FT Health Sustainable Healthcare

Thursday June 20 2013

www.ft.com/reports | twitter.com/ftreports

Trends urge need to put prevention before cure

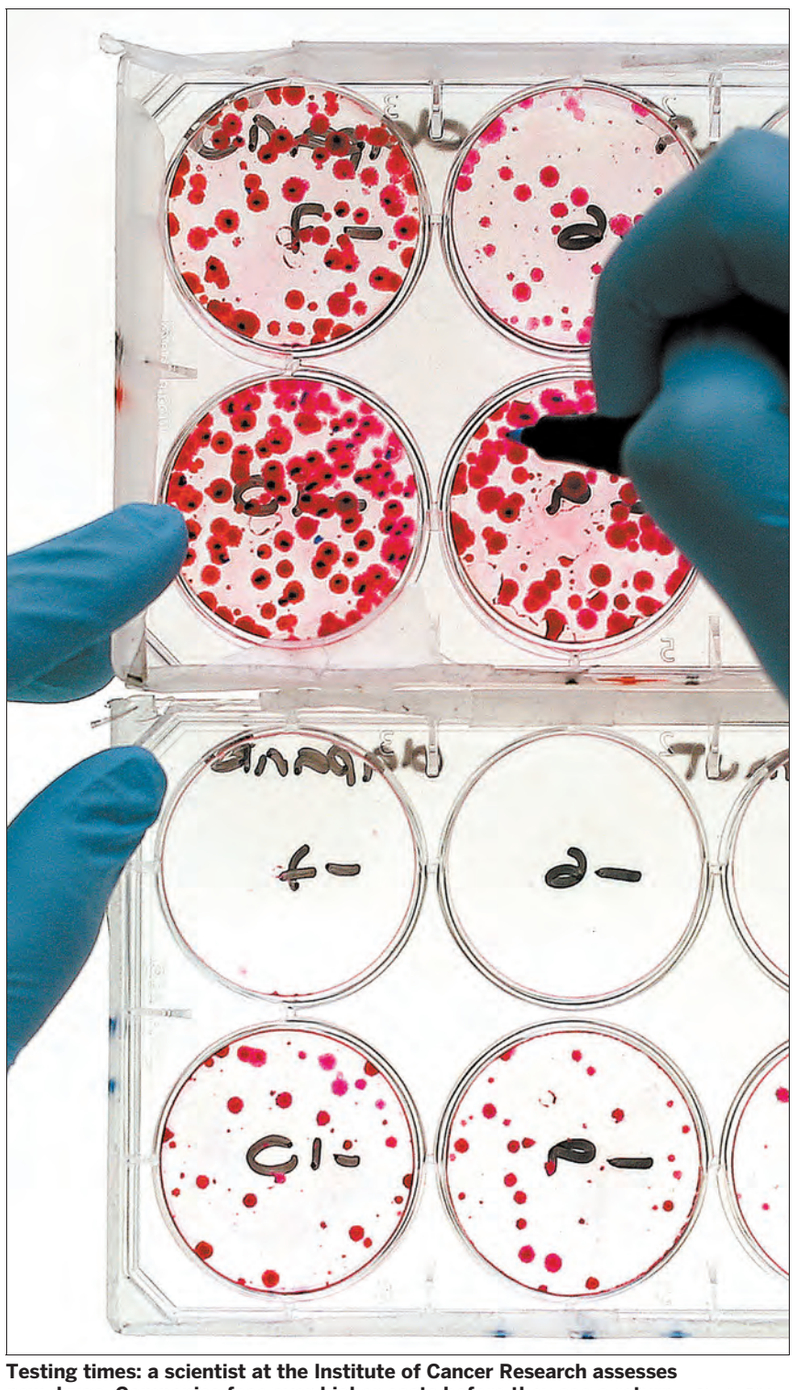
Funding for a mix of behavioural science with checks on the food industry and promotion of healthier lifestyles is crucial, says *Andrew Jack*

In the long run we may all be dead but in the medium term we are increasingly being pulled into the orbit of healthcare while still alive. The fact that people around the world, whether as patients, employees or funders, are experiencing the rising share of income channelled into tackling disease has sparked a debate about sustainability.

Advances in recent decades as a result of preventive vaccines, enhanced nutrition, improved sanitation and economic growth, have all contributed to lower infant mortality and ever longer lives. Such factors mean that, although population growth is slowing, the world is inhabited by a record 7bn people.

At the same time, a shift towards more urban and sedentary lifestyles and the growing commercialisation of dense, processed and manufactured foods, have added to risks. So far, rising obesity and metabolic disorders such as diabetes in richer and poorer countries alike have failed to reverse extensions in life expectancy. But they have brought new costs through medical complications.

