Economist Intelligence Unit

The Economist

The future of healthcare in Europe

A report from the Economist Intelligence Unit
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Foreword

Across Europe, healthcare is barely managing to cover its costs. Not only are the methods for raising funds to cover its costs inadequate, but, of even greater concern, the costs themselves are set to soar. According to World Bank figures, public expenditure on healthcare in the EU could jump from 8% of GDP in 2000 to 14% in 2030 and continue to grow beyond that date. The overriding concern of Europe's healthcare sector is to find ways to balance budgets and restrain spending. Unless that is done, the funds to pay for healthcare will soon fall short of demand.

The financial meltdown is being caused by two interconnected trends: the ageing of the population and the parallel rise in chronic disease. Those financial burdens are being exacerbated by the rising cost base of medical technologies. On the positive side, the prospects for vanquishing many diseases are improving rapidly with the mapping of the genetic make-up of people who develop cancer, diabetes and heart disease. This prospect makes it all the more imperative to agree on a survival strategy for Europe's healthcare systems.

Policymakers have known about the forthcoming challenges to European healthcare for some time. Several countries have attempted to combat the effects of the global financial slowdown through extensive reform of their respective healthcare sectors. None of these efforts has yet proved successful, despite the involvement of the best and brightest thinkers on healthcare.

To unscramble the various perspectives on the ways to solve the healthcare financing conundrum, the Economist Intelligence Unit has undertaken this research, which looks at the challenges facing healthcare today and the likely shape of healthcare by 2030. The five contrasting scenarios that emerge from this research largely reflect prevailing attitudes and beliefs today. The hope is that, by examining healthcare in this way, some consensus might emerge about how to save Europe's healthcare systems.

About the research

To research this report, the Economist Intelligence Unit surveyed the literature and data available on Europe's healthcare systems. We also conducted 28 in-depth interviews with leading experts in the different professional roles that make up the healthcare sector: academics; clinicians; healthcare providers; payers; policymakers; medical suppliers; think tanks and representatives of patients. The data and interview comments were then analysed to define trends likely to impact the direction of healthcare in the next two decades. Finally, bearing in mind these trends, we developed five scenarios, each a distillation of a school of thought on healthcare reform. The intention is to use these scenarios as a policy-neutral set of platforms upon which some degree of agreement can be reached about the future direction of healthcare. A list of data sources consulted for this research is in Appendix I. A list of participants in the in-depth interview programme is in Appendix II.

The Economist Intelligence Unit bears sole responsibility for the content of this report. The findings and views do not necessarily reflect the views of the sponsor. The interviews were carried out by Alexandra Wyke, Paul Kielstra and Conrad Heine. Alexandra Wyke was the author of the report, and Aviva Freudmann and Delia Meth-Cohn were the editors.

Executive summary

It is a paradox of modern times that healthcare systems, created during a period of relative prosperity in the developed world, are facing financial ruin. Compared with the past, the early 21st century is a time of scientific advancement, economic progress and social stability in Europe. Yet the financial foundations of the healthcare system are deteriorating, and could crumble unless policies are changed quickly. The basic problem is the spiralling cost of healthcare, which is expected to continue. European governments and other payers are trying to slow that upward spiral, but they are far from agreeing how best to do so.

A key question is how healthcare systems can be redesigned without damaging the foundations upon which they were originally built. Underpinned by the principle of solidarity, Europe's healthcare system is paid for by the population at large, with the risks of medical expenditure essentially pooled. Most European citizens agree with this shared-risk principle and would resist any efforts to change it and thereby remove the promise of universal healthcare coverage. However, the financial contributions required for healthcare have risen steadily, to the point where governments realise that further increases are no longer possible or politically acceptable. Yet the rise in the cost of healthcare systems continues to outstrip economic growth and shows no sign of slowing down.

To contribute to the debate about the future of healthcare in Europe, the Economist Intelligence Unit interviewed 28 leading healthcare experts between December 2010 and March 2011. Each expert was asked to give his or her hopes, fears and predictions for Europe's healthcare in the year 2030. This report is based largely on their comments, detailing the factors driving the fiscal crisis in healthcare and the major forecast trends for the next two decades. The analysis of past trends is, in turn, the basis for five scenarios for healthcare in 2030. Although no single scenario is likely to come true, this examination of possible futures may help to clarify the current debate on healthcare reform.

Key findings of this report are highlighted below.

Healthcare costs are rising faster than levels of available funding.

The rising cost of healthcare cannot be met with current levels of public funding, raised via taxation and insurance. The main drivers of rising healthcare costs in Europe are:

- ageing populations and the related rise in chronic disease;
- costly technological advances;
- patient demand driven by increased knowledge of options and by less healthy lifestyles;
- legacy priorities and financing structures that are ill-suited to today's requirements.

The future of healthcare will be shaped by seven separate, but interconnected, trends.

- Healthcare spending will continue to rise, not only because of inflationary drivers, but because of growing recognition by policymakers that improved health is linked with greater national wealth.
- Keeping the universal healthcare model will require rationing of services and consolidation of healthcare facilities, as public resources fall short of demand.
- General physicians will become more important as gatekeepers to the system and as co-ordinators of treatment for patients with multiple health issues.
- More effective preventive measures and fundamental lifestyle changes will be promoted to encourage healthy behaviour.
- European governments will need to find a way to improve collection and transparency of health data in order to prioritise investment decisions.
- Patients will need to take more responsibility for their own health, treatment and care.
- Governments will have to tackle bureaucracy and liberalise rules that restrict the roles of healthcare professionals and artificially raise the cost of medical research.

Drawing upon these trends, we have identified the following five extreme scenarios for European healthcare in 2030:

- Technology triumphs and cures chronic disease, while e-health takes a prominent role in the management of healthcare;
- European nations join forces to create a single pan-European healthcare system;
- Preventive medicine takes precedence over treating the sick;
- European healthcare systems focus on vulnerable members of society;
- European nations privatise all of healthcare, including its funding.

The five scenarios make clear that, although there may be great debate across Europe on the details of healthcare reform, what is needed most is adaptability. The current debate is driven in large measure by self-interested factions, such as insurers, physicians and government bureaucracies. Over time, citizens may succeed in shifting the discussion so that it focuses where it should: on the best ways to maximise the health and wellbeing of Europe's population.

Part I. Drivers of the current crisis

Europe's ageing population provides both a testament to the success of healthcare provision in the past and a conundrum for the future. If healthcare had not made as many advances as it has, we would not be seeing the steady rise in life expectancy in all European countries, particularly the economically advanced ones. But success comes at a price: older populations are succumbing to diseases which typically are more prevalent as longevity increases. These include a roster of chronic diseases, such as cancer, diabetes, heart disease, respiratory conditions, stroke, dementia, and depression. By definition, these chronic diseases do not kill quickly. That means the financial burden of caring for the chronically ill has grown heavier, as have the demands on the healthcare system to provide appropriate treatment and care.

Other factors are adding to the demands on the system. These include the spread of unhealthy lifestyles, the explosion in technology-based cures and the sophistication of the workforce required to administer those treatments, overly bureaucratic systems, increased specialisation in medicine, and the growing demand by an educated public for access to expensive modern medicine. The instruments used to raise public funds to pay for healthcare—taxation and insurance—cannot keep up with these stresses.

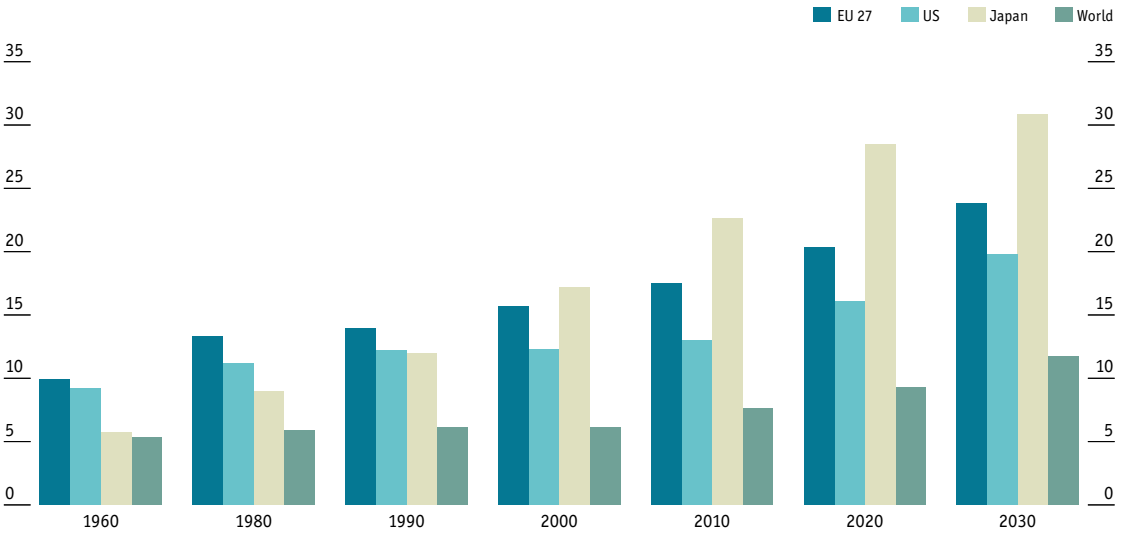
● Ageing and the rise of chronic illness

In Europe the ratio of older to younger people is set to rise. The UN's World Population Prospects report projects that the proportion of Europeans aged 65 years and older will grow from 16% in 2000 to 24% by 2030 (See Chart 1).

Life expectancy is also on the increase, particularly in the richer European countries. Eurostat figures show that life expectancy for male babies born in 2030 is more than a decade higher than that for those born in 1980 in the EU-15 (generally the wealthier member states). (See Chart 2.)

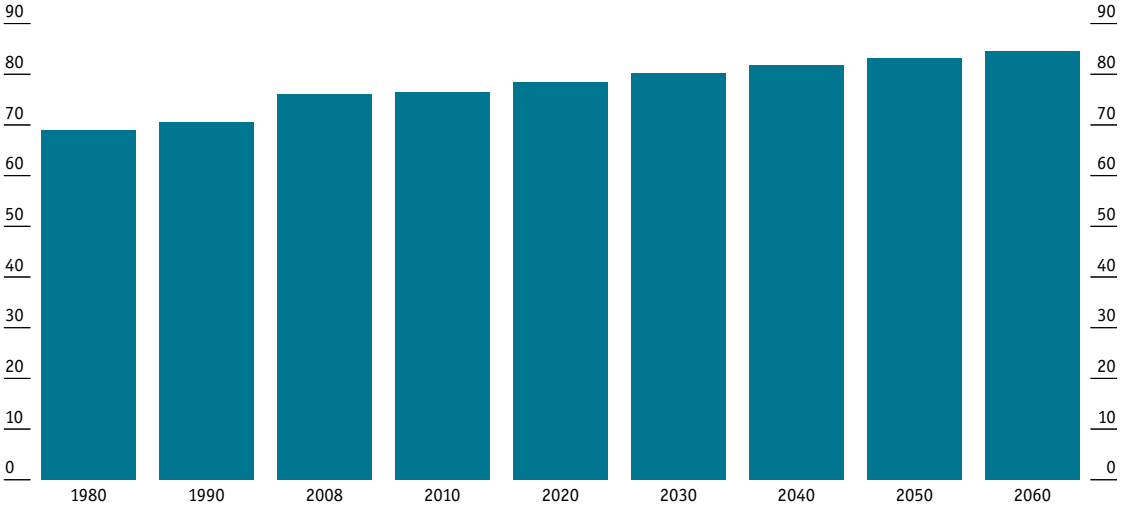
While higher life expectancy is good news, there is a downside: older people are more likely to be prey to chronic disease, the product of deficiencies in genetic makeup that are innate and/or are triggered by long-term assault by unhealthy environments and lifestyles. When the level of "defective" genes reaches a critical level, one or more chronic diseases appear. A longer lifespan allows more time for this to occur. In 2010, over one-third of Europe's population is estimated to have developed at least one chronic disease.

Chart 1: Percentage of people aged 65 and over in total population
(%)



Note: Figures for the years 2010, 2020 and 2030 are United Nations projections.
Source: United Nations, *World Population Prospects;* Office of Health Economics.

Chart 2: Past and projected life expectancy at birth, males, EU 27



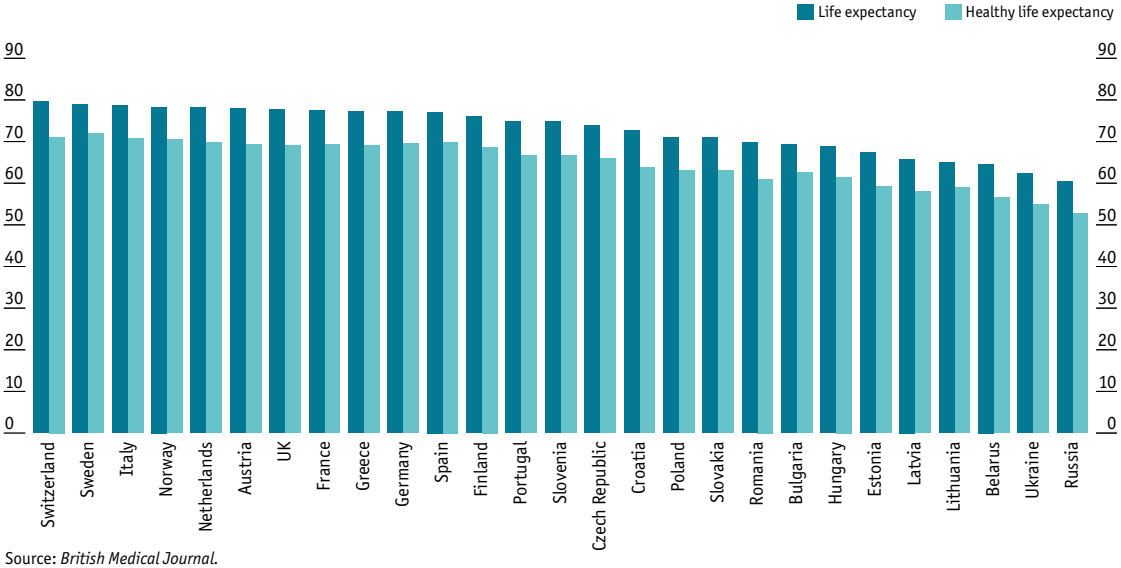
Note: Average not calculated for 2000.
Source: Eurostat.

So, while Europeans will live longer, they will not necessarily enjoy good health into old age. As Charts 3a and 3b show, healthy life expectancy is between seven and ten years lower than average life expectancy.

