

Greater government responsibility for LTC equates to more paid care

Finally, we describe the use of paid and unpaid care. We only have information about *paid network care*, i.e. paid private or public care that is provided by people in the social networks of people aged over 50. These may be people from home care organisations, but may also be private individuals or family members who are paid for the services they provide, for example, from a personal budget held by the care recipient. This approach ignores care that is provided in other ways, for example by regularly changing caregivers who do not form part of the recipient's network. As regards unpaid care, we include all care provided by family members, neighbours, friends and acquaintances, but also care provided by voluntary organisations. Unpaid care is also referred to as informal care. In

¹⁵ Andersen, R. and J. F. Newman (1973) Societal and individual determinants of medical care utilization in the United States", in: *Millbank memorial fund quarterly*, 51(1): 95–124.

order to be able to construct a picture of total care utilisation, we use share data from 2007 to estimate the total utilisation of paid care.

A small proportion (2 per cent) of Europeans aged 50 years and older receive paid care provided by caregivers from within their networks. This percentage is slightly higher in the Netherlands (3 per cent). The differences in utilisation of paid network care across countries reflect differences between the LTC systems. Responsibility for LTC in the Southern and Eastern European countries lies mainly with citizens themselves, and the use of paid network care is accordingly low in these countries. In the Northern and Central European countries, as well as in the Netherlands, the government has much more responsibility and the use of paid network care is accordingly higher. Roughly six out of ten Dutch over-50s receive unpaid care, often from members of their own household (around a third), but also regularly from children living outside the home (about a fifth). Southern and Eastern European countries, in particular, score highly on receipt of unpaid help (approximately 70 per cent). Given the earlier descriptions, there are broadly two explanations for this. It is often the norm for different generations to live together in these countries, so that the availability of unpaid care is relatively high. Moreover, there are few opportunities to use publicly funded care because of its limited availability. In countries where the availability of publicly funded care is much greater, such as the Netherlands and Scandinavia, the use and intensity of unpaid care is much lower.

On average, just under 70 per cent of over-50s in Europe receive unpaid care or paid network care. The Netherlands scores below average, at 61 per cent. Care utilisation in Southern and Eastern Europe is substantially higher than in most other countries, principally because people receive more unpaid care in those countries. Paid network care accounts for only part of the paid care utilisation. According to the share dataset, 7 per cent of the European population received paid care in 2007. Although the level of paid network care use is considerably lower in the 2011 dataset, the country differences remain comparable. The use of paid care is higher in the Netherlands and the other Northern and Central European countries than in the other European countries. If we assume that the ratio of paid to unpaid care remained unchanged between 2007 and 2011, it can be deduced that 64 per cent of over-50s living independently in the Netherlands receive paid or unpaid care. That is lower than in the countries of Southern and Eastern Europe, but higher than in countries such as Sweden and Austria. The percentage of people utilising care rises with age; people aged over 80, in particular, often receive care, but more than half of those aged between 65 and 79 and those aged under 65 also receive paid or unpaid care.

Conclusion

Briefly summarised, the Netherlands spends an average proportion of GDP on non-residential LTC compared with other countries, whilst population ageing in the Netherlands is among the lowest in Europe. As in Denmark and Sweden, responsibility for LTC in the Netherlands lies mainly with the government and much less with the family. Compared with their peers in other countries, relatively few independently living Dutch over-50s have physical, psychological or cognitive impairments. However, a relatively high proportion of this age group report that they experience their health problems as limiting. Most of the risk factors for care utilisation occur to roughly the same degree in the Netherlands as elsewhere. The Netherlands has few independent over-50s living alone and a lot of highly educated and affluent over-50s compared with the other countries studied. This age group do however report more often than the average in other countries that they had poor health as a child, but are more often inclined to modify their unhealthy lifestyle. Dutch over-50s have access to a family care network that could potentially offer unpaid help just as often as their peers in other countries. In contrast to elsewhere in Europe, the network mainly comprises partners rather than children. Family care networks in the Netherlands experience impediments in providing care slightly less than average. The percentage of over-50s living independently in the Netherlands who were receiving care in 2011 is estimated to be slightly lower than in most other countries. According to our estimates, only Sweden, Austria and Switzerland have fewer over-50s living independently who are in receipt of care; the use of unpaid care in those countries is the same as in the Netherlands, but the use of paid care is lower. The percentage of over-50s living independently in Southern and Eastern Europe who are in receipt of care is much higher than in the Netherlands, mainly because of the much greater use of unpaid care.

