



# Pharma's New Productivity Challenge: Perspectives from Europe



## What is PharmaFutures?

*PharmaFutures* was set up in 2003 as a dialogue between pharmaceutical executives, institutional investors and societal stakeholders to explore long-term value drivers for the pharmaceutical industry and its evolving social contract. The dialogues are based on the premise that the industry and its investors thrive when it is seen as socially useful and that if that perception falters, so does the business model. The fifth *PharmaFutures* dialogue began in November 2011 and focuses on the new productivity challenge facing the pharmaceutical industry: that of persuading purchasers of pharmaceutical products that they offer value, not just to the patient, but also to cash-strapped health systems seeking productivity gains.

*PharmaFutures* is a global project, reflecting the global nature of the pharmaceutical industry. The latest dialogue takes place over two years and is divided into discussions on three major markets: Europe, Emerging Markets and the US. It will conclude with the publication of a global report on its findings in summer of 2013.

The *PharmaFutures* dialogues are run by not for profit company, Meteos Ltd. This latest Meteos *PharmaFutures* report summarises the findings of its research and discussions about European pharmaceuticals markets undertaken between November 2011 and May 2012.

## Methodology

This report summarises the findings of extensive desktop research, semi-structured interviews with members of the *PharmaFutures* Working Group and other experts, plus Working Group discussions in March 2012.

This report is written by Sophia Tickell, Director, *PharmaFutures*, with invaluable contributions from Charis Gresser, Becky Buell and Constance Mackworth-Young.

## Disclaimer:

As a multi-stakeholder and collaborative project, the findings, interpretations and conclusions expressed herein may not necessarily reflect the views of all members of the Working Group who took part in this project in their personal capacity. The report was compiled for information purposes only and it is not a promotional material in any respect. The material does not offer or solicit the purchase or sale of any financial instrument. The report is not intended to provide, and should not be relied on for, accounting, legal or tax advice or investment recommendations. Although based on information believed to be reliable, no guarantee can be given that it is accurate or complete.

# Introduction

This *PharmaFutures* report focuses on the role of pharmaceuticals in a rapidly changing healthcare landscape in Europe. It builds on earlier *PharmaFutures* analysis, 'Shared Value: Rebuilding Pharma's Contract with Society', which reviews the challenge of R&D productivity and links this to changes in how medicines are paid for.

This report is launched at an important moment. Faced with deficit reduction imperatives, governments across Europe are introducing stringent austerity measures that are affecting decisions about a whole range of public services, including healthcare. Health systems face budget pressures at the same time as a growth in demand, and so are seeking cost reductions by bringing down staffing bills and pursuing savings from providers of products and services. Meanwhile, investors in pharmaceuticals, faced with relatively low returns from pharma stocks, and now concerned about pricing trends in Europe, are questioning the sector's prospects for growth and market valuations. Squeezed at both ends, pharmaceutical companies are responding by resisting price cuts and emphasising the important opportunities for life science industries outside Europe.

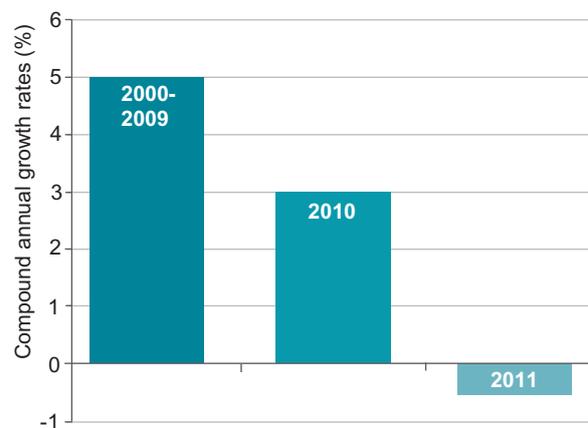
These pressures are leading to a dangerous stand-off in Europe with potentially damaging long-term consequences. Pharmaceutical market growth in Europe's largest markets has slowed from approximately 5% a year in the last decade, to 3% in 2010, and -0.5% in 2011<sup>1</sup> (See Figure 1). If prospects worsen it could lead to further industry retreat from Europe with potentially negative

implications for pharmaceutical companies and for European governments, economies and health systems.