The increasing likelihood of developing chronic disease later in life translates into higher healthcare costs. If poorly managed, chronic diseases can currently account for as much as 70% of health expenditure, partly because of the significant costs involved in hiring a workforce to care for sick older people. The costs to government could be higher still, were it not for the millions of

Chart 3a: Healthy life expectancy compared to overall life expectancy

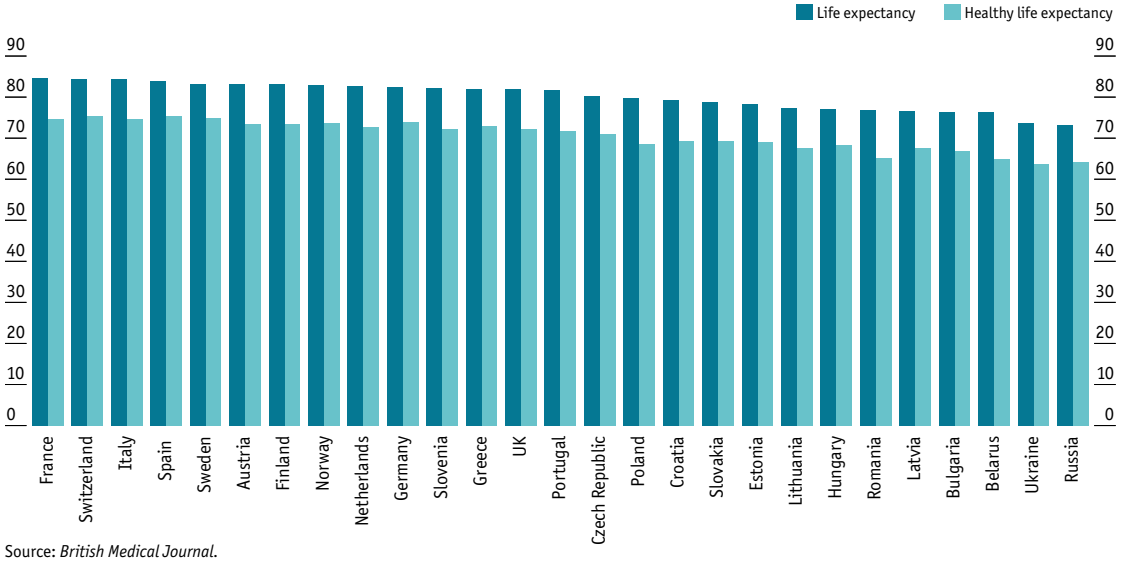
(Male Life Expectancy at birth (LE) and Healthy Life Expectancy (HALE) in Europe: developed versus developing countries. Last available data 2006-2008)



Source: *British Medical Journal.*

Chart 3b: Healthy life expectancy compared to overall life expectancy

(Female Life Expectancy at birth (LE) and Healthy Life Expectancy (HALE) in Europe: developed versus developing countries. Last available data 2006-2008)



Source: *British Medical Journal.*

Table 1

Number of people providing care to a dependent relative

Country	Number of carers	Number of carers combining work and care
Italy	3-3.5m	n/a
Netherlands	2.4m	1.3m
UK	6m	3m

Source: European Commission

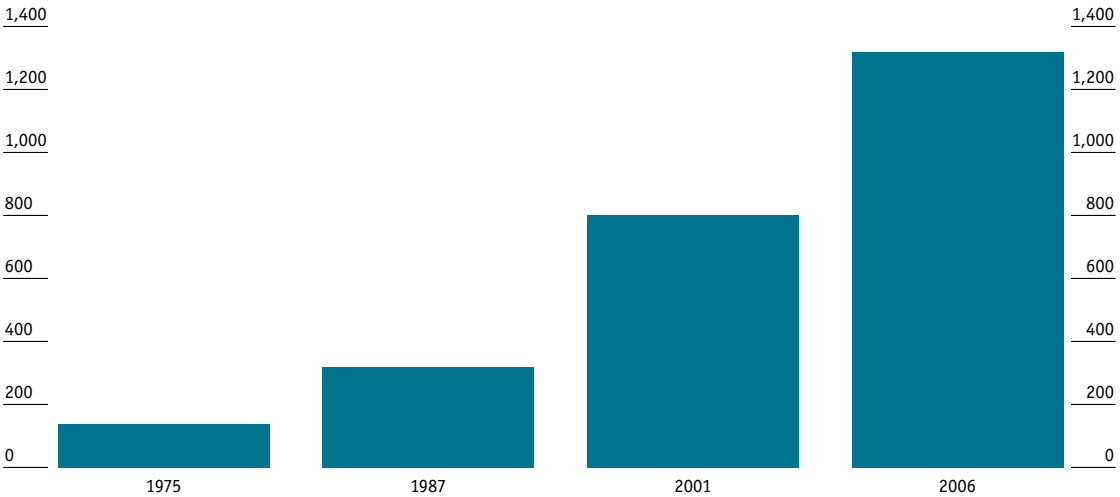
people who voluntarily care for their loved ones. The EC-backed initiative, EQUAL, estimates the numbers of carers in the UK, Italy and the Netherlands to be in the millions (see table above). Exacerbating the problem is the fact that the burden of paying for care will fall on a shrinking cohort of younger people.

● Technological advances: extending lives, but driving up costs

The pace of innovation in material sciences, genetics, biotechnology, bioinformatics and e-health has escalated in recent years, bringing significantly improved chances of surviving disease. The impact on society is expected to be profound—as profound as the information technology (IT) revolution has been in transforming lives. Professor Hans-Georg Eichler, senior medical officer at the European Medicines Agency (EMA), is among those who expect to see major scientific breakthroughs in medicine. "My hope is that science will produce game changers", he says. "A game changer would be a drug that cures cancer, or a drug that stays the progression of dementia. These types of products are on the horizon." Yet few can predict when this next stage of medical evolution will occur.

Desirable though it is, this scientific endeavour is costly. Medical expenditure has skyrocketed as pharmaceutical, medical device and biotechnology companies have striven to develop new technologies and treatments, as well as meet high regulatory health and safety standards. Research and development (R&D) expenditure by pharmaceutical companies has grown rapidly over the past two decades. The full cost of bringing new medicines to market rose tenfold between 1975 and 2006, when it reached over US$1.3bn. (See Chart 4).

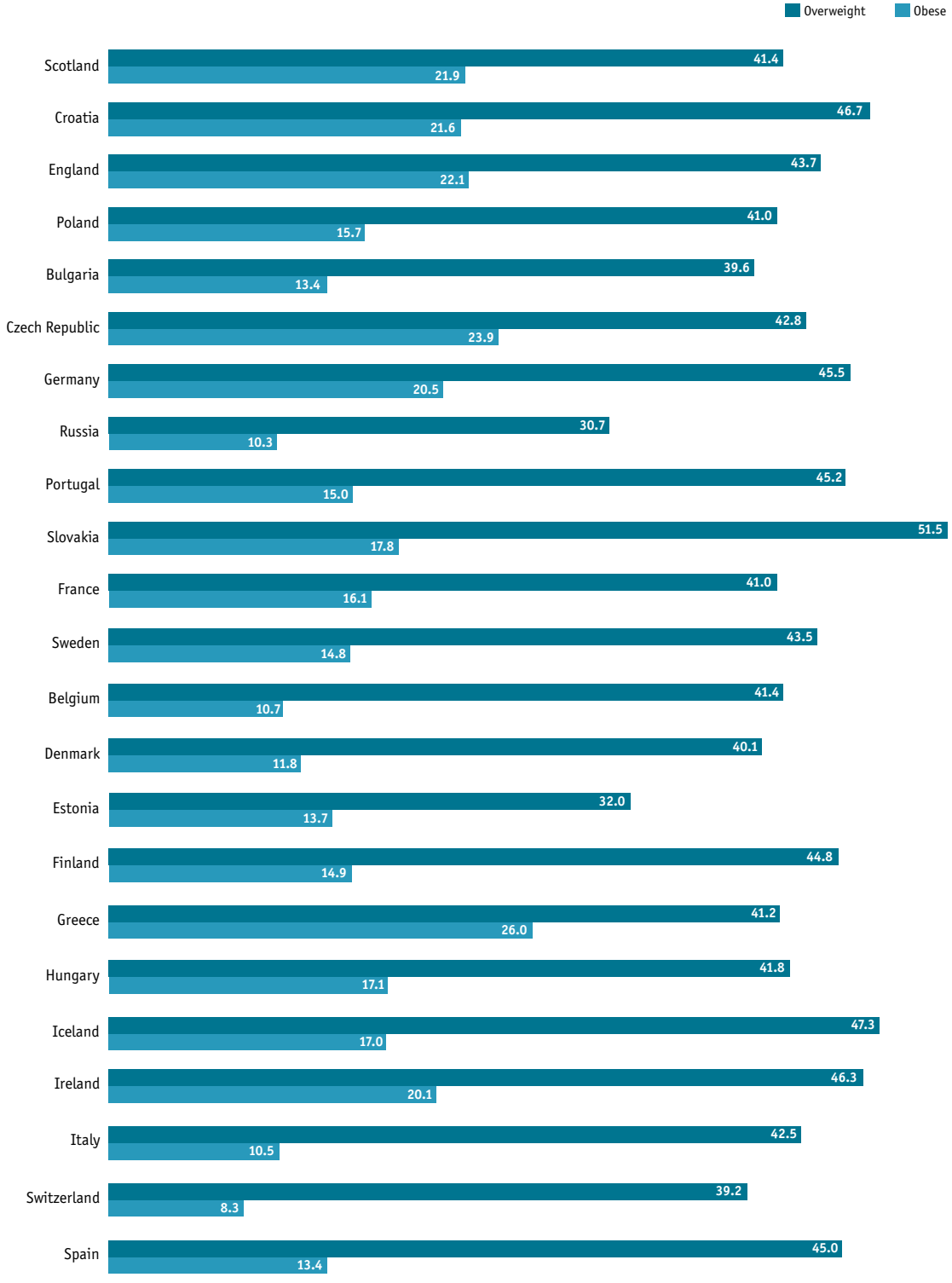
Chart 4: Full cost of bringing a new chemical or biological entity to market
(US$ m in 2005 dollars)



Sources: J.A. DiMasi and H.G. Grabowski, "The Cost of Biopharmaceutical R&D: Is Biotech Different?" *Managerial and Decision Economics 28* (2007), pp. 469-479

The skyrocketing costs, in turn, have led to further regulatory hurdles governing how much health authorities and individuals may spend on new medical technologies and medicines. For example, in May 2010 recession-hit Greece announced that it would cut drug prices by over 20%. Some

Chart 5: Overweight and obese populations in Europe, males
(%)



Note: Overweight defined as % Body Mass Index 25 - 29.9; and obesity defined as % Body Mass Index 30+
Source: International Association for the Study of Obesity, 2011.

manufacturers withdrew from the market, making certain medicines that were available elsewhere in Europe unavailable in Greece. Such inequities occur within countries as well. As Richard Bergström, director general of the Swedish Association of the Pharmaceuticals Industry, explains, "The challenge we face is that there is already a lot of [financial] tension within healthcare systems, which has led to a blockade on access to medicines."

While the financial pressures are real, an indiscriminate clampdown on spending could have far-reaching health consequences. Martin Bobrow, chairman of the Muscular Dystrophy Campaign in the UK, explains: "Policymakers need to be reminding themselves that biomedical research is in an explosive phase, and won't deliver goods if reined-in thoughtlessly."

● **Growth in patient-driven demand**

Patients are increasingly a major cost driver of healthcare systems. This occurs in two ways. First, access to online information about every aspect of health makes individuals more savvy healthcare consumers and more inclined to demand the latest (and likely expensive) medical innovations. Patients make these demands because they suspect that cash-strapped healthcare systems are unreasonably denying them the medical care they need.

Secondly, the spread of unhealthy lifestyles is driving up medical costs. For example, a high-calorie, fast food culture has fed an epidemic of obesity, which in turn provides fertile ground for other diseases, such as type-2 diabetes, to develop. A 2007 government study in the UK, where levels of obesity are already among the highest in Europe, predicted an increase in excess of 60% in obesity-related diseases between 2005 and 2030. (See Chart 5).

● **Legacy healthcare structures**

Among the biggest drivers of healthcare costs are the priorities that have governed the systems since their inception, and which are proving resistant to change. When Europe's national healthcare systems were established in the 1930s and 1940s, the two main medical concerns were the spread of infection and malnutrition. Today, with refrigerators, antibiotics and nutritious food generally available, these concerns are no longer paramount. Europeans are better nourished and less likely to contract communicable diseases. Now they are facing more intractable medical conditions: cancer, dementia, diabetes, heart disease, mental health problems and respiratory ailments, to name but a few.

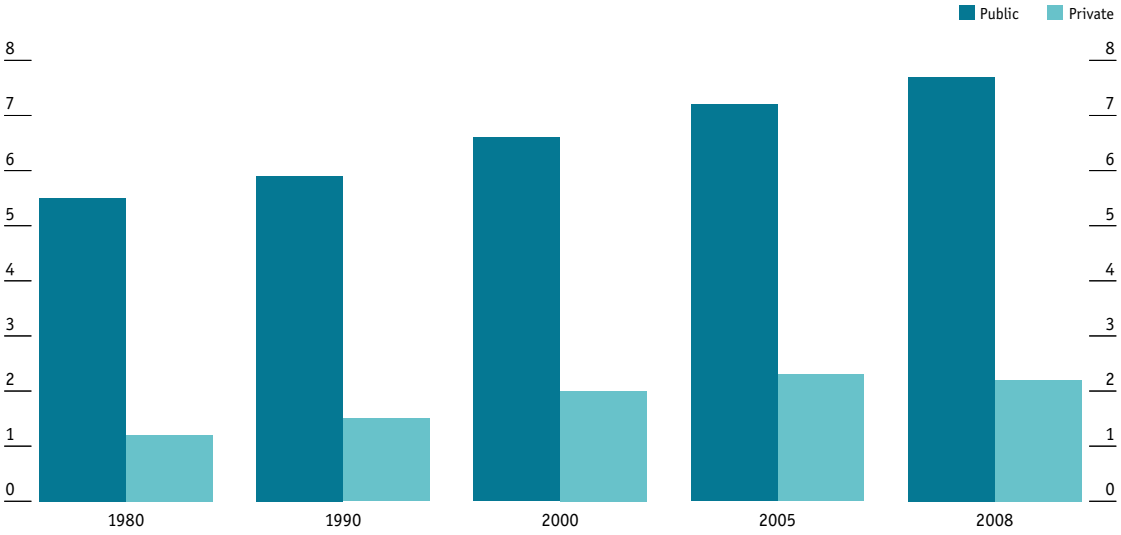
Yet little has changed since the 1950s in the way healthcare systems are run and how they are financed. Both the financing and delivery of healthcare remain highly fragmented, and oriented to providing acute, rather than chronic, care. So, for example, many local communities retain their own full-service hospitals, resulting in system-wide duplication.

Mark Pearson, head of the health division at the OECD, thinks the current situation in healthcare is archaic. "Healthcare systems in Europe look like they are designed for the 1950s. They are oriented around acute care. Medical education is oriented around hospitals. Payment systems are oriented around particular interventions," he says. "Biomedical research is still based on the assumption that people have single diseases at a time, but already the biggest challenge is multiple morbidities. These require a more longitudinal approach and payment systems that can cope with care provided in more than one setting. Success will mean finding some way to move on from the acute care model."

Moreover, despite increased average longevity, governments continue to finance their healthcare systems either out of tax revenue or out of insurance premiums, both of which depend on drawing money from a robust, healthy, relatively youthful workforce. As a population ages, the proportion of younger tax- or insurance-paying earners declines.

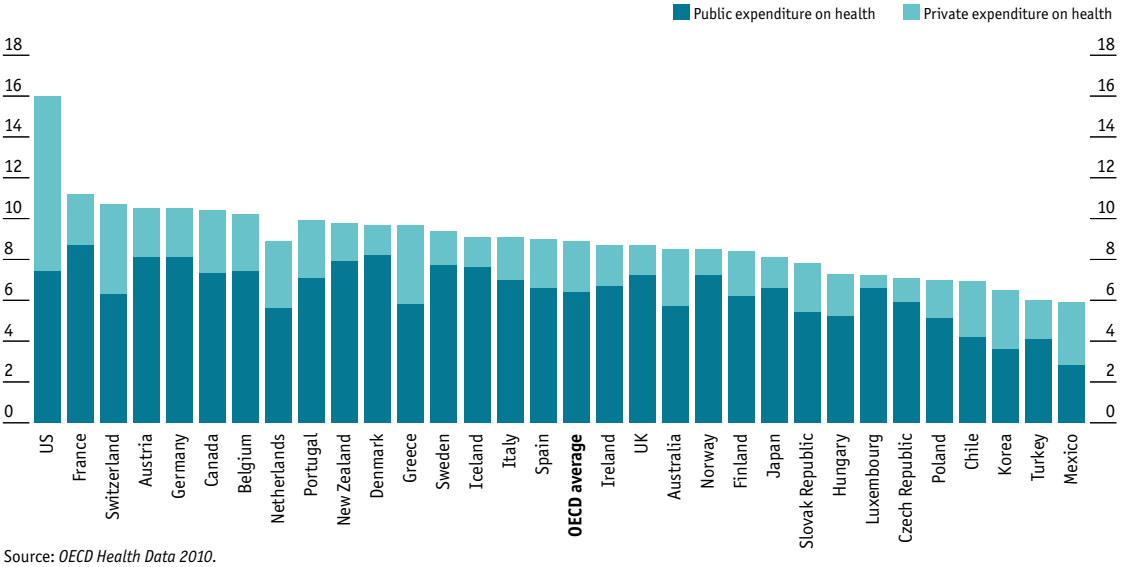
As a result of these legacy structures, healthcare consumes a growing proportion of GDP in developed countries. (See Chart 6).