As birth rates decline and the population ages, the dominant types of disease have shifted and intensified, with the emergence of many more long-lasting chronic conditions, cancers and degenerative illnesses such as dementia. The ratio of working people to dependants has tipped towards the latter, increasing the pressure on funding for all.



Testing times: a scientist at the Institute of Cancer Research assesses new drugs. Companies face ever-higher costs before they see a return Charlie Bibby

Such tensions have long been highlighted in Europe. Following a post-war period of investment in improved healthcare in response to rising living standards and public expectations, strong government-backed health systems have come under additional budgetary constraints since the financial crisis of 2008.

In Greece, for example, there are reports of patients seeking help from humanitarian agencies after slipping through gaps in the public health system. Campaigners have pointed to a surge in HIV infections linked to the abandonment of targeted prevention programmes, notably for drug users.

In a new paper in the British Medical Journal, Helena Legido-Quigley at the London School of Hygiene and Tropical Medicine warns that, as a result of recent and planned healthcare cuts in Spain, "we are seeing detrimental effects on the health of the Spanish people and, if no corrective measures are implemented, this could worsen with the risk of increases in HIV and tuberculosis."

In far poorer parts of the world, the crisis in agricultural supplies that, over the past few years, has prompted intense discussion on "food security" has resulted in a surge in physical and mental development problems in young children.

The economic squeeze has been reflected in healthcare problems in the US, even though its spending on health, at 18 per cent of gross domestic product, outstrips that of all other countries. But inequality of access remains a concern, with variations in cover exacerbated as people lose their jobs or move between regions and insurers.

If the United States provides some of the best, most exhaustive and innovative care in the world for those who can afford to pay, even wealthy Americans do not always enjoy better results than their peers in Europe. The poor and middle class often struggle, and co-payments and loopholes can leave them with inadequate access to treatment.

Continued on Page 2

Inside »

Workforce incentives attract only limited uptake

Employer programmes

Financial carrots and sticks pose risks, says *Sarah Murray*

As employers seek to cut health costs, reduce absenteeism and increase productivity, many are introducing wellness programmes.

With financial incentives and lifestyle advice, employees can also benefit.

However, such incentives – and the penalties that sometimes accompany them – raise ethical questions, as they expose companies to the risk of being viewed as discriminating against the unhealthy.

Workplace health plans range from screenings to advice on diet and exercise, healthy options in the staff canteen, on-site yoga classes or discounted gym memberships.

In the US, 92 per cent of employers with 200 or more employees reported offering wellness programmes in 2009, according to a report published last year by Rand Health, part of the Rand Corporation think-tank.

Positive returns are reported from these investments, particularly in the US, where companies cover employee health costs, either directly through self-funded plans or by purchasing group insurance.

Even in countries where companies do not pay employees' medical bills or insurance premiums, investing in a healthier workforce can reduce costs related to absenteeism, and "presenteeism" (employees at work while ill or not fully engaged). In the UK, for example, about 131m days were lost through absences due to sickness or injury in 2011, according to the Office of National Statistics.

Despite the benefits, adoption rates vary globally. While 80 per cent of German companies believe corporate health management is necessary, only a third have implemented such programmes, according to consultants Roland Berger. And average employee participation remains low – less than 20 per cent in the US, says Rand Health.

However, some employers have raised that figure far higher. IBM, the IT company, says it has 70 per cent employee participation in its Healthy Living Rebate programme, while Anglo American, the mining group, says 92 per cent of employees in South Africa get tested for HIV every year.

Like many companies, IBM and Anglo American have boosted participation rates by offering employees incentives.

IBM offers employees incentives for setting personal goals on diet or exercise or working with their families to encourage healthier living. "It's a cash rebate that can go up to about $300 per employee," says Kyu Rhee, vice-president of integrated health services.

In the southern African countries it operates in, Anglo American offers the world's largest free workplace testing and treatment programme to combat HIV/Aids. The policy is curbing absenteeism and improving the lives of those affected.

> 'It's better to give people positive reinforcement rather than negative'

The strategy includes incentives – from rugby sweaters and caps to movie tickets – to join the testing programme.

"What we've tried to push is that everyone must know their HIV status," says Frank Fox, the company's head of occupational health.

He believes the carrot is more effective than the stick. "It's better to give people positive reinforcement rather than negative," he says. However, some companies are also imposing financial penalties on employees as part of health management strategies.

In the US, the use of penalties for employee non-participation more than doubled from 2009 to 2011, rising from eight to 19 per cent, according to the consultancy Towers