Commercially, the industry stands to lose a significant portion of its global market, currently around 30%. And if value cannot be agreed in Europe this may have repercussions elsewhere; a value argument that is lost in Europe may also,

Figure 1:

## Growth\* in selected European drug markets



\* By value in 5 markets: Germany, France, Italy, Spain and the UK.

Graph source: Sanford Bernstein, Scannell, J et al., Global Pharmaceuticals: The Implications of European Austerity for Drug Stocks, 2012

at some later date, be lost in North America and in key emerging markets. Reputationally, the industry risks public opprobrium if it appears to withhold access to important medicines in the interest of profit.

The risks for governments and health systems are also high. They stand to face growing public pressure if they are seen to block current and future access to innovative and effective treatments for patients, especially at a time of scientific advance and on-going unmet need for a range of scientifically complex diseases. A breakdown in the relationship between industry and payers also means that the prospect of

collaboration to address the challenges of breakthrough treatments is diminished. The life-science industry is important to Europe. Despite this, an increasingly acrimonious relationship is jeopardising Europe's standing as a global academic centre for innovation, as industry questions the moral or commercial reasons for investing in what it views as increasingly difficult markets.

This report is designed to draw attention to the risks posed if a way out of this impasse is not found. It identifies first steps that can be taken to avoid these outcomes. It draws on the views and experiences of critical actors from health systems, the

investment community and pharmaceutical companies who were interviewed in the course of the *PharmaFutures* Europe project. It reflects the perspectives and conclusions of a dialogue that permitted people from these three constituencies to understand one another's room for manoeuvre as a first step in identifying opportunities for collaboration. And it offers suggestions about the circumstances in which industry could become a credible partner in the search for more productive and innovative health systems, at the same time as acknowledging the real financial constraints those systems face.

# Tectonic Shifts Reshaping Healthcare Delivery

More than half a century ago European health systems were established to cope with infectious disease and acute conditions of relatively young populations. Today these systems must meet the needs of elderly people, often managing co-morbidities (more than one disease), and younger people with chronic diseases. Healthcare systems are changing in response to these underlying causes of increased demand and in response to a number of cultural and technological trends.

## Trend One: Epidemiology and Demographic Changes

The rise in chronic diseases is the paramount public health challenge across Europe. Chronic diseases, which include long-term and progressive diseases (cardiovascular disease, COPD, asthma, depression, dementia and diabetes) as well as certain types of cancer and, increasingly HIV/AIDS, are already the leading cause of disability and deaths in Europe (Figure 2). Together they account for 86% of all deaths in Europe and 77% of the disease burden, dwarfing infectious diseases and injury<sup>2</sup>. In 2010, over a third of the European population was believed to have at least one chronic disease and these chronic diseases, if not managed well, could account for around 70% of health expenditure<sup>3</sup>.

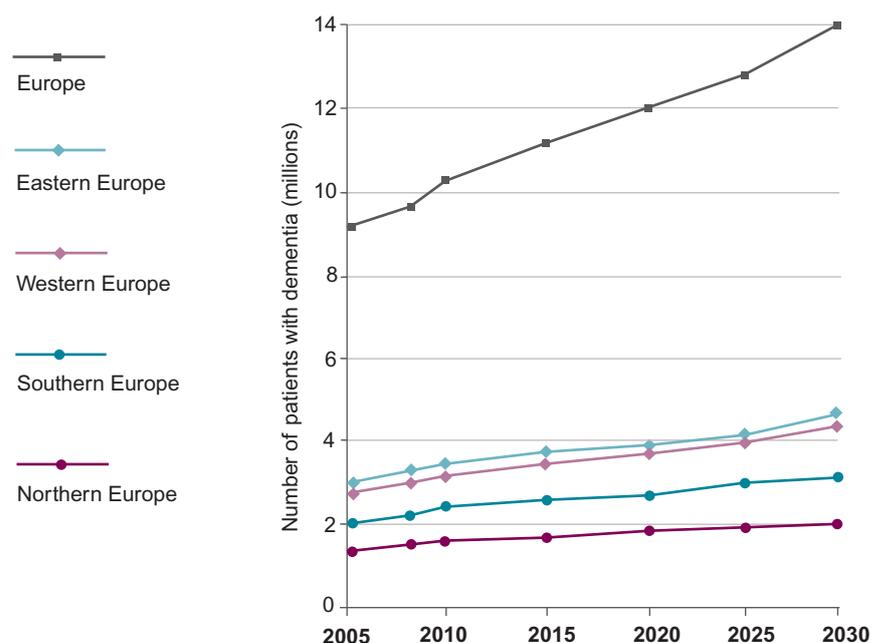
An important cause of chronic disease is ageing. The proportion of the population aged 65 and over in Europe is due to rise from 16% of the total in 2000 to 24%