11th Geneva Association Health and Ageing Conference

Emerging Health Risks and Insurance

6-7 November 2014, Madrid

Hosted by MAPFRE Foundation

Day 1 Thursday 6 November

11.00-13.00 Session 1. Behavioral health risk and insurance

Chair: Dr Ana Villanueva, Chief Medical Director, MAPFRE Re, Madrid

- *Lifestyle risks - Trends and insurability*
Florian Boecker, Head of Life Solutions, PartnerRe, Zurich
- *How incentivised wellness plans can help insurers manage behavioural health risks*
Nick Read, Head of the UK Vitality programme, PruHealth, London

13.00-14.30 Lunch Break

14.30-18.00 Session 2. Big data, smart analytics and insurance

Chair: Dr Christophe Courbage, Research Director, The Geneva Association

- *Big data – a hype or a chance in managing health risks?*
Dr Achim Regenauer, Chief Medical Director, Munich Re, Munich
- *Digital epidemiology: exploring alternative data sources for predictive underwriting*
Séverine Rion Logean, Head Life & Health R&D Europe, Swiss Re, Zurich

16.00-16.30 Coffee Break

- *Morbidity data and smart analytics: a success story*
Daniela Rode, Managing Director, RISK-CONSULTING, Cologne
- *Personalised medicine – Social, ethical, and economic challenges*
Dr Harry Telser, Deputy CEO, Polynomics, Olten

Day 2 Friday 7 November

9.00-11.00 Session 3. Pandemics, antimicrobial resistance and insurance

Chair: Prof. Montserrat Guillén, Director of the Riskcenter, University of Barcelona

- *Emerging pandemic risks*
Dr Gordon Woo, Catastrophist, Risk Management Solutions (RMS), London
- *Pandemics and other medical risks in life and disability insurance*
Erik Alm, General Manager, Hannover Re Life & Health, Sweden
- *Antimicrobial resistance*
Prof. Luis Martinez-Martinez, Chief of Service of Microbiology, University Hospital Marqués de Valdecilla, Santander

11.00-11.30 Coffee Break

11.30-13.00 Session 4. Environmental health and insurance

Chair: Dr Ari Kaukiainen, Chief Medical Director, Local Tapiola General Mutual Insurance Company, Espoo

- *Environmental health – potential business opportunities and risks for insurers*
Steve Hales, Head of Global Life, Assicurazioni Generali S.p.A, Trieste
- *Climate change and human health: Emerging threats, adaptation costs and the role of insurance*
Dr Tim Taylor, European Centre for Environment and Human Health, University of Exeter Medical School, Exeter

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The Geneva Papers on Risk and Insurance—Issues and Practice

Volume 39, No. 4, October 2014

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- Innovations in the longevity market
- Regulation and supervision issues in the longevity risk transfer markets
- Longevity risk transfer products for individuals (annuities, guaranteed products in life-insurance, equity release)

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The Health and Ageing Research programme of The Geneva Association seeks to bring together analyses, studies, facts and figures linked to issues in health provision and the role of insurance, with an emphasis on the changing demographic structure whereby the population over 60 years old largely exceeds that of other groups. The key is to test new and promising ideas, linking them to related works and initiatives in the health sector and to try to find solutions for the future financing of health care.

We are particularly interested in the impact of an ageing population in health insurance systems; the development of insurance for long-term care risk; the effect of technology on health insurance; development of health-care systems and the capitalisation issue; the interaction of public and private systems in health provision; performance of health systems; health issues for an ageing population in the workplace.

The Geneva Association

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Established in 1973, The Geneva Association, officially the "International Association for the Study of Insurance Economics", has offices in Geneva and Basel, Switzerland and is a non-profit organisation funded by its Members.

The Geneva Association Health and Ageing Newsletter, N° 31, October 2014

This newsletter for Health and Ageing is linked to the research programme on Health and Ageing and is published biannually in April and October. For information and suggestions, please write to the Editor at the Geneva office. To subscribe to the e-Newsletter, please go to: <https://www.genevaassociation.org/subscriptions>.

Editor: Christophe Courbage, christophe_courbage@genevaassociation.org. **Production:** Valéria Pacella
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ISSN: 1605-8283

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November

4 **London** **10th International Insurance and Finance Seminar of The Geneva Association, hosted by Prudential plc**

6-7 **Madrid** **11th Health and Ageing Conference on “Emerging health risks and insurance”, hosted by MAPFRE Foundation**

18-19 **Munich** **10th CRO Assembly, hosted by Munich Re**

2015

February

19 **Basel** **31st Regulation and Supervision (PROGRES) Seminar**

20 **Basel** **2nd International Colloquium on International Capital Standards**

March

25 **Paris** **17th Meeting of the Annual Circle of Chiefs Economist (ACCE), hosted by SCOR**

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2016

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