Chart 6: Health expenditure as a share of GDP, EU 27
(% of GDP)



Source: Eurostat.

Chart 7: Health expenditure as a share of GDP in OECD countries, 2008
(% of GDP)



Source: *OECD Health Data 2010.*

Healthcare represented 9% of GDP for all OECD countries on average in 2008, with many Western European countries recording expenditure above that average. (See Chart 7).

The next section considers the likelihood of these costs continuing their upward climb, and what it might take to slow that cost spiral down.

Part II. Future trends, 2011-30

Basic decisions that will shape tomorrow's healthcare

The shape of Europe's healthcare system in 2030 will depend on how governments and populations answer two key questions:

- What sort of healthcare system do Europeans want?
- What methods will Europeans favour to achieve the desired outcome?

These questions are being asked throughout Europe in a variety of contexts.

- **Public or private?**

Some are questioning where publicly funded healthcare should begin and end. "What is the purpose of the UK National Health Service?" asks Natalie-Jane Macdonald, managing director of BUPA Commissioning, an arm of the UK private insurer BUPA, which provides commissioning support services to bodies within the National Health Service (NHS). "It is currently anything and everything to everybody. This kind of opacity of all things to all people is not sustainable." Dutch health minister, Edith Schippers, who is continuing the successful reform of a centralised system, expresses the challenge succinctly: "We have a mixed system of private insurers within a public context. If you go too much towards the private side of the system, it is hard for people with expensive diseases and little money. If too much towards the public side, it can become expensive, bureaucratic and not innovative enough. We have a very thin line between the two opposites."

- **National or pan-European?**

Others are looking at the implications of making healthcare a European concern, rather than a national one. Bernard Maillet, secretary general of the European Union of Medical Specialists (EUMS), would like to know "how we can work in a harmonious way all over Europe, trying to avoid borders." At the same time, Karen Taylor of the UK's National Audit Office asks, "How will free movement among healthcare systems tackle the questions of equity and fairness, when populations are so diverse across Europe and there are such diverse healthcare systems?"

- **Proactive or reactive rewards?**

Still more question the basis on which spending decisions are made. A system that fails to reward

prevention is less than fully efficient, in an increasingly popular view. The OECD's Mark Pearson stresses the importance of a new approach to payments. "If we can't get that right, there will be large increases in health spending and not particularly good value for money", he says. Stephen Bevan, managing director of The Work Foundation, poses a similar question: "How will we make the transition towards preventive healthcare?"

Seven trends for the future

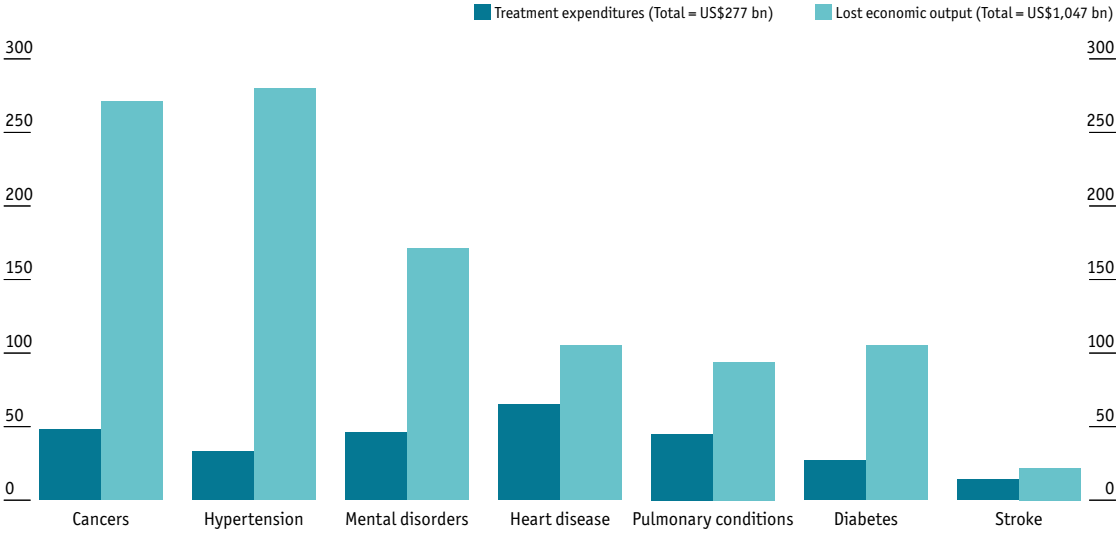
As these debates go forward, they will affect the outcome of several distinct trends involving European healthcare. These trends fall into seven categories.

1. Healthcare spending will continue to rise, not only because of the many inflationary drivers outlined in Part I, but because of growing recognition that better health is linked with greater national wealth.

Whether the reality of a rising cost base proves to be as frightening as its prospect depends in part on how the payers regard healthcare spending. If they see it as an investment in a more productive society, rather than purely a consumption item, the rising costs may not seem so onerous.

The Milken Institute in the US provided a conceptual framework for this approach with a study comparing the treatment expenditure for different diseases to the total economic output lost as a result of the presence of those diseases. According to this analysis, the lost economic output is considerably greater than the amount spent to fight the diseases. (See Chart 8).

Chart 8: Total economic cost of chronic disease, US, 2003
(US$ bn)



Source: The Milken Institute.

As Professor Volker Amelung of the Medical University of Hannover points out, the important issue is not really how much is spent, but how efficiently it is spent and how good its outcomes are—in his words, "smarter provision of healthcare".

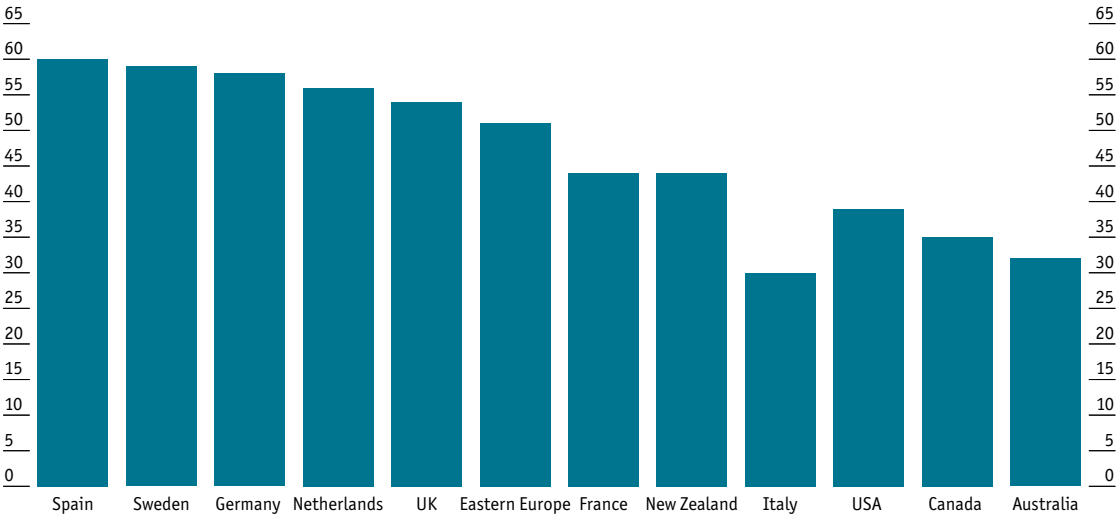
Another way in which healthcare provision can be made smarter is through a change in the incentives provided for medical innovation. The current system rewards innovation that prolongs life, which made sense when infectious, acute and short-lived diseases dominated the landscape. But as chronic diseases become the dominant concern, the challenge is to develop technologies and treatments that improve patients' quality of life over the long term. Professor Eichler thinks that one of the most pressing strategic issues for healthcare systems is "devising a more appropriate incentive structure for innovators that will not wreck healthcare budgets".

2. Universal healthcare will require a degree of rationing and consolidation of healthcare facilities, as public resources fall short of demand.

Most Europeans are in favour of sustaining some variant of universal national healthcare. This requires healthcare services to be funded through a collective, publicly run and financed system, with care delivered free or at low cost, regardless of patients' ability to pay. This political preference increasingly is at odds with the ability of national healthcare systems to pay for services to all. Yet healthcare systems that claim to be universal have never quite lived up to the word. All contain some level of price rationing, "so that different levels of care are supplied to different people", explains Professor Amelung. He and others, including Stephan Gutzeit, executive director at Germany's Stiftung Charité, believe that rationing is set to become more widespread. "We are going to have to talk eventually about the rationing of care. This talking will occur either openly, which would be desirable, or not openly, as happens now, to cut costs", he says.

Already, there are varying degrees of support within Europe for the notion that patients should receive the best care available, regardless of cost. (See Chart 9).

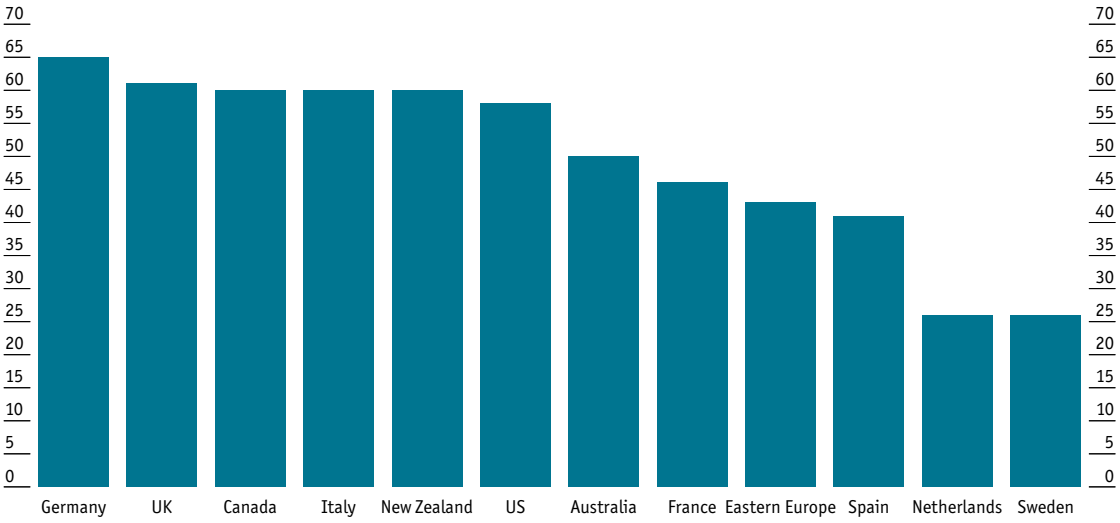
Chart 9: Share of patient groups saying that health professionals should make care decisions irrespective of cost
(%)



Source: *PatientView (Global survey of 2,500 patient groups), PatientView Quarterly,* February 2011

Similarly, not all Europeans believe that healthcare professionals should function mainly as patient advocates vis-à-vis the healthcare system. (See Chart 10).

Chart 10: Share of patient groups supporting easier patient access to diagnosis and treatment by health professionals
(%)



Source: *PatientView (Global survey of 2,500 patient groups), PatientView Quarterly,* February 2011

In addition to rationing, some form of consolidation is likely to take place, which will cut overall system cost, but may impose costs on individuals required to travel farther from home for medical care. This could, for example, take the form of establishing centres of medical excellence across Europe, which would draw on patient populations from all of Europe's member states. Richard Sullivan, director of global oncology policy at the King's Health Partners Integrated Cancer Centre in London, believes in this approach. Duplicating medical facilities and services into multiple locations drives up costs needlessly, he says. "We need to get away from a culture that expects healthcare delivery close to home, and, as a political expediency, we need to travel farther to hospitals—albeit with travel costs paid for by the state."

3. General practitioners will become more important as gatekeepers and as co-ordinators of treatment for patients with multiple health issues.

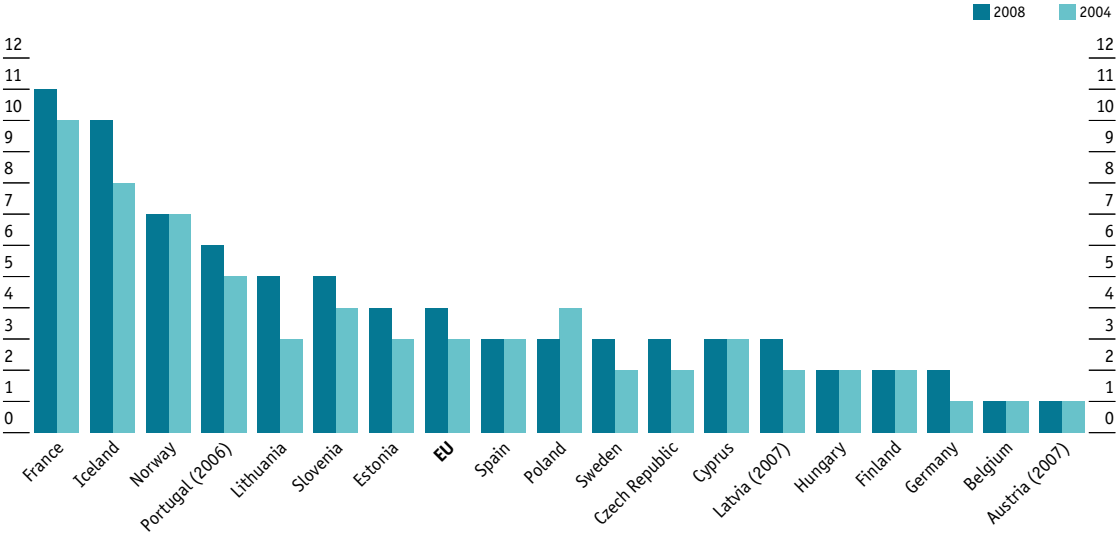
A government focus on cost control will reinforce the role of general practitioners as gatekeepers—providing immediate care and referring patients to specialists only when strictly needed. This will imply some upgrading of the skills, status and pay of medical generalists, and more scope for them to deploy their knowledge and skills.

In addition to serving as gatekeepers, GPs increasingly will be called upon to serve as "patient managers", co-ordinating the varied needs of patients with multiple health issues. Indeed, the more specialised the doctors treating different conditions affecting the same patient, the greater the need for a co-ordinator. According to Margaret O'Riordan of the Irish College of General Practitioners , "With ageing you also get a multitude of sicknesses, co-morbidities, where the average person has three to

four chronic diseases, each being cared for by different specialists. If you treat one disease, you may upset another. The GP is in the unique position to manage multi-morbidites in a holistic manner".

The use of general physicians as gatekeepers may lead to an increase in the proportion of care that is provided on an outpatient basis—generally a less costly form of care than that involving overnight stays. According to Dr Mukesh Chawla, manager of health, nutrition and population for the World Bank, "Just appointing general practitioners as gatekeepers should suffice to deal with the growing healthcare expenditure problem." Across the EU, outpatient or day care is already rising as a proportion of the total. (See Chart 11).

Chart 11: EU day care as a share of total curative care expenditure, 2008 vs 2004
(% expenditure on curative care)



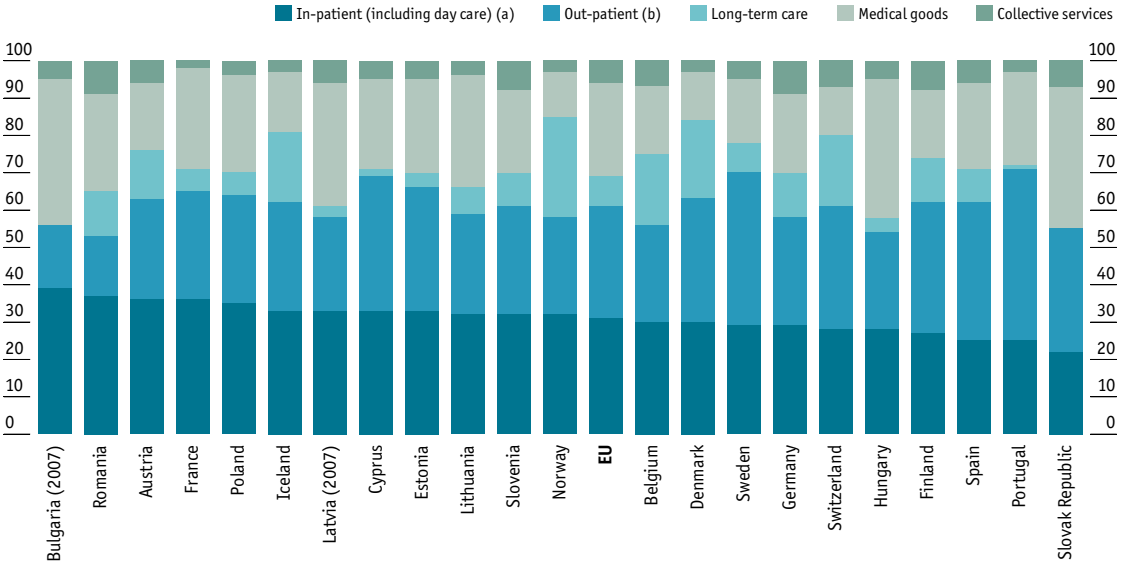
Note: Day care services provided in hospitals, day surgery clinics and other settings.
Sources: *OECD Health Data 2010; Eurostat Statistics Database.*

There is, however, a long way to go for day care to become predominant. Currently, expenditure on in-patient services, including those provided in hospitals for day patients, is still nearly one-third of average EU expenditures on healthcare. (See Chart 12).