in 2030<sup>4</sup>. This will significantly increase the burden of some chronic diseases, particularly dementia. The other impact of this demographic shift is the increase in the proportion of

the population managing co-morbidities, with all the risks this represents of adverse drug reactions, errors and complications. It has been estimated that two thirds of

Figure 2:

## Prognosis for the number of patients with dementia in Europe until 2030



Source: Alzheimer Europe. Wimo A., Jönsson L., Gustavsson A., *Cost of illness and burden of dementia in Europe – Prognosis to 2030*.

people of pensionable age have at least two chronic conditions<sup>5</sup>. As age dependency ratios (the number of pensioners to people of working age) rise, demographic trends will put further pressure on the resources for healthcare. Across the OECD the age-dependency ratio is set to double from an average of 25% today, to 50% by 2050 (leaving just 2 people of working age for every pensioner) and even rising beyond that in a number of European countries including Italy, Spain, Greece and Germany<sup>6</sup>.

The other critical driver of chronic disease is the rising rate of obesity, a known risk factor for hypertension, diabetes and cardiovascular disease, as well as some forms of cancer (Figure 3). A dramatic increase in this trend over the past decade means that more than half the

population across the European Union is either obese or overweight<sup>7</sup>. A number of academic studies have examined the economic burden of chronic diseases, and highlight their negative impact on people's prospects for employment, earnings and retirement, as well as the impact, at national level, on the GDP of countries<sup>8</sup>.

### Trend Two: The Economics of Healthcare

The growing disease burden makes it imperative that health budgets are carefully managed. Already this trend is contributing to rising health budgets across publicly funded European health systems. The World Bank anticipates that EU healthcare expenditure could rise from 8% to 14% of GDP in 2030<sup>9</sup>, raising concerns about the implications of health systems' budgets

continuing to grow at above GDP growth rates.

The reasons for the projected growth in healthcare expenditure are much debated. Some attribute it to a combination of growing patient demand and the costs of new technologies and new therapies. Others point to supply-side issues, such as insufficient productivity in the delivery of health services<sup>10</sup>. Beyond the causes, some argue that focusing on rising health costs risks missing the fact that investments in health can contribute to economic growth<sup>11</sup> and that prevention and early treatment can save costs to the system<sup>12</sup>. Even if this is true, there is a growing trend among European governments to enhance productivity by scrutinising use of limited resources. They are seeking to do so by introducing measures to evaluate health

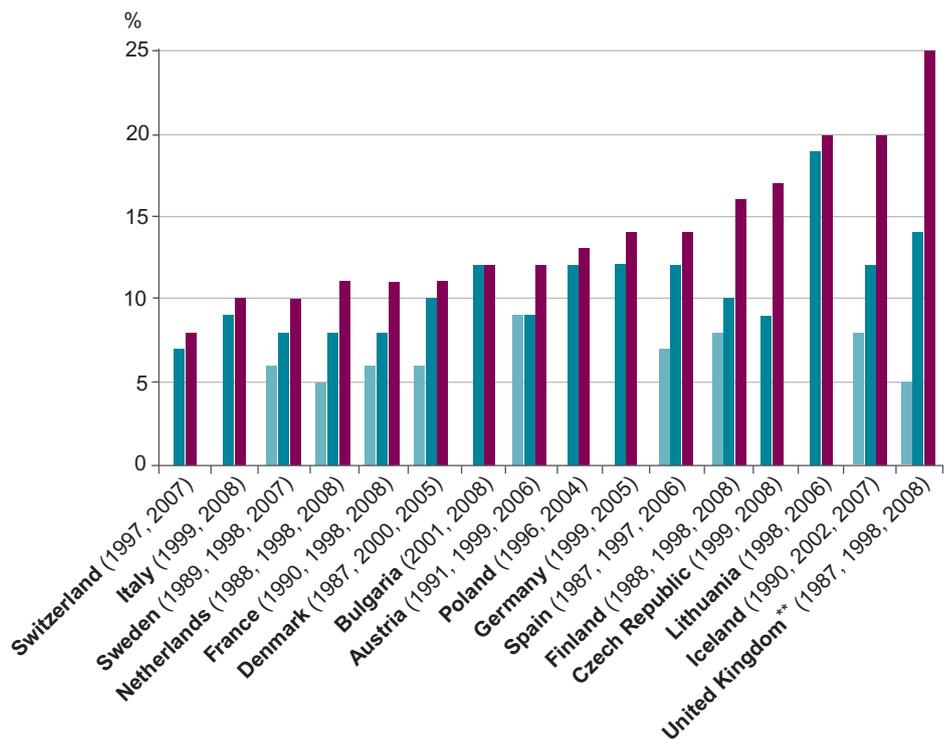
Figure 3:

### Increasing obesity rates among adults in EU countries\*

\* Data for selected countries

\*\* United Kingdom figures are based on health examination surveys, rather than health interview surveys.

Source: OECD Health Data 2010; Eurostat Statistics Database; WHO Global Infobase



outcomes and mechanisms such as Health Technology Assessment agencies (HTAs), to define the value of pharmaceuticals using pharmacoeconomic assessments.

How the growth in health expenditure will be affected by deficit reduction measures will differ from country to country, but even where budgets continue to grow, health services face a challenge to match increased levels of demand with the resources available. Where health budgets are frozen or cut this is likely to lead to households bearing more of their own health costs as well as a reduction in services offered.

### **Trend Three: Patient-Centred Healthcare**

A third trend affecting health systems is the long heralded, but slow to arrive, patient-centred healthcare. There are many dimensions to this, ranging from attempts to tailor care to meet individual patient needs, to direct patient-to-patient dialogue made possible by social media. It has involved the search for efficiency and the transfer of responsibility (including health costs) from the state to individuals and scientific advances in personalised medicine. The ambition is to make the patient more of a decision-maker actively involved in his or her care. This trend is also leading to attempts to integrate care, placing the patient at the centre of the multiple services provided to deal with co-morbidities, with a “point-

person” to help the patient to navigate specialist services.

For some patient campaigners, reforms within the health system have not been fast or far-reaching enough. This has led to the creation of disease-specific organisations and data sharing platforms, using opportunities provided by the internet to share information on disease burden and severity, medicine compliance and side effects, and allowing patient groups to make suggestions about how to improve drug development procedures. These new expressions of patient demand present opportunities, e.g. improvements in understanding clinical effectiveness, and challenges, e.g. in their potential to disrupt traditional decision-making mechanisms in health systems and drug development.

### **Trend Four: Scientific Advances & Personalised Medicines**

Scientific advances are another significant driver of change in healthcare, particularly those advances in drugs and devices leading to so-called “personalised medicines”. These advances, so far largely confined to particular cancers, are made possible by advances in genomics and diagnostics that allow them to identify those patients most likely to respond to treatment. Personalised medicine holds out the promise of more effective screening, prevention and therapy for a wide range of diseases,

which are in some way linked to errors in DNA.

Beyond cancer, some scientists expect a “second wave” of therapies to target immunological and inflammatory disorders. They caution, however, that the complexity of gene interaction and the interplay of genetics with many other factors, such as the environment and lifestyle behaviours, mean that chronic diseases could be less tractable to the application of personalised medicines. Researchers view neuro-degenerative disease and mood disorders in a similar light. There have been significant advances in this field, allowing scientists to distinguish between different types of Parkinson's, for instance. However, many believe there is still too much to learn about the pathogenesis of these diseases to hope for therapeutic breakthroughs in the near future.