4. Preventive measures will become more important as a way of promoting healthy behaviour. The World Health Organisation (WHO) noted in 2005 that at least 80% of all cases of heart disease, stroke and diabetes are preventable. This requires lifestyle changes, which can be influenced through a combination of public education, pricing, taxation and various incentives and disincentives. Richard Smith, director of the United Health Chronic Disease Initiative, believes that such progress is only possible with a strong public healthcare system. "If you want to have an impact on health, you have to think more about populations than individuals," he says. "But that goes against the grain of medical professionals."

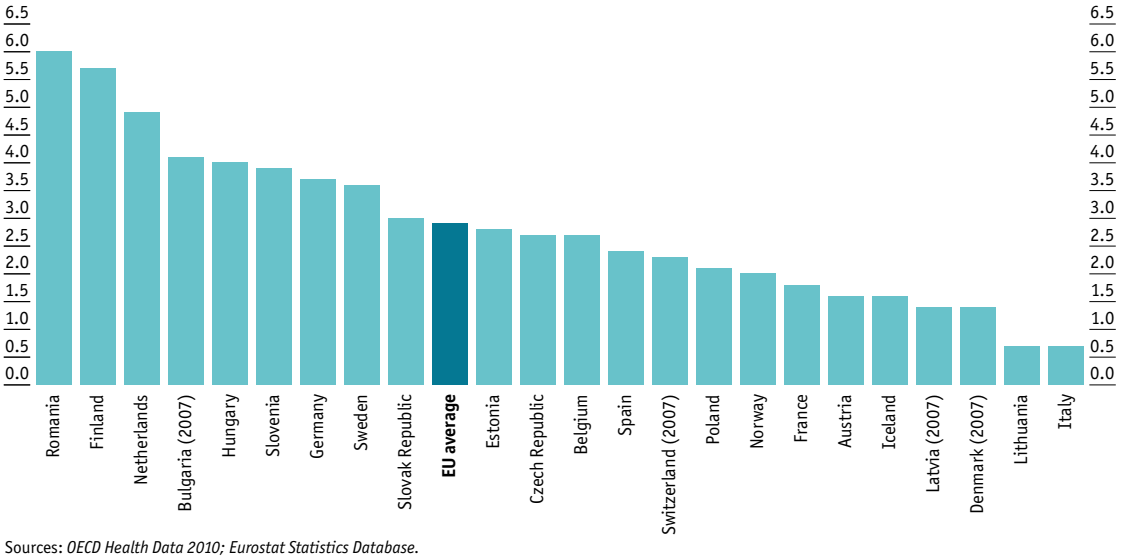
So far, expenditure on prevention remains low in many countries compared with the sums spent on curative care, as Chart 13 shows.

Chart 12: Expenditure on in-patient care as a percent of total, EU, 2008
(Countries are ranked by in-patient curative care as a share of current expenditure on health)



(a) Refers to curative and rehabilitative in-patient and day care services provided in hospitals, day surgery clinics, etc.
(b) Refers to curative and rehabilitative care in doctors' offices, clinics, out-patient departments of hospitals, home-care and ancillary services.
Sources: *OECD Health Data 2010; Eurostat Statistics Database.*

Chart 13: OECD expenditure on public health and prevention programmes, 2008
(%)



Sources: *OECD Health Data 2010; Eurostat Statistics Database.*

As awareness of the importance of prevention takes hold over the next two decades, however, the proportion of expenditure on public healthcare may rise.

5. European governments will need to find a way to improve collection and transparency of health data in order to prioritise investment decisions.

Surprisingly, governments today have only a vague idea of whether the investments they make in healthcare are valuable. Yet sound analysis of return on investment is becoming increasingly important, as demand rises and funds become scarce. "The fact is, we have no handle on value," says Marco Steinberg of the Finnish Innovation Fund. "Getting that handle is becoming more urgent as the public resources diminish. We need to be more precise when there is not a lot of money."

Part of the reason why the analysis is lacking is that clinical data are opaque, owing to requirements to preserve the privacy of personal medical records. Legislation such as the 1995 Data Protection Directive will need to be reviewed with a view to improving the collection and transparency of medical data, to enable more informed healthcare investments. Guido Rasi, director general of the Italian Medicines Agency, believes that successful development of e-health "will improve data analysis and allow decision to be made on robust information".

6. Patients will take more responsibility for their own health, treatment and care.

While patients and the public still believe in the general notion of universal healthcare, they are increasingly sceptical that the system can deliver high-quality healthcare to all. This is why many European citizens are clamouring to have a say in healthcare policy at both central and local government levels. It is also why, at a more basic level, many individuals will have to take more responsibility for their own health, adopting healthier lifestyles and researching alternative courses of treatment on their own.

Both trends are being aided by the spread of social media, which have brought an explosion of healthcare bloggers, tweeters and online-savvy groups, such as Kick Cancer and Stamp out Stigma, a UK campaign to reduce the stigma against those suffering from mental illnesses. Groups like these regularly publicise deficiencies in national healthcare systems and demand that government do something about it. Antonyia Parvanova, Member of the European Parliament from Bulgaria, believes that such pressure groups should focus more attention on their own members' behaviour. "Governments have missed the most basic point about public health, which is the personal responsibility of all citizens towards their own health, their own health promotion and their own lifestyles," she says.

Communications technology can help to bring about a greater degree of personal responsibility, fostering the sharing of information between experts and patients, and among patients themselves. Marc Michel, managing director of Greater than One (Europe), a digital solutions agency, believes that, in the next 20 years, Europeans will have their health history integrated into the system with all the different stakeholders involved. "As a result, patients will be much more empowered to make choices about medication, surgery, prevention, and intervention, taking into account their unique circumstances and preferences," he says.

7. Governments will have to tackle bureaucracy and liberalise rules that restrict the roles of healthcare professionals and artificially raise the cost of medical research.

Delivering healthcare is labour intensive; in 2010, one in ten employed Europeans was involved in healthcare delivery. As demand for services rises, some areas are experiencing shortages of doctors.

This will require more creative and flexible approaches to using existing medical skills and expertise, including, as noted above, making more intensive use of general physicians as gatekeepers and as co-ordinators of care.

Yet the trend in the medical profession has in some ways been moving in the opposite direction. For example, as geneticists become more detailed in their categorisation of diseases, and as the range of technologies available to treat diseases becomes more abundant and complex, doctors have become more specialised in order to deliver state-of-the-art diagnoses and treatments. Several of the experts interviewed for this report said that such specialisation promotes bureaucracy and duplication of services.

In addition to enhancing the role of general physicians as gatekeepers and patient managers, some healthcare policymakers are considering upgrading the roles of others in the system, such as nurses and pharmacists. Physicians—both specialists and generalists—have tended to resist such moves, which many of them view as an encroachment on their role as medical decision-makers. Yet the financial exigencies of the system may make this necessary. As John Chave, secretary general of the Pharmaceutical Group of the EU, argues, "We cannot afford the luxury of spending money training and under-using health professionals because of petty turf wars."

The spread of e-health technologies is likely to accelerate a blurring of lines of demarcation within the medical profession, as well as allowing patients to take a more active role in their own care. Dr Petra Wilson, senior director of public sector healthcare at Cisco Internet Business Solutions Group in Europe, explains: "Health and care providers will be using technology to share experience and skills across the EU, so that EU citizens can get the best of whatever is available across the EU, rather than being restricted to what is available in their own country, region or city."

Governments can contribute to cost reduction as well, notably by streamlining medical research. Recent legislation has, unfortunately, gone in the opposite direction. For example, the EU Clinical Trials Directive, which came into force in 2004, has increased the bureaucracy and costs of conducting medical research. In December 2009 the Commission launched a consultation to review that legislation, after two separate EU studies highlighted negative impacts. The Impact on Clinical Research of European Legislation (ICREL) study found that the cost of academic trials had risen by as much as 90% as a direct consequence of the law.

In a January 2011 report to the UK government developed in conjunction with the country's leading medical researchers, the Academy of Medical Sciences commented on the state of regulation of medical research: "The existing regulation and governance pathway has evolved in a piecemeal manner over several years. New regulatory bodies and checks have been introduced with good intentions, but the sum effect is a fragmented process characterised by multiple layers of bureaucracy, uncertainty in the interpretation of individual legislation and guidance, a lack of trust within the system, and duplication and overlap in responsibilities. Most importantly, there is no evidence that these measures have enhanced the safety and well-being of either patients or the public." For these reasons, the Academy said, the process of discovery and testing of new medical ideas should be reviewed and streamlined.

Part III. Five scenarios

The following are five possible scenarios describing the potential healthcare landscape in Europe in 2030. While these storylines are fictitious, they highlight the consequences of various policy directions taken by the healthcare planners of the present, and the benefits and risks associated with various choices. As such, they are intended as a platform for debate on the outcomes of different courses of healthcare policy. It is important to note that these scenarios of the healthcare world of 2030 are contrasting, but not mutually exclusive. That is, the future may well hold some elements of all of them.

1. Technology triumphant

By 2030, life sciences will have delivered (and will continue to deliver) cures for many age-related chronic ailments such as diabetes, heart disease and stroke. Some of the success will be attributable to the introduction of personalised treatment and care, which allows patients more choice of medicines and interventions. Patients will be able to pick what suits them best, and thereby minimise the side-effects caused by medical interventions. One major advantage of 2030 technology is that medical interventions will be so effective that they rapidly diagnose (and sometimes even cure) chronic diseases—whereas in earlier decades, people often lived with chronic disease without ever being diagnosed. By 2030, many people will stay healthy and productive up to the grand old ages of 100 to 110, when they quickly deteriorate and die.

A sub-field of e-health known as ambient intelligence will support this transformation. This field will develop electronic systems that are aware of the presence of people, and can serve as the platform upon which medical technologies are delivered. An e-health manager (eHM) will continuously monitor an individual's vital signs, such as body temperature, chemical composition of the blood, and neuronal activity. The system's interactive networking will support doctors' prescribing decisions, supplying each person with regular, easy-to-understand instructions about what to do next to optimise their treatment and care. Messages will be simple: "Time to pop a blue pill and two of the red ones"; "Open and drink a pack of energy-giving juice"; "You are now half an hour late in taking your lunch", and so on. The people of 2030 will work and live seamlessly alongside their eHM, drawing on its benefits

Scenario 1: Technology triumphant

What if?

- Technology marches forward on all fronts: from nanotechnology to biotechnology, from material sciences to genomics.
- Healthcare is not viewed as a cost, but as a major investment.
- 20% of GDP is spent on healthcare, a large chunk of which goes towards technological improvements.
- The stable, political economies of Europe foster a climate for entrepreneurism.
- Health systems are finally able to reform their business models to promote cost-effective innovation.

The scenario

- Technology has triumphed, and can now cure many chronic diseases.
- The phenomenon is pan-European.
- E-health has ensured that healthcare is well managed.

2011 → 2030

Critical factors

- Regulators provide proper incentives for improved technologies.
- Health provision is reformed to ensure that the treatments are prescribed appropriately, and followed to their best effect by patients.
- Regulators and payers work harmoniously together to ensure that innovation meets the needs of the population, and that all individuals have access to the latest, most effective medical interventions.
- Industry forms partnerships to innovate.

Pros and cons

Possible positives

- The society-wide financial benefits of patients being able to return to work, or live independently, has more than paid back innovation costs.
- Drug companies are no longer vilified. They are now seen as the chief drivers of innovation.

Possible negatives

- Chronic disease continues to rise.
- Although individual diseases have been vanquished, others (which technology has yet to conquer) take their place – leaving as many sick as in 2011.
- Patient demand for high-tech quick fixes soars.

without having to know about its technical intricacies.

This scenario illustrates an innovative healthcare-delivery model, known as participatory medicine, in which networked patients shift from being passive recipients to being active drivers of their own healthcare and full partners to their healthcare providers. Tools such as Google Health, which is available in the USA, will become universally used and seamlessly integrated with national electronic health records. Such a change would make this patient-driven model possible, according to Mr Michel of Greater than One.

Technology will thrive in 2030 in part thanks to a new understanding between European governments and industry. Together, they will take a fresh look at medical innovation and its place in society. Instead of business interests alone spurring innovation, the new partnerships will define the healthcare research needs and wants of European society, and then compensate the companies that produce goods that meet those requirements. The profile of innovators will change, too, encompassing medical schools, as well as traditional big business. Dubbed "Responsible Innovation", the approach will reduce the impact of the profit motive on medical R&D. Pharmaceutical companies, the manufacturers of medical equipment, and healthcare-delivery facilities such as hospitals and clinics must all abide by the priorities set by the government-industry nexus.

Financing healthcare

In 2007 the Milken Institute, a US think tank, looked at a number of diseases, and found that the loss to the US economy owing to the lower productivity of the affected individuals was far greater than the government's expenditure on treatments for those conditions. The picture will be very different by 2030. Upfront public investment in R&D, funded by tax increases and higher insurance premiums, will be considerable in the years leading up to 2030. By 2030 the outlay will be more than recouped by society through the enhanced productivity and longer working lives of people who have benefited from medical advances. Tax revenue will rise, in turn helping to keep funds flowing into the system. In 2030, with health technology such a visible success, equity and venture capital markets will be ever more anxious to invest in the healthcare industry. A virtuous funding circle will have been created, with private equity investment pouring in, making possible reductions in the public financing of healthcare.

Risks to the scenario

It is always dangerous to rely on quick-fix, high-tech solutions to solve complex, system-wide problems. For example, without sufficient attention to prevention, technology alone is unlikely to check the steady spread of chronic diseases. Furthermore, even the most ardent technology advocate has to admit that science has its limits—not least because most researchers tend to focus on the same handful of high-profile chronic diseases. In 2030 people may be cured of heart disease, for example, only to find that they then get arthritis, dementia, or any of a number of other conditions. Matt Muijen, European regional advisor for mental health at the WHO, warns: "The powerful medical industry is likely to be most interested in profit-making treatments and wellbeing remedies targeting the rich, rather than interventions for conditions prevalent in poor countries."

2. Europe united

By 2030 Member States of the EU, having failed to solve the healthcare funding crisis at national level, will have agreed to unify their healthcare systems. The formal unification will take place around 2013, when the EU will establish a Brussels-based organisation to organise and standardise healthcare for the entire bloc. This healthcare colossus, named the European Federal Healthcare System (EFHS), will be charged with making healthcare financially sustainable across Europe, while ensuring that certain quality outcomes are met in all EU countries. In particular, the EFHS will have the following goals:

1. Systematic rationalisation of healthcare resources throughout Europe.

2. Harmonisation of healthcare standards across Europe.

3. Training and re-training of Europe's healthcare workforce.

4. Establishment of an integrated e-health system Europe-wide.

5. Harmonisation of the financial model for raising healthcare funds.

As part of an immediate rationalisation drive, the EFHS will create a number of Centres of Excellence. Each will specialise in the treatment of certain illnesses, and provide care to people across the continent through a combination of electronic communications and subsidiary or satellite clinics. Patients will be asked to travel to a relevant Centre of Excellence for top-quality medical care whenever possible. Once they have returned home, patients will have access to follow-up care through online e-health systems. This rationalisation of care centres will enable EU countries to close down large numbers of hospitals, so that by 2030 hospitals account for less than 20% of total healthcare spend

Scenario 2: Europe united

What if?