There is also a growing recognition that these developments have business model implications and it is far from clear how the market for the highly-targeted and expensive therapies of personalised medicine will evolve. Health services may find the cost implications of providing access to a growing number of such treatments overwhelming, even if each particular treatment only applies to a limited number of patients. The economic benefits of such treatments (both in improved outcomes and reduced clinical trial costs)

could provide sufficient incentive to find a sustainable pricing model. This is not, however, a foregone conclusion. Given the pressures on health systems, pharma could face the same push-back on pricing for breakthrough innovation that has happened with incremental innovation.

### Trend Five: IT & Data

Today, technologies are being applied across the whole healthcare value chain; from nanotechnology in diagnostics, through support for improved compliance, to data collection to monitor and track long-term side effects of medicines once in clinical practice. As technology has evolved, it has provided enormous opportunities to manage and track health data. But although there is considerable potential for advances in IT to contribute to significant healthcare reform, it is early days in its development and has not yet been fully embraced by health systems.

Where early adoption of technology *has* already gained significant traction is in data management, particularly on drug effectiveness. Here the trend is towards gathering more “real-world” data from clinical practice to supplement the results published from clinical trials and to ensure better monitoring of a drug’s actual effectiveness in patients once it is on the market.

Some of the bigger payers are considering post-approval analysis of drugs to establish which work the best.

Closely linked to this issue of effectiveness is that of compliance. Non-compliance is a major public health preoccupation as it makes it hard to assess the true effectiveness of treatment, adds cost through wastage and through non-treatment of disease. One analysis has found that patient adherence varies between 50% and 63%<sup>13</sup>. Some experts are hopeful that telemedicine could help patients take their medicines as prescribed, support them in their own disease management and save costs for health systems overall. The data on this (for instance in asthma) is still mixed<sup>14</sup>.

### Trend Six: Rising Inequality

As the demographic, epidemiological and economic trends described above begin to bite, their impact on healthcare systems is likely to cause upheaval, with potential social consequences. In Europe, disparities already exist between health outcomes both between income groups in the different Member States and between more and less wealthy countries across the region. As inequality rises across and within Europe, greater attention is being paid to

its impacts on health, building on existing evidence that poverty and poor health are connected, as articulated for instance, in the academic work on “social determinants of health”<sup>15</sup>.

In this context, the cultural underpinning of health priorities also becomes more evident. There is early evidence of tension about wealth distribution between young people and baby boomers in Europe, and the costs of healthcare for the elderly is part of the debate. Similarly, the debate about the “deserving” (and by implication the “undeserving”) poor is becoming more evident. The balance between the responsibilities of the individual and the health provider is shifting. It is clear that the principles of solidarity and universality, which have underpinned socialised healthcare provision across Europe for the past 65 years, are under growing pressure. This perception of winners and losers – and the political responses it provokes – is creating a more contentious backdrop to healthcare reforms. As recent election results in France and Greece show, solutions to the economic squeeze that are perceived as unfair and anti-growth will need to be mindful of the political price of asking people on lower incomes to shoulder these costs.

# Health System Reform and the Response of Pharma and the Capital Markets

## Health System Reform

In response to these long-term trends, most European countries have begun to focus on how to reform their health systems. In particular, they are attempting to shift the balance away from hospital-based care towards care in primary and community settings. Attempts to achieve this include focusing on managing long-term conditions; improving productivity, quality of care and patient outcomes; reducing variations in care; introducing more integrated services; and placing greater focus on patient-centred disease management. The strategic nature of the challenge means that government health ministries are taking a fresh look at how to support a healthy population, and thinking more about prevention and the earlier and more effective use of diagnostics. They are also exploring the role of IT in saving money. In this scenario, medicines are just one of an increasingly wide range of treatment and prevention options under consideration.

## The Response of Pharma

For pharmaceutical companies operating in Europe it is important to anticipate the direction of travel of health reform and what role the industry could play in supporting such reforms. In order to pursue

promising advances in science, companies have to make commercial calculations based on estimating the size of the market for any successful product. The market for their drugs will be shaped in part by how these reforms unfold.

The extent of industry's engagement with health systems has to be understood in context. The reform agenda adds to industry's on-going challenge both to improve R&D productivity, after a long period of drought, and to respond to the introduction across Europe of mechanisms to control drug prices. There is growing payer demand for evidence-based value, particularly for incremental innovation (see [www.pharmafutures.org](http://www.pharmafutures.org)), meaning that it is no longer possible for industry to set prices unchallenged. Today, across Europe, health technology assessment bodies are evaluating comparative effectiveness of medicines in the face of different treatment options, and increasingly, cost effectiveness for the payer. The impulse to improve the productivity of health systems will not only accelerate this trend, but also require industry to ask itself whether the drug alone will be sufficient to command value. For this reason, there is a debate today about the extent to which

industry should be incorporating its products into some sort of service offering that supports the search for greater efficiencies across health systems.

## The Capital Markets

*PharmaFutures* works on the assumption that lasting changes to pharmaceutical business models will need to be understood and endorsed by investors. They need to be convinced of the sustainability of above cost-of-capital returns from the pharma sector, or they will come under pressure to invest in other equities or asset classes. Over the past decade, investor confidence that pharmaceutical R&D will yield adequate returns has weakened due to product failures and regulatory pressures. Market valuations have shrunk and pharmaceuticals have fallen from 13% of the S&P Index to 7%. For this reason investors have tended to reward reductions in R&D capacity and may have appetite for further cuts. The challenging pricing environment and difficult decisions facing companies about how to respond to healthcare reform are leaving many investors to view Europe with even more trepidation. And there is no more consensus amongst investors about how to respond than there is within the pharmaceutical sector itself.

# The Euro Crisis – Raising the Stakes

**The current Euro crisis has had a direct and striking impact on plans for long-term healthcare reform. This is in part due to the need for governments to prioritise the urgent, over the important and in part due to the highly politicised nature of healthcare.**

## The Impact

Intensified pressure on health budgets has led some governments to make cuts or efficiency savings to meet increased demand, to reduce numbers of health service personnel and to delay procurement. At the same time where co-pays exist, many patients have been required to increase their payments and fees for healthcare. The political temperature has risen in response. Although it is still too early to verify the impact of austerity on actual health outcomes, people's anecdotal experience is combining with stark media reports, about diminished coverage, delays in treatment and service reductions, to generate concern and fear. It is clear that austerity measures will make already complicated political debates about healthcare reform yet more problematic.

This makes Europe an increasingly difficult and unpredictable place for the research-based industry to do business. There have been advances. The industry and those in the public system that buy medicines have taken some steps towards agreements on value, based on pharmacoeconomic data, which has improved

relations somewhat. In the short-term, such moves towards consensus carry the risk of being replaced by unilateral actions to cut costs through abrupt price-cuts. It is clear that, in some places, pharmaceuticals are at risk of becoming just another line item in the budget which can be reduced by cutting prices, prescribing more generics and delaying approvals or even payment. In the longer term, austerity is likely to accelerate the introduction of more systematic price control mechanisms. The industry's own approach to pricing has contributed to today's strain, but the fact remains that the industry is becoming more disillusioned with Europe, both as a market and as a centre for R&D.

## The Consequences

For pharma, today's prices need to reflect not only the high regulatory costs of drug development and investor pressure to maintain returns, but also the cost of drugs that fail. While health systems cannot be expected to carry the cost of a prolonged period of low pharma R&D productivity, a hostile European market may have unintended consequences. If trust between payers and

pharma does not improve, further pricing pressures could lead to a genericised standard of care, which, if taken to extremes could lead to a collapse in pricing for many branded pharmaceutical products. If this were to happen, the risk is that industry would be likely to retreat from Europe, closing more R&D and manufacturing sites and diminishing its contribution to Europe's position as a global research centre. There are already signs of pharma disenchantment with Europe, evidenced by R&D closures and ambivalence about whether markets will sustain new products. Investors, already concerned about the high proportion of current sales facing generic erosion in the next few years, will be concerned about the prospects for growth in these stocks, especially as some consider what happens in Europe to be a precursor to what may happen in other markets. Over time, this downward spiral could have very damaging impacts on the development of new treatments for unmet need: neurodegenerative therapies; antimicrobials; diseases of the developing world; and some long-term conditions.