- European nations join forces to create a single, pan-European healthcare system.

The scenario

A new European Federal Healthcare System (EFHS)/Système Européen des Soins de Santé Fédéraux (SESF) puts in place the following strategy across Europe:

- Adaptation of the financial model for raising healthcare funds.
- Systematic rationalisation of healthcare resources .
- Harmonisation of healthcare standards across Europe.
- Establishment of an integrated e-health pathway Europe-wide.

2011 → 2030

Critical factors

- Public acceptance of widespread hospital closures.
- Training and re-training the healthcare workforce.
- Nurses are afforded greater responsibilities.
- Patients take more responsibility for managing their own care.
- Improvements in e-health literacy and access to the Internet.
- Greater transparency across the entire spectrum of health activities, including personal medical data.

Pros and cons

Possible positives

- Significant cost savings as a result of hospital cutbacks.
- Patients benefit from access to the best care available in Europe.
- The system promotes greater equality of care.

Possible negatives

- Politically unpalatable.
- General physicians are side-lined.
- Patients are reluctant to travel to get their healthcare.

compared with 30% in 2008. The healthcare workforce of 2030 will also be substantially reduced.

In addition to saving money, the new system will ensure consistent quality across the region. The EFHS will release guidelines—called Quality Standards for European Healthcare—in 2016, following a great deal of national political manoeuvring. As part of this system, EU countries will be required to supply statistical data on all national healthcare activities, as well as personal medical data. The personal records will be held in utmost confidentiality and aggregated at a central registry located in Italy. By 2030, relaxed rules on disclosure and analysis of medical data will improve understanding of which medical investments offer the best returns, measured in terms of both clinical excellence and patient satisfaction. The number-crunching carried out by the EFHS allows it to decide with accuracy which drugs, medical devices and types of medical care should be made available to all EU citizens.

The EFHS will also bear responsibility for ensuring that Europe's healthcare workforce remains up to snuff. Training and re-training courses will confer the all-important EFHS stamp of approval for those who complete them successfully. The training courses will include elements intended to acquaint Europe's healthcare professionals with the bloc's cultural diversity, so that doctors and nurses are able to treat patients of all European nationalities and backgrounds. The tasks of healthcare professionals will be redefined regularly to match the changing needs of the population. Nurses will be given an enhanced role in diagnosis and prescription. Healthcare professionals will be encouraged to work in the Centres of Excellence that best suit their personal skills.

Financing healthcare

To make the EFHS workable, a uniform method of financing healthcare will be agreed, after considerable debate among Member States. The EU will opt for an insurance-funded system modelled on that of Germany, which in 2011 was Europe's biggest healthcare spender. The political decision to adopt the spending levels of the most lavish state will lead initially to a sharp increase in the insurance premiums paid by most working Europeans. However, insurance premiums will ultimately fall, due to the radical rationalisation and restructuring of the hospital network. By 2030, premiums will stabilise at much the same level (in real terms) as they were in 2011. Given the cost pressures on healthcare, the EFHS will declare itself satisfied with that outcome, especially now that delivery of high-quality healthcare has become far more equitable across Europe.

Risks to the scenario

The key difficulty with this scenario is that the decisions required to institute a pan-European healthcare system are politically unpalatable, at least to electorates in 2011—and therefore unlikely to be taken. The emphasis placed on Centres of Excellence (actually centralised hospitals in another guise) could deflect attention from relying more on general physicians. Healthcare delivery through Centres of Excellence may be cost-effective, but patients nearly always prefer to be treated as close as possible to home. The Europe-united scenario also assumes nearly universal e-literacy and access to the Internet among Europeans of the next two decades, which may not turn out to be the case.

3. Wellness first

By 2030, Europe will shift its focus from treating the sick to promoting health. The landmark legislation institutionalising this shift will be the Wellness Reform Act of 2014. This will redirect attention and resources to preventing illnesses such as heart disease, diabetes, stroke and respiratory diseases, as well as preventing injuries such as those arising from road accidents and badly managed childbirth. Across Europe, countries will redirect public funds into immunisation, maternal healthcare, subsidising healthy foods for the poor, providing nutrition information programmes, building sports facilities, and establishing healthy environments such as safer roads, cleaner air and higher quality housing.

Innovation will broaden its focus from purely life sciences to include more attention to social sciences, for example developing robust tools to encourage healthier habits in entire populations. The innovative measures will include introducing reform legislation, banning certain types of advertising; imposing punitive taxation to discourage use of certain products; offering new insurance incentives; improving the quality of food in institutions; funding media campaigns to promote health awareness; and offering scaled-up diagnostic screening for at-risk segments of the population. The pharmaceutical and medical device companies that have survived the fallout following the introduction of the Wellness Reform Act will dedicate themselves to finding vaccines or to finding

Scenario 3: Wellness first

What if?

- European nations shift their emphasis from healthcare to health – away from providing treatment and care to people once they fall ill, and towards promoting the well-being of nations.

The scenario

European nations adopt nationwide public health programmes aimed at reducing the population's burden of disease and sickness. These include:

- Legal reform (banning junk-food advertising; outlawing sunbeds).
- Stepping up immunisation campaigns.
- Improving maternal and child health.
- Communicating nutrition information programmes.
- Supplying sports facilities and healthy habitats (road safety/housing).
- Public health education for professionals and non-professionals.
- E-health programmes that provide citizens with the daily support they need to improve their lifestyles.
- Promoting awareness among the public that they have a duty to care for their own health.

2011 → 2030

Critical factors

- The public engages with wellness programmes.
- GPs take on much of the responsibility for changing population behaviour, and are given incentives for doing so.
- Overhaul of innovation policies away from life sciences towards social sciences.
- Tax- or insurance-based incentives promote healthy living.
- Establishment of a European School of Public Health.
- High priority is given to public health at a political level.
- Pharmaceutical and medical device companies continue to innovate in the areas of vaccines, antibiotics and anti-virals.

Pros and cons

Possible positives

- Decline in incidence of lifestyle-related chronic diseases.
- Significant reduction in the Europe-wide costs associated with cardiovascular disease, diabetes and stroke.
- Increased work productivity.
- Improved performance of children in schools.

Possible negatives

- A long period passes before significant savings to healthcare budgets are noted.
- People with chronic illnesses become stigmatised by society.
- The programme could be entirely undermined by the rising incidence of other diseases unrelated to lifestyle factors.

replacements for bacterial- and viral-resistant drugs.

The outcome of social science research projects will lead to a total ban on advertising junk foods, as well as to clarified and harmonised rules on food labelling. This will help to clarify for the public which foods are healthful and which are not. Foods high in fat, salt, sugar and alcohol will be heavily taxed.

In addition, large-scale e-health programmes will provide daily support for adopting healthier lifestyles. People will be able to use their e-health support kit at work, at school, at home, and when travelling to access information and advice on a plethora of services to improve physical and mental wellbeing. Among the offerings will be advice and tips on diet, exercise, stress management and staying mentally alert.

Medical education will be given a makeover, making it a facet of public health education. Most of the curriculum will focus on the psychological triggers that motivate individuals to adopt or discard unhealthy habits. Social scientists will have identified general physicians as the primary channels to persuade individuals to adopt healthier ways. These doctors will devote much of their time to encouraging prevention. The public will come to regard general physicians as the honest brokers between themselves and the medical system, whose chief aim is to keep people healthy rather than to treat patients.

Individuals, meanwhile, will take on more responsibility for their own health. A European Public Health Group of Ministers will scrutinise all legislation at European or national level for its public health implications; this group's approval will be needed before proposed measures can become law.

Governments will benefit economically from this focus on disease prevention and promotion of public health. By 2030 healthcare spending will be reduced, while GDP will rise as fewer people drop out of the work force due to illness. For example, while in 2008 the cost to the EU economy of cardiovascular disease alone was an estimated €192bn—due to in lost productivity, healthcare outlays and spending on informal care—the cost of this disease to the EU of 2030 will be halved in real terms.

The improvements did not appear overnight. Reductions in the incidence of lifestyle-related chronic diseases take decades to appear. However, by 2030 positive signs will already be evident. These will include declining levels of obesity, hypertension and high blood cholesterol, and general improvement in work productivity and in children's academic performance. With this as backdrop, the EU will consider raising the retirement age to 70 or 72, which would further drive economic productivity gains. At the same time, a new sense of healthcare solidarity will take hold in Europe. By 2030, health-damaging behaviours will be regarded as anti-social, a drag on the collective wellbeing—just as smoking in restaurants was in the Europe of 2011. This sense will gradually extend to individuals who visibly damage or neglect their health in other ways, thereby increasing the potential burden on the healthcare system.

Financing healthcare

In the main, European governments will largely retain the traditional methods of financing healthcare in the next two decades—namely, through insurance and/or taxation. The financial incentives reinforcing healthcare systems, however, will be up-ended. Rather than being paid according to the number of patients they treat, doctors in 2030 will be paid based on the number of demonstrably

healthy people they look after. Individuals who can prove their positive health status will be rewarded in the form of lower health insurance premiums or tax payments. Foods that still carry a high fat, salt, or sugar content will attract an excise tax, which will be paid directly into the public healthcare system. Cigarettes and spirits will be so burdened by such taxes that their (legal) sales will plummet.

At the launch of the European Public Health Initiative in 2013, EU governments will issue an amnesty period of 20 years, during which time even people who neglect their health can receive healthcare paid by the state. By 2030, that amnesty period will be three years from coming to an end. From 2033, people who fall sick as a result of their unhealthy lifestyles will have no right to state-sponsored medical care for any lifestyle-induced medical condition with which they are diagnosed. Instead, they will have to pay out of pocket for treatment—although they will be able to choose from a wide array of private providers competing for their business.

The treatment and care of medical conditions unrelated to lifestyle, such as dementia, rare diseases, and many cancers and mental health problems, will remain supported by public funds. These treatments will be widely available, owing to the cost savings and efficiencies of the reformed healthcare system.

Risks to the scenario

This scenario depends on a political decision to give public health a very high priority. If that does not happen, vested interests such as a food industry aiming for less stringent labelling requirements, or even competing national spending priorities, could overpower public health advocates' claims. Progress towards a "wellness first" scenario can be expected to be slow and difficult. As Klaus Böttcher of German insurer KKH-Allianz notes: "The German government has not been able to pass any new government act aimed at disease prevention. Discussions have gone on for ten years, without any results."

An attempt to solve healthcare's financial ills through public health measures is also overly reliant on the active co-operation of the public, which could prove to be fickle. Johann Hjertqvist, founder and president of Sweden's Health Consumer Powerhouse, argues: "People are dependent on the system to look after them, and are not engaged enough with healthcare. Getting people to become more engaged with healthcare will take radically improved consumer information and incentives. In the case of public health, there is even less chance of success in educating people—especially those in poverty and with low levels of literacy."

Moreover, although people can improve their lifestyles, infection and rare diseases will still be present, and not all of these are preventable. Even worse, other, age-related conditions such as dementia or many cancers may appear as the new prevalent diseases of the day. This could cause healthcare costs to continue their rise, despite efforts to focus on prevention.

4. Spotlight on the vulnerable

Rather than struggle to provide costly healthcare to all citizens, European governments will decide early in the current decade to focus their healthcare efforts on reducing health inequality. This will involve directing resources to the most vulnerable members of society, including people aged 70 and older regardless of income; the poor; people with mental health problems; and ethnic minorities. The concept of vulnerability will extend to include entire countries in the east of Europe with low average life expectancies. The new system will aim to improve the quality of life for these population segments and—in an extension of the "health is wealth" idea—ultimately to boost their economic contributions.

Proponents of this approach include Karen Taylor of the UK National Audit Office. "When healthcare ends up being too costly, the vulnerable get sidelined, but the articulate continue to exert enough pressure on the system to get what they want," she says. Her view is shared by a global cancer specialist, Richard Sullivan of King's Health Partners: "We see a widening of the gap between the incidence of cancer among the affluent and among the deprived. Without appropriate action, the main beneficiaries of scientific advances in medicine will be the populations of the richer countries, like the Netherlands and Sweden. Outcome improvements will be far less evident in more deprived countries."

The key piece of legislation promoting a focus on vulnerability will be the European Act in Support of the Vulnerable (EASV), which will be adopted in the middle of the current decade. The Act will be the natural follow-on to a 2007-10 EU-funded programme called DETERMINE, which emphasised the importance of improving the health of vulnerable groups at a faster rate than that

Scenario 4: Spotlight on vulnerability

What if?

- European nations were to focus medical resources on vulnerable members of society.

The scenario

European nations scrap their healthcare and social-care systems and replace them with new facilities designed to tackle the wide-ranging needs of vulnerable communities (older people, the poor, ethnic minorities, people with a mental health problem, and people with the lowest life expectancies). Features of the system would be:

- Decentralised management of funds at local community level.
- Co-ordination of a range of services that go beyond healthcare, aimed at vulnerable local communities.
- Services to include home visits, programmes to tackle stigma, and advocacy programmes.
- Support for self-help groups at local community level.
- Nurses appointed as personal administrators to ensure that individual needs are met.
- Large databank of personal data for benchmarking and planning.

2011 → 2030

Critical factors

- The public engage with vulnerable programmes.
- Medical profession supports the notion of caring for vulnerable communities.
- Possibly very costly at the outset.
- Dependent on getting value-for-money from investment decisions, so data collected and processed must be of high quality.
- E-health has to adjust its output to accommodate the needs of different ethnic cultures and disabilities.

Pros and cons

Possible positives

- Vulnerable communities see improvements to their quality of life.
- Economic contribution of the vulnerable communities helps pay for investments made towards their treatment, care and support.

Possible negatives

- Discriminates against large sectors of the population.

of the rest of the population. A December 2009 report produced by DETERMINE highlighted some alarming consequences of health inequalities. Across 25 EU Member States, health inequalities were estimated to reduce healthy life expectancy by an average of 5.14 years, corresponding to a total of approximately 33m healthy life years lost. Health inequalities, DETERMINE said, are triggered by factors outside the reach of the healthcare system, such as low income, unemployment, poor environment, inadequate education and sub-standard housing.

To close those gaps, EU governments will replace traditional healthcare institutions with new facilities catering to vulnerable groups. Their aim will be to foster formation of self-sufficient communities capable of looking after their own needs. Unni Hembre President of the European Federation of Nurses Associations and a powerful advocate of prevention, says a key step will be to start early with a regular screening of all individuals' physical and mental health status. Such a service is already on offer in Norway, where children from 0-18 years of age are screened for threats to their health. This, in turn, allows communities to become aware of the vulnerable and to take appropriate measures. Her view is that access to healthcare should not depend on income: "Even if we have a welfare state in Norway, we have differences, and the less well-paid have shorter lives. In a European setting, the differences are even greater". She adds that nurses are well placed to play a key role in prevention schemes.

With that view in wide circulation, Europe in 2030 will place healthcare in the context of a wider spectrum of social services including home healthcare visits, programmes to tackle stigmatisation and promote social integration, and advocacy initiatives in which vulnerable people are taught how to get the best out of the systems and services available to them. A large infrastructure of local self-help groups, partly subsidised by government, will develop, offering advice and support to vulnerable groups and individuals.

All of the programmes will be underpinned by a huge databank of personal information, allowing governments to set benchmarks and provide real value to the target communities. Sophisticated electronic communication systems, fine-tuned to the needs of older and culturally diverse people, will enable social care and healthcare to reach target populations, even in remote areas.

The entire healthcare delivery structure will be reformed, so that the boundaries between general physicians and specialists are no longer evident. Instead, each becomes one service sector upon which all people, but especially vulnerable ones, can draw. Nurses, trained to understand and to co-ordinate the personal needs of each of their clients, play a pivotal role, ensuring access to the system for those who need it.

The EASV legislation will bring few benefits to those not identified as "vulnerable". But the broad public of 2030 will still support the programme, knowing that support will be there if and when they need it, due to illness, old age or poverty. As for the vulnerable, the improvement in their quality of life and in their ability to contribute economically to society has more than paid for the public investments in reaching out to them.