# The Opportunity: Finding Common Ground

To avoid these outcomes, and to allow an increasingly antagonistic conversation to be reframed in a more positive light, *PharmaFutures* Europe explored areas of common ground between health professionals, payers and pharmaceutical companies.

Any attempts to bring representatives of health services and industry together to achieve this end must be tempered by an acknowledgement of the deep mistrust that exists between parties today across a number of issues: e.g. on how pricing is defined and calculated; and the nature of the relationship between industry, prescriber and patient organisations. For mutually beneficial partnerships to thrive trust would need to be rebuilt and the following pre-conditions met:

**For health systems** any collaboration with industry would need to save money for the system overall, or at the very least, be cost neutral, while improving outcomes. The allocation of annual health budgets makes it difficult for health systems to realise savings accrued in future years. While this remains the case, any arrangement between health systems and pharma would need to address immediate cash flow problems by addressing the needs of payers to spread cash outlays over time. It would also

need to be free from the threat of the sorts of legal action that can poison relations.

**For pharmaceuticals** any collaboration would need to have a demonstrable business case. Despite the discomfort many feel at having a profit making enterprise at the heart of drug discovery and development, this reality drives many of the industry's behaviours. Pharmacoeconomic assessments have proved to be an effective way for health

## Box 1: Outcomes Focused Innovation in Disease Pathways

**This box provides an example of the type of collaboration that could help build confidence and trust.** It would allow pharmaceutical companies to have confidence that health systems are able to adapt sufficiently to introduce pharmaceuticals into the system in such a way as to release a financial benefit. It would allow health systems to have confidence that pharmaceutical companies are willing to adapt their business models in order to help them meet their productivity challenges.

To achieve this, the collaboration would develop a prototype for disease pathway management with a specific agenda to improve patient outcomes and health systems productivity. The prototype could identify agreed indicators along the value chain below, linked to improved patient outcomes and where industry has specific expertise and therefore could play an important role. These could include: screening and diagnostics, the development of combination products, alterations to dosing and packaging, efforts to track and improve compliance and remote monitoring.



systems to counter what they see as pharmaceutical excesses and have allowed payers to outline what it is they will value, and what they consider to be cost-effective. Many pharmaceutical companies, however, still lack confidence that the health system will buy their products even if they are proved to be of value. To work for pharma as well as health systems, collaboration will need to result in the sort of uptake that allows pharma

to satisfy shareholder needs as well as payers.

**For investors**, wary of industry going beyond its mandate to successfully research and develop pharmaceuticals, any collaboration would need to improve predictability and the likelihood of returns that exceed the industry's cost of capital.

If these pre-requisites could be met, collaboration between industry and health system

professionals is possible. There are a number of topics that could be addressed, including greater collaboration in R&D decision-making, pharmaceutical support for attempts to integrate patient care, and thinking about how pharma could support new approaches to disease pathway management to achieve better clinical outcomes. We outline one such example in Box 1 to demonstrate the potential identified by *PharmaFutures*.

## Conclusions

### The Need

The situation is urgent. The health needs of a European population that is both ageing and struggling to manage an increasing chronic disease burden requires both a strategic approach to long-term reform, and also an industry capable of coming up with new treatments.

At the same time, the imperatives of deficit reduction must be managed so as to avoid worsening the already devastating impacts on people across Europe whose basic services are being reduced and whose jobs, pensions and household income is increasingly precarious.

Current attempts to meet the needs of one party alone – whether industry, investors or

governments – risk faltering in the face of the constraints faced by others, thereby increasing antagonism and the polarisation of views. This is not what Europe's citizens need. Society can ill afford to lose an industry that contributes so much to Europe's knowledge economy and to Europe's position as a life-science centre of excellence. At the same time, with health budgets being squeezed more than ever before, health services cannot be expected to pay ever greater prices to compensate for high failure rates in drug development.

### The Prize: Improved Productivity

At its most simple, long-term trends require health systems to improve patient outcomes at the

same time as reducing costs. Pharmaceutical companies, meanwhile, need to demonstrate to health systems that patients benefit from their products and to increase investor confidence that new products will find a market. The great prize then, is a model of pharmaceutical development and delivery that actively supports an improvement in health systems productivity at a time of austerity. To meet this crisis it is imperative that renewed urgency is brought to current attempts to build trust across multiple stakeholders. This is the only basis on which meaningful progress will be made.

## Workshop Participants

**Stewart Adkins**, Director, Stewart Adkins Advisors Ltd

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**Dr Rafael Bengoa**, Minister for Health and Consumer Affairs in the Basque Country, Basque Government

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**Dr Anna Bucsics**, Vice Department Head, Department of Pharmaceuticals Affairs, Main Association of Austrian Social Security Institutions

**Dr Angela Coulter**, Director of Global Initiatives, Foundation for Informed Medical Decision-Making

**Charlotte Ersbøll**, Corporate Vice President, Global Stakeholder Engagement, Novo Nordisk

**Elizabeth Fernando**, Head of European Equities, Universities Superannuation Scheme (USS)

**Eddie Gray**, President, Pharmaceuticals Europe, GlaxoSmithKline (GSK)

**Dr Jane Griffiths**, Company Group Chairman, Janssen Pharmaceuticals, EMEA, Johnson & Johnson

**Graham Hetherington**, Chief Financial Officer, Shire Plc

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**Dr Alison Hill**, Managing Director, Solutions for Public Health

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**Prof Sir Michael Rawlins**, Chairman, National Institute for Health and Clinical Excellence (NICE)

**Dr Jack Scannell**, Analyst, Sanford C. Bernstein & Co., LLC

**John Schaeztl**, Industry Commentator, Independent

**Dr Ad Schuurman**, President, Medicine Evaluation Committee (MEDEV)

**Divya Srivastava**, Health Economist, Organisation for Economic Co-operation and Development (OECD)

**Dr Giorgia Valsesia**, Healthcare Analyst, SAM Research AG

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**Bo Wesley**, Senior Specialist, Innovation and Effectiveness, Novo Nordisk

## Interviewees

**Dr Peter Anderson**, Executive Vice President, Lundbeck

**Dr Richard Barker**, Director, Oxford Centre for Accelerating Medical Innovations

**Dr Andrew Baum**, Associate, Citigroup Analyst

**Richard Bergstrom**, Director General, European Federation of Pharmaceutical Industries and Associations (EFPIA)

**Dr Ted Bianco**, Director, Technology Transfer, Wellcome Trust

**Prof Chas Boutra**, Chief Scientist, Structural Genomics Consortium Oxford

**Jim Easton**, National Director for Improvement and Efficiency, UK Department of Health

**Dr Nick Edwards**, Partner, Kinapse

**Joel Emery**, Vice-President, Analyst, Fred Alger Management Inc.

**Simon Friend**, Global Pharma and Life Sciences Industry Group Leader, PwC

**Prof Finn Borlum Kristensen**, Chairman of the Executive Committee, EUnetHTA

**Dr John LaMattina**, Former Senior Vice President, PureTech Ventures

**Valerie Paris**, Healthcare Economist, Organisation for Economic Co-operation and Development (OECD)

**Colin Pratt**, Portfolio Manager UK Equities, Universities Superannuation Scheme (USS)

**Carl Seiden**, President, Seiden Pharmaceutical Strategies

**Dan Summerfield**, Co-Head Responsible Investment, Universities Superannuation Scheme (USS)

**Prof Patrick Vallance**, Senior Vice President, Medicines Discovery and Development, GlaxoSmithKline (GSK)

**Jo Walton**, Analyst, Credit Suisse

**Dr Paul Wicks**, Director of R&D, Patients Like Me

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Meteos is a not for profit company, which runs dialogues and networks to explore how to achieve long-term economic, social and environmental stability. Meteos dialogues provide a forum for senior figures in the corporate, public sector and investment worlds to discuss the major trends that will shape the market and regulatory landscape in coming years. The dialogues analyse the speed and direction of these trends and provide an opportunity for those who will determine future outcomes to work together to achieve an alignment of interests.

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