Financing healthcare

Healthcare and social budgets will be integrated to create a large fund for local community

programmes. The funds will be pooled at European and national level, and distributed to local administrators in charge of community programmes. The funds will be raised via insurance- or tax-based systems. Private insurance is available for people not eligible for benefits aimed at vulnerable groups.

Risks to the scenario

An approach that concentrates on care of the vulnerable discriminates against whole sectors of the population, who are required to underwrite the treatment and care of the least fortunate. Parts of the medical profession, among others, may resist an approach that channels medical services to selected populations.

5. Laissez-faire

Although none of the panel of experts considers that the private sector should be given free rein with regard to European healthcare systems, an implicit understanding is present among them that the private sector needs to play a larger role, if only as a supplementary source of capital. Therefore under this scenario, by 2030 the private sector will take over the financing, running and delivery of healthcare for all but the poorest members of society.

Faced with a massive shortfall in their budgets, governments across Europe–unilaterally and over a period of ten years–will turn over most of their healthcare systems to private insurers and care providers. Only a small proportion of healthcare will be paid by the state, and only for the very poor. Government's role will be mainly to improve citizens' health literacy, encourage people to make informed healthcare choices, and expand e-health systems to enable good continuity of care. As a last resort for the terminally ill, some governments will relax legal barriers to assisted suicide.

The first country to make the radical leap towards privatisation will be Germany, reeling from street riots in mid-decade as citizens became angry over high insurance premiums. The high prices are caused by overstaffing in the healthcare system, generous benefits, and hidden cartels and agreements that kept prices of healthcare services and products high. In any case, in response to an outcry over high premiums, Germany will privatise its insurance sector, but with two big preconditions: that health insurance is mandatory for all, and that private insurers may not reject high-risk or chronically ill individuals. Insurers, nonetheless, will find ways around the law, for example by imposing higher

Scenario 5: Laissez-faire

What if?

- European nations were to privatise their entire healthcare systems.

The scenario

- Europe's healthcare is mainly financed through private insurance.
- Insurers form large, pan-European, integrated networks of managed care in Europe, as in the US.
- These integrated health networks make cutbacks in healthprovision.
- Insurers impose tough regimes to encourage the adoption of healthy lifestyles among their members.
- Pharmaceutical companies generate the bulk of their revenue from performance-enhancing drugs (e.g. for memory, anti-ageing).

2011 → 2030

Critical factors

- EU approves the formation of pan-European, integrated health networks.
- Health insurance is made mandatory.
- Public funds are dedicated to paying for healthcare of the very poor.
- Healthcare markets are deregulated on a pan-European scale.
- Government establishes e-health infrastructure across Europe.

Pros and cons

Possible positives

- European citizens are afforded access to integrated healthcare systems in which their various needs are well-co-ordinated and care is available from centres of excellence across Europe.
- The incidence of lifestyle-related chronic disease drops.

Possible negatives

- With drug prices capped by managed care providers, levels of medical innovation decline.
- Although health insurance has been made mandatory, large swathes of the population are uninsured as the system is difficult to police.
- The system is not prepared to cope with pandemics.

premiums on patients who lead unhealthy lifestyles.

The trend will spread from Germany to other European countries. In 2020, with the blessing of the EU, the fragmented insurance industry will enter into a round of mergers and acquisitions. By 2030 only five major companies will account for 80% of the health insurance sector across Europe. Klaus Böttcher of KKH-Allianz already sees signs of such consolidation. "Ten years ago, we had more than 1,000 health plans in Germany, now there are fewer than 200," he says. "I expect we will have a maximum of 50 in ten years. There will be only a few large national health plans."

Financing healthcare

The five largest insurers will leverage themselves up to the hilt to raise sufficient capital to buy numerous hospitals and primary care providers, building healthcare networks across Europe by 2030. This sort of vertical integration will be strictly forbidden until 2025, but after significant lobbying by the major health insurers, the European Commission will cave in, passing a law that requires Member States to deregulate the healthcare sector. A round of sharp coverage cutbacks will follow, as the few big insurers seek to maximise their returns. Slowly and surely, Europe will see its social healthcare system transformed into US-style managed care system—with the key difference that health insurance will remain mandatory in the EU, whereas it will remain voluntary in the US.

Liberated from price restraints, the life sciences industries will also undergo a transformation. Their main source of revenue will be from selling pharmaceuticals of choice, such as drugs to enhance memory or otherwise diminish the effects of ageing. Performance pills will be among the fastest growing segments of the life sciences industry. Pharmaceuticals companies will grow into ever-larger empires by merging with consumer goods giants.

Risks to the scenario:

As in the US, the system will work well at the outset. Europe's big five insurers will become hugely profitable, and insured individuals will receive truly integrated care, albeit delivered at different locations across Europe. But by 2030 life expectancies in Europe will start to fall, for three reasons:

- With privatisation of insurance, many young and healthy people will try to escape the system to save money. Although participation will be mandatory, many will succeed in staying out, due to poor policing. By 2030, these young people will near retirement age, falling sick and lacking health cover.
- Innovation in traditional medical areas will fall sharply. The five big insurers have suppressed drug prices to a point where many of the big pharmaceuticals firms have abandoned innovation.
- The system will not be geared to cope with pandemics.

Conclusion

By 2030, Europe may find a way to redesign its healthcare systems so they fit the purpose for which they were created. In particular, that would mean the systems are re-set on a firm financial foundation, so that they can pay for the increased healthcare burdens created by ageing populations. However, in 2011 no blueprint for such a transformation can be found anywhere in Europe. There are many theories and recommendations for dealing with the fiscal crisis in healthcare, but no obvious consensus on which among them offers the best way forward.

The failure to develop a coherent plan of action is linked to deep-rooted problems in the healthcare system. For one thing, the system is both enormous and fragmented. For another, participants are fractious, defending their self-interest whenever possible. Doctors fight for continued free rein to prescribe medications and courses of treatment. Other healthcare professionals seek to elevate their own status and acquire some of those rights themselves. Industry strives to defend its investment. Payers remain intent on spending less. Patients suspect that their public healthcare system is not delivering all the benefits it could, despite escalating costs.

Yet in spite of these impediments and difficulties, virtually all agree that universal, egalitarian healthcare coverage is the correct goal to strive for, and that a way must be found to deliver on that promise in a sustainable way. Europe's healthcare systems may be defective and financially unstable, but they are still valued for the promise they offer—that all can plan on a medical safety net at an affordable cost.

This report aims to synthesise the views of the main factions within healthcare to show where they might lead by 2030. This is done by means of five contrasting scenarios, which are by nature exaggerated versions of the likely future reality. Any of these visions could prevail, but there are equally compelling reasons why each one might not. The main lesson to be gained from the diverse nature of the possible outcomes is that the system requires more flexibly in devising solutions to its financial problems. Flexibility, in turn, implies that the best interest of actors in the system may lie not in defending their own turfs, but rather in finding a sustainable basis to ensure the future health of all Europe's citizens.

Appendix I - Data Sources

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Appendix II – Interview Programme

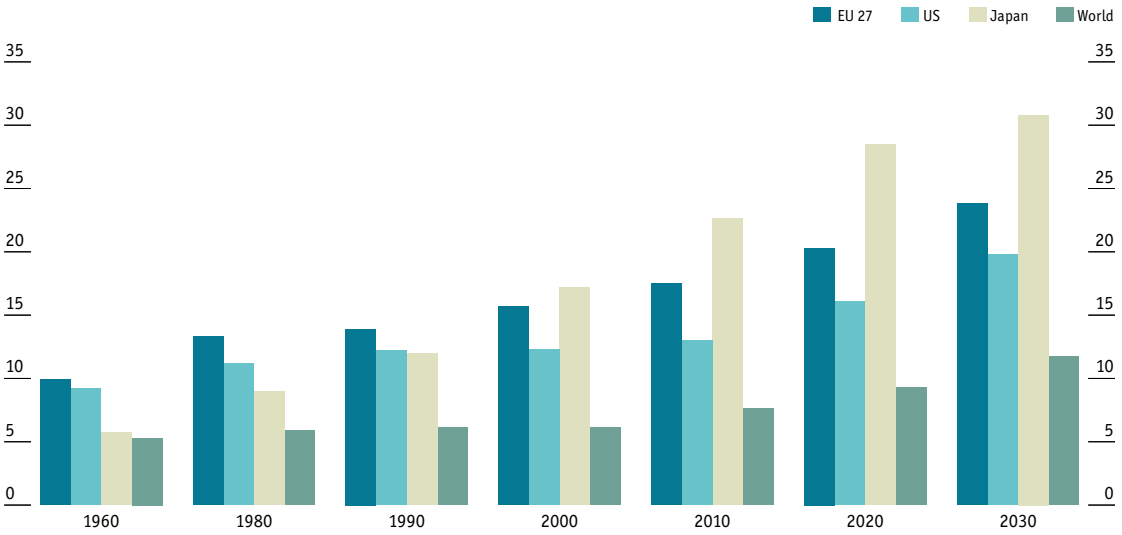
The Economist Intelligence Unit would like to thank the following experts (listed alphabetically by organisation name) who participated in the in-depth interview programme:

- Dr Natalie-Jane Macdonald, managing director, BUPA Commissioning, UK
- Dr Petra Wilson, senior director, public sector healthcare, Cisco Internet Business Solutions Group, Europe
- Ms Unni Hembre, president, European Federation of Nurses Associations, Norway
- Professor Hans-Georg Eichler, senior medical officer, European Medicines Agency (EMA), EU
- Dr Antonyia Parvanova, member, European Parliament, Bulgaria
- Dr Bernard Maillet, secretary general, European Union of Medical Specialists (UEMS), Europe
- Mr Kimmo Leppo, former director general, Finland Ministry of Social Affairs and Health—Health Department, Finland
- Professor Marco Steinberg, director of strategic design, Finnish Innovation Fund (Sitra), Finland
- Professor Volker Amelung, president, German Managed Care Association, and professor for health systems research, Hannover Medical University, Germany
- Mr Marc Michel, managing director, Greater than One (Europe), Spain
- Mr Johan Hjertqvist, founder and president, Health Consumer Powerhouse, Sweden/Europe
- Dr Margaret O'Riordan, head of quality and standards, Irish College of General Practitioners, Ireland
- Mr Stephen McMahon, CEO, Irish Patients Association, Ireland
- Professor Guido Rasi, director general, Italian Medicines Agency (AIFA), Italy
- Professor Richard Sullivan, director of global oncology policy, King's Health Partners Integrated Cancer Centre, UK
- Mr Klaus Böttcher, head of the department of performance and contract management, contributions, and long-term care, KKH-Allianz, Germany
- Professor Martin Bobrow, chairman, Muscular Dystrophy Campaign, UK
- Ms Karen Taylor, director, health value for money audit, National Audit Office, UK
- Lord Nigel Crisp, former chief executive, National Health Service, UK
- Dr Edith Schippers, minister of health, Netherlands Ministry of Health
- Mr Mark Pearson, head of health division, OECD, Global

- Dr Richard Smith, director, United Health Chronic Disease Initiative, UK
- Mr John Chave, secretary general, Pharmaceutical Group of the EU (PGEU), Europe
- Mr Stephan Gutzeit, executive director, Stiftung Charité, Germany
- Mr Richard Bergström, director general, Swedish Association of the Pharmaceuticals Industry (LIF), Sweden
- Mr Stephen Bevan, managing director, The Work Foundation, UK
- Dr Mukesh Chawla, manager, health, nutrition and population, World Bank—Human Development Network, Global
- Mr Matt Muijen, European regional advisor for mental health, World Health Organization (WHO), Europe

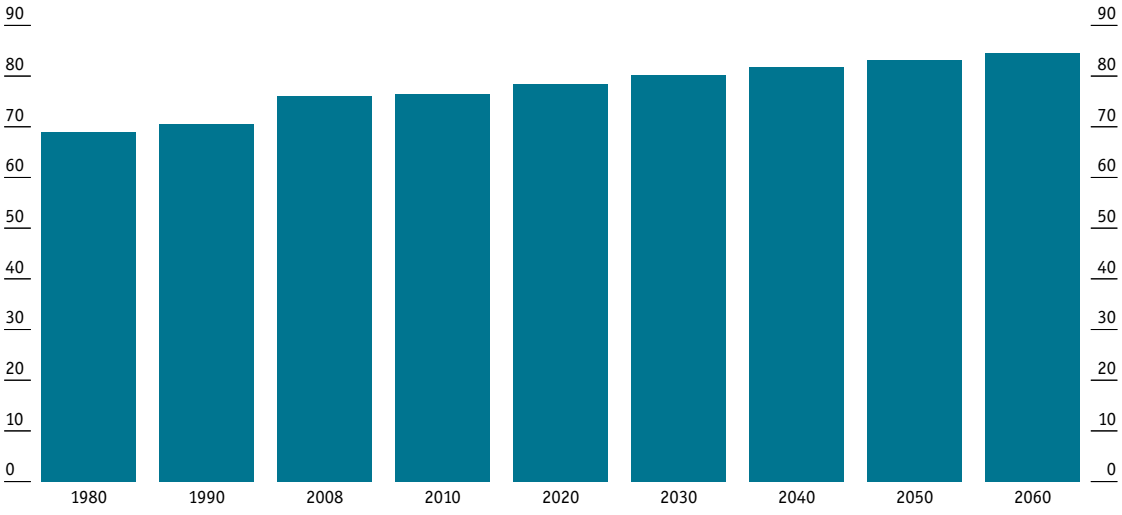
Appendix III - Charts and Figures

Chart 1: Percentage of people aged 65 and over in total population
(%)



Note: Figures for the years 2010, 2020 and 2030 are United Nations projections.
Source: United Nations, *World Population Prospects;* Office of Health Economics.

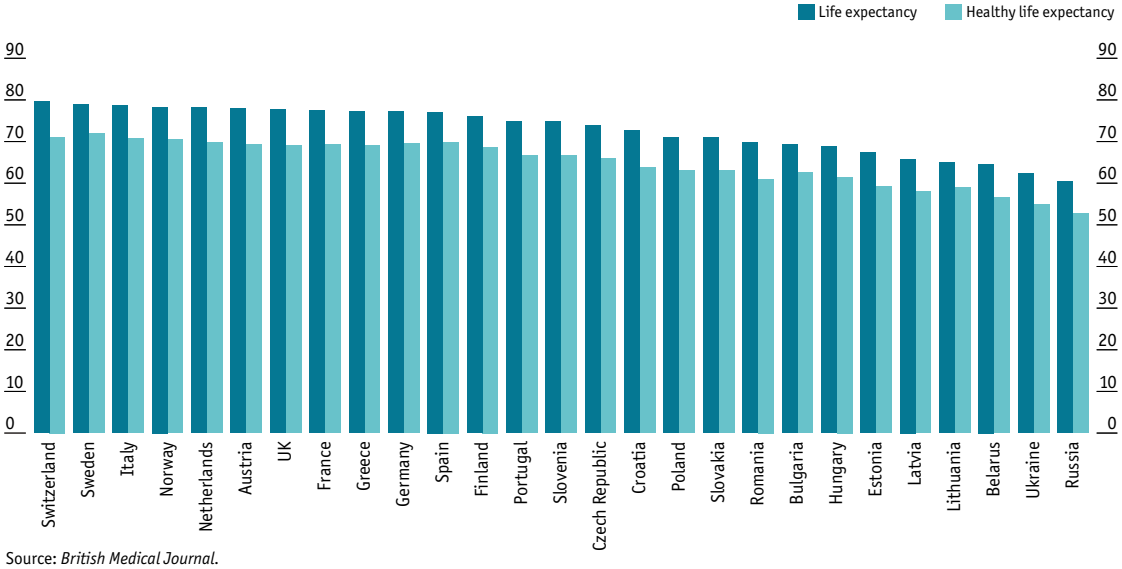
Chart 2: Past and projected life expectancy at birth, males, EU 27



Note: Average not calculated for 2000.
Source: Eurostat.

Chart 3a: Healthy life expectancy compared to overall life expectancy

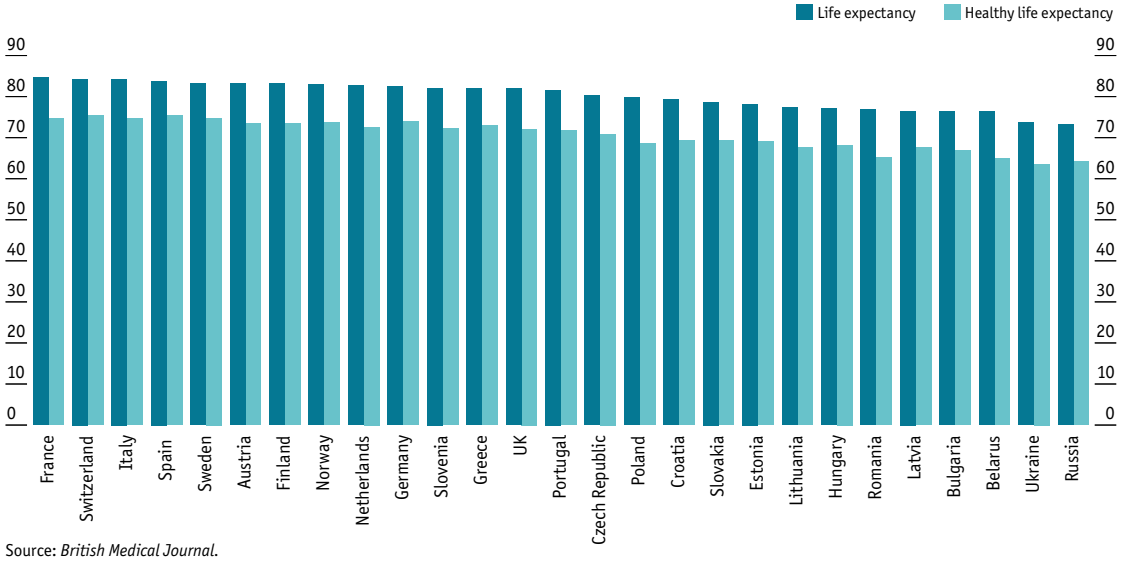
(Male Life Expectancy at birth (LE) and Healthy Life Expectancy (HALE) in Europe: developed versus developing countries. Last available data 2006-2008)



Source: *British Medical Journal.*

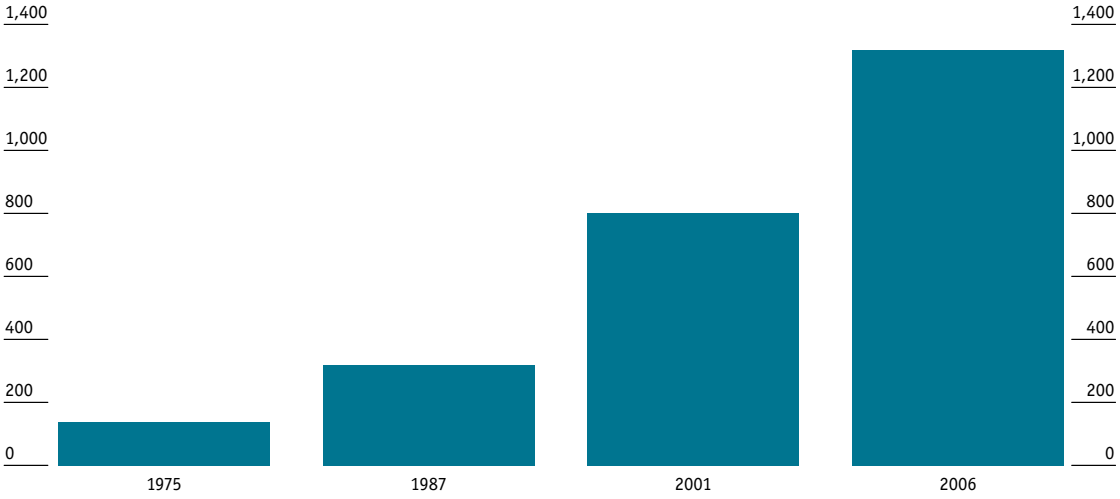
Chart 3b: Healthy life expectancy compared to overall life expectancy

(Female Life Expectancy at birth (LE) and Healthy Life Expectancy (HALE) in Europe: developed versus developing countries. Last available data 2006-2008)



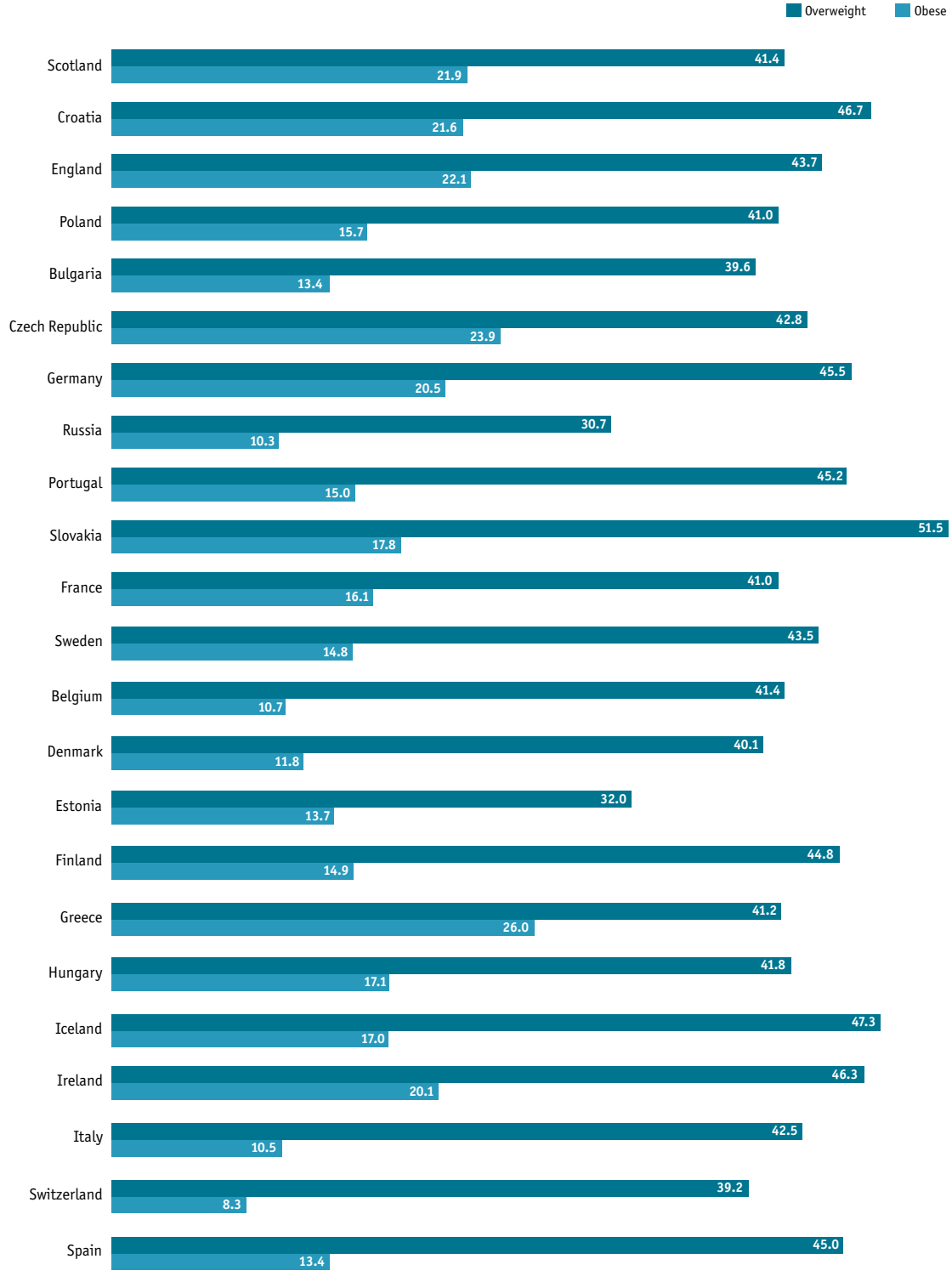
Source: *British Medical Journal.*

Chart 4: Full cost of bringing a new chemical or biological entity to market
(US$ m in 2005 dollars)



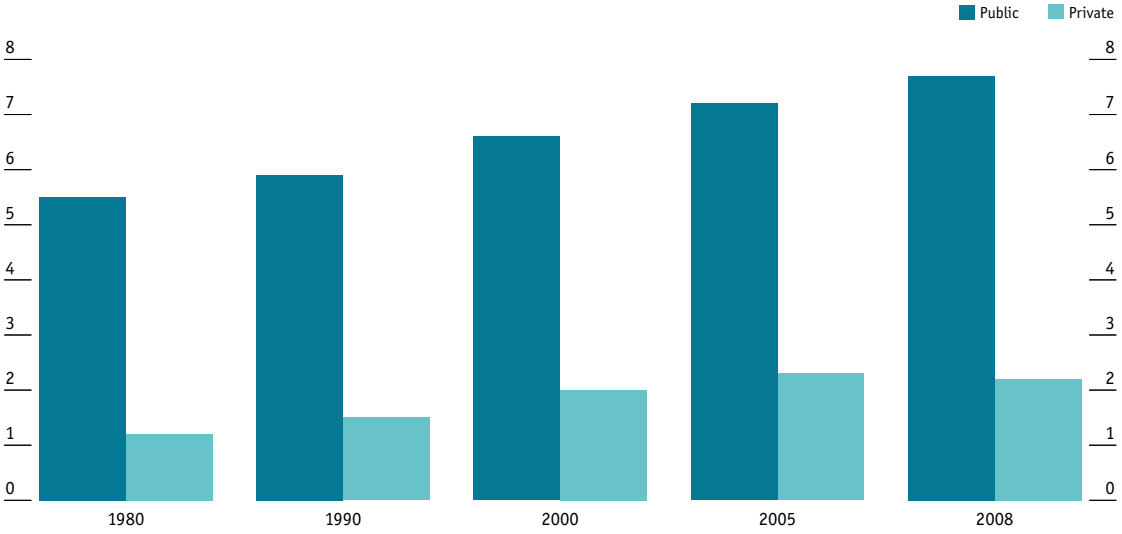
Sources: J.A. DiMasi and H.G. Grabowski, "The Cost of Biopharmaceutical R&D: Is Biotech Different?" *Managerial and Decision Economics 28* (2007), pp. 469-479

Chart 5: Overweight and obese populations in Europe, males
(%)



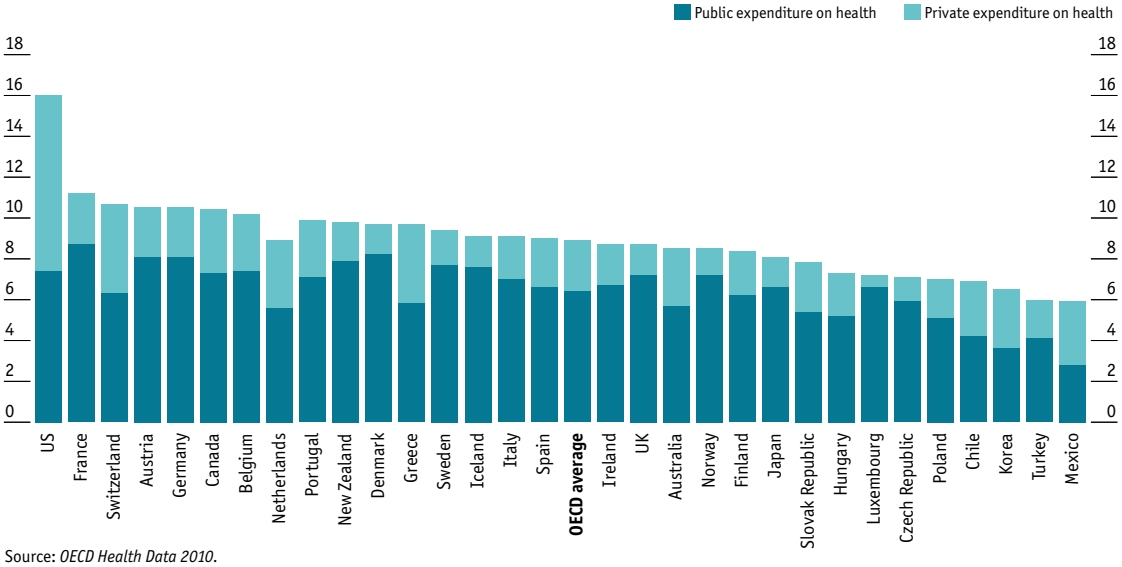
Note: Overweight defined as % Body Mass Index 25 - 29.9; and obesity defined as % Body Mass Index 30+
Source: International Association for the Study of Obesity, 2011.

Chart 6: Health expenditure as a share of GDP, EU 27
(% of GDP)



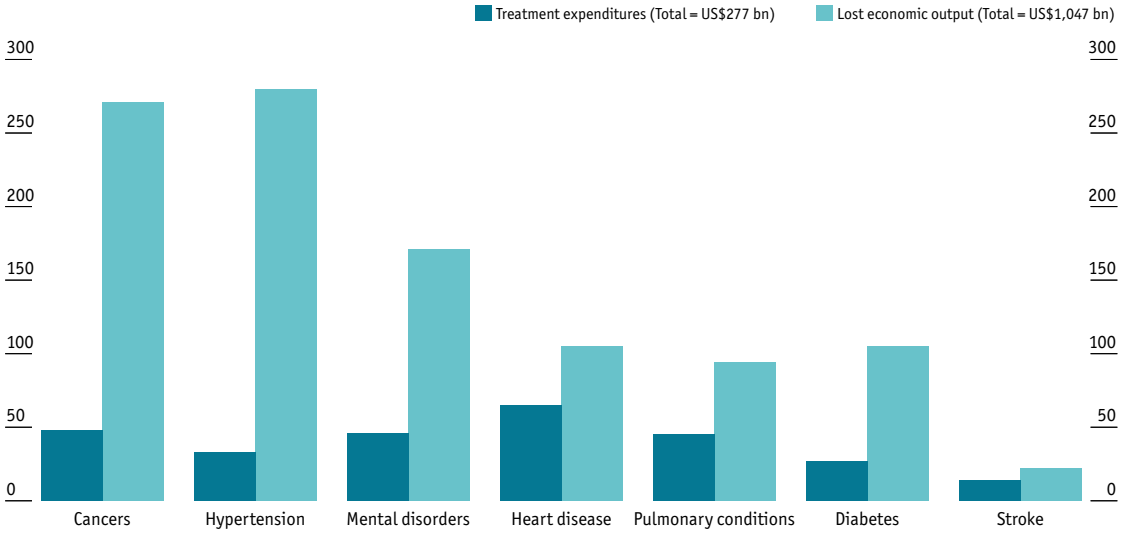
Source: Eurostat.

Chart 7: Health expenditure as a share of GDP in OECD countries, 2008
(% of GDP)



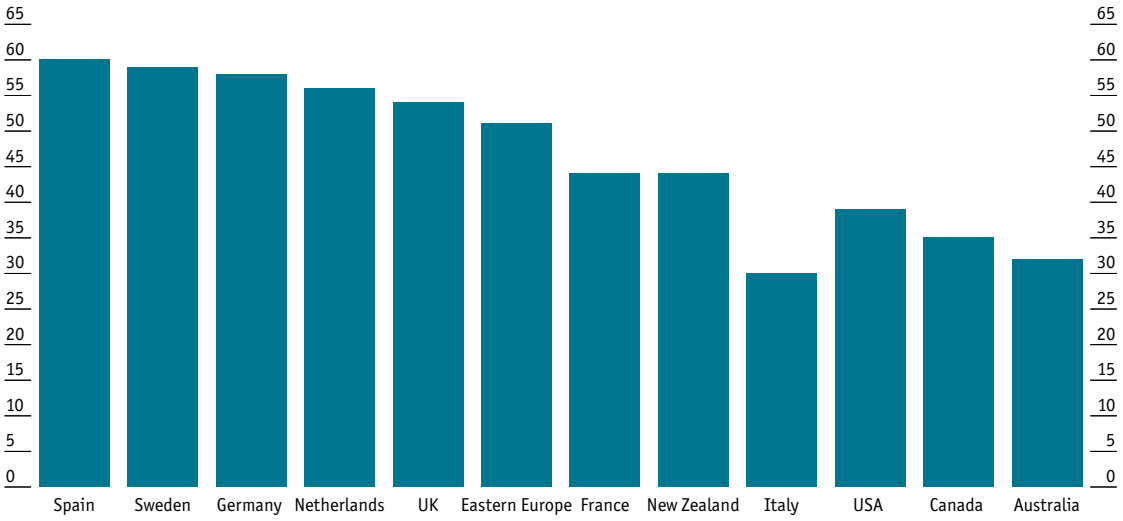
Source: *OECD Health Data 2010.*

Chart 8: Total economic cost of chronic disease, US, 2003
(US$ bn)



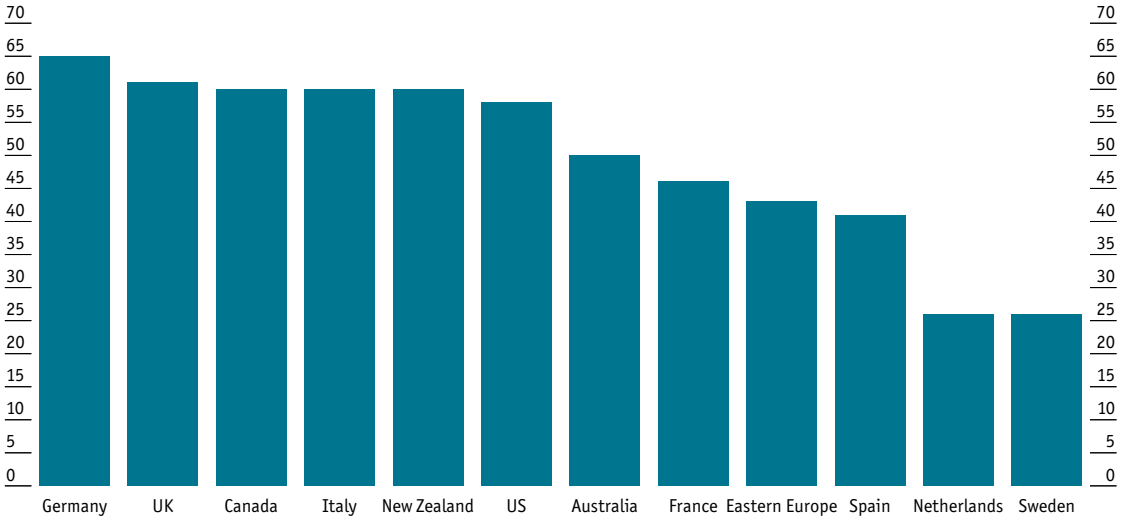
Source: The Milken Institute.

Chart 9: Share of patient groups saying that health professionals should make care decisions irrespective of cost
(%)



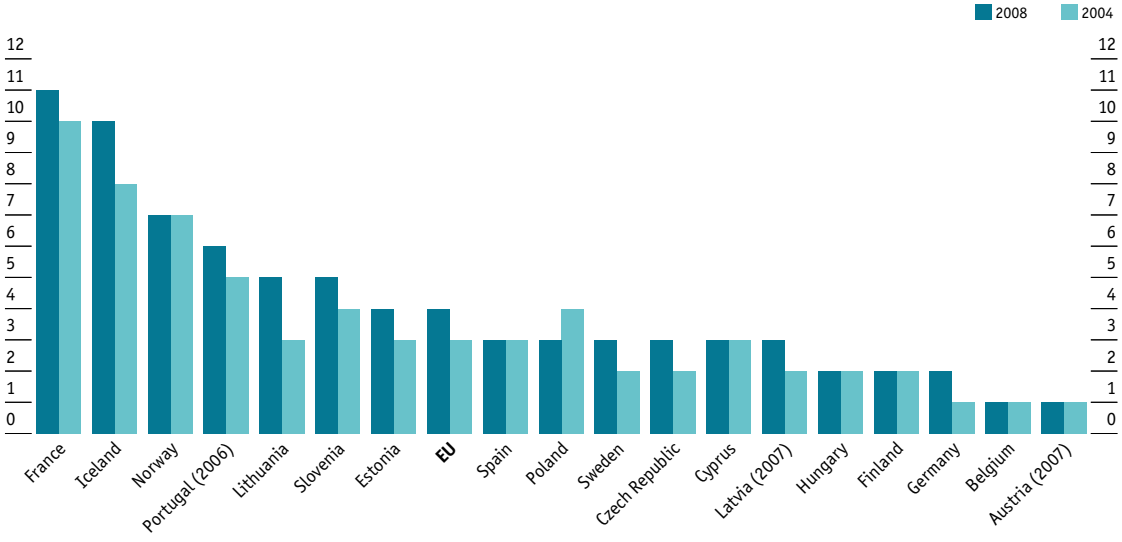
Source: *PatientView (Global survey of 2,500 patient groups), PatientView Quarterly,* February 2011

Chart 10: Share of patient groups supporting easier patient access to diagnosis and treatment by health professionals
(%)



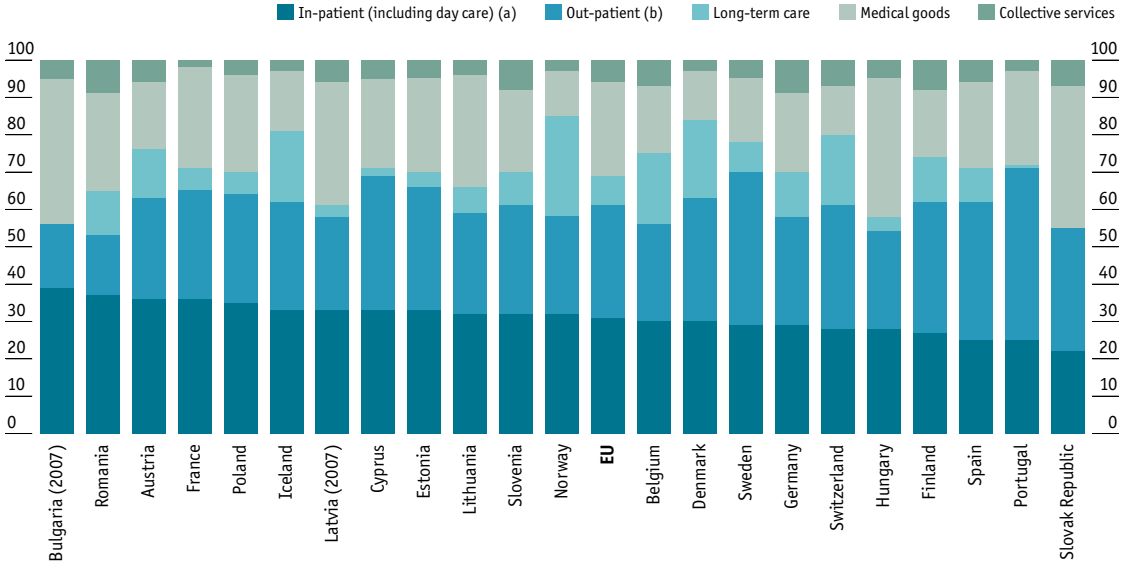
Source: *PatientView (Global survey of 2,500 patient groups), PatientView Quarterly,* February 2011

Chart 11: EU day care as a share of total curative care expenditure, 2008 vs 2004
(% expenditure on curative care)



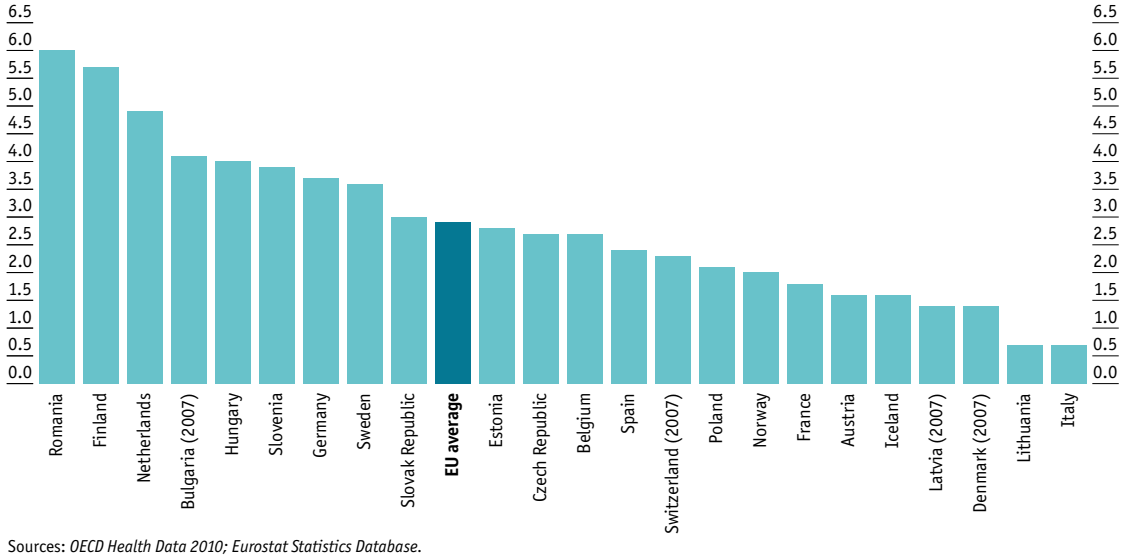
Note: Day care services provided in hospitals, day surgery clinics and other settings.
Sources: *OECD Health Data 2010; Eurostat Statistics Database.*

Chart 12: Expenditure on in-patient care as a percent of total, EU, 2008
(Countries are ranked by in-patient curative care as a share of current expenditure on health)



(a) Refers to curative and rehabilitative in-patient and day care services provided in hospitals, day surgery clinics, etc.
(b) Refers to curative and rehabilitative care in doctors' offices, clinics, out-patient departments of hospitals, home-care and ancillary services.
Sources: *OECD Health Data 2010; Eurostat Statistics Database.*

Chart 13: OECD expenditure on public health and prevention programmes, 2008
(%)



Sources: *OECD Health Data 2010; Eurostat Statistics Database.*

Scenario 1: Technology triumphant

What if?

- Technology marches forward on all fronts: from nanotechnology to biotechnology, from material sciences to genomics.
- Healthcare is not viewed as a cost, but as a major investment.
- 20% of GDP is spent on healthcare, a large chunk of which goes towards technological improvements.
- The stable, political economies of Europe foster a climate for entrepreneurism.
- Health systems are finally able to reform their business models to promote cost-effective innovation.

The scenario

- Technology has triumphed, and can now cure many chronic diseases.
- The phenomenon is pan-European.
- E-health has ensured that healthcare is well managed.

2011 2030

Critical factors

- Regulators provide proper incentives for improved technologies.
- Health provision is reformed to ensure that the treatments are prescribed appropriately, and followed to their best effect by patients.
- Regulators and payers work harmoniously together to ensure that innovation meets the needs of the population, and that all individuals have access to the latest, most effective medical interventions.
- Industry forms partnerships to innovate.

Pros and cons

Possible positives

- The society-wide financial benefits of patients being able to return to work, or live independently, has more than paid back innovation costs.
- Drug companies are no longer vilified. They are now seen as the chief drivers of innovation.

Possible negatives

- Chronic disease continues to rise.
- Although individual diseases have been vanquished, others (which technology has yet to conquer) take their place – leaving as many sick as in 2011.
- Patient demand for high-tech quick fixes soars.

Scenario 2: Europe united

What if?

- European nations join forces to create a single, pan-European healthcare system.

The scenario

A new European Federal Healthcare System (EFHS)/Système Européen des Soins de Santé Fédéraux (SESF) puts in place the following strategy across Europe:

- Adaptation of the financial model for raising healthcare funds.
- Systematic rationalisation of healthcare resources .
- Harmonisation of healthcare standards across Europe.
- Establishment of an integrated e-health pathway Europe-wide.

2011 2030

Critical factors

- Public acceptance of widespread hospital closures.
- Training and re-training the healthcare workforce.
- Nurses are afforded greater responsibilities.
- Patients take more responsibility for managing their own care.
- Improvements in e-health literacy and access to the Internet.
- Greater transparency across the entire spectrum of health activities, including personal medical data.

Pros and cons

Possible positives

- Significant cost savings as a result of hospital cutbacks.
- Patients benefit from access to the best care available in Europe.
- The system promotes greater equality of care.

Possible negatives

- Politically unpalatable.
- General physicians are side-lined.
- Patients are reluctant to travel to get their healthcare.

Scenario 3: Wellness first

What if?

- European nations shift their emphasis from healthcare to health – away from providing treatment and care to people once they fall ill, and towards promoting the well-being of nations.

The scenario

European nations adopt nationwide public health programmes aimed at reducing the population's burden of disease and sickness. These include:

- Legal reform (banning junk-food advertising; outlawing sunbeds).
- Stepping up immunisation campaigns.
- Improving maternal and child health.
- Communicating nutrition information programmes.
- Supplying sports facilities and healthy habitats (road safety/housing).
- Public health education for professionals and non-professionals.
- E-health programmes that provide citizens with the daily support they need to improve their lifestyles.
- Promoting awareness among the public that they have a duty to care for their own health.

2011 2030

Critical factors

- The public engages with wellness programmes.
- GPs take on much of the responsibility for changing population behaviour, and are given incentives for doing so.
- Overhaul of innovation policies away from life sciences towards social sciences.
- Tax- or insurance-based incentives promote healthy living.
- Establishment of a European School of Public Health.
- High priority is given to public health at a political level.
- Pharmaceutical and medical device companies continue to innovate in the areas of vaccines, antibiotics and anti-virals.

Pros and cons

Possible positives

- Decline in incidence of lifestyle-related chronic diseases.
- Significant reduction in the Europe-wide costs associated with cardiovascular disease, diabetes and stroke.
- Increased work productivity.
- Improved performance of children in schools.

Possible negatives

- A long period passes before significant savings to healthcare budgets are noted.
- People with chronic illnesses become stigmatised by society.
- The programme could be entirely undermined by the rising incidence of other diseases unrelated to lifestyle factors.

Scenario 4: Spotlight on vulnerability

What if?

- European nations were to focus medical resources on vulnerable members of society.

The scenario

European nations scrap their healthcare and social-care systems and replace them with new facilities designed to tackle the wide-ranging needs of vulnerable communities (older people, the poor, ethnic minorities, people with a mental health problem, and people with the lowest life expectancies). Features of the system would be:

- Decentralised management of funds at local community level.
- Co-ordination of a range of services that go beyond healthcare, aimed at vulnerable local communities.
- Services to include home visits, programmes to tackle stigma, and advocacy programmes.
- Support for self-help groups at local community level.
- Nurses appointed as personal administrators to ensure that individual needs are met.
- Large databank of personal data for benchmarking and planning.

2011 2030

Critical factors

- The public engage with vulnerable programmes.
- Medical profession supports the notion of caring for vulnerable communities.
- Possibly very costly at the outset.
- Dependent on getting value-for-money from investment decisions, so data collected and processed must be of high quality.
- E-health has to adjust its output to accommodate the needs of different ethnic cultures and disabilities.

Pros and cons

Possible positives

- Vulnerable communities see improvements to their quality of life.
- Economic contribution of the vulnerable communities helps pay for investments made towards their treatment, care and support.

Possible negatives

- Discriminates against large sectors of the population.

Scenario 5: Laissez-faire

What if?

- European nations were to privatise their entire healthcare systems.

The scenario

- Europe's healthcare is mainly financed through private insurance.
- Insurers form large, pan-European, integrated networks of managed care in Europe, as in the US.
- These integrated health networks make cutbacks in healthprovision.
- Insurers impose tough regimes to encourage the adoption of healthy lifestyles among their members.
- Pharmaceutical companies generate the bulk of their revenue from performance-enhancing drugs (e.g. for memory, anti-ageing).

Critical factors

- EU approves the formation of pan-European, integrated health networks.
- Health insurance is made mandatory.
- Public funds are dedicated to paying for healthcare of the very poor.
- Healthcare markets are deregulated on a pan-European scale.
- Government establishes e-health infrastructure across Europe.

Pros and cons

Possible positives

- European citizens are afforded access to integrated healthcare systems in which their various needs are well-co-ordinated and care is available from centres of excellence across Europe.
- The incidence of lifestyle-related chronic disease drops.

Possible negatives

- With drug prices capped by managed care providers, levels of medical innovation decline.
- Although health insurance has been made mandatory, large swathes of the population are uninsured as the system is difficult to police.
- The system is not prepared to cope with pandemics.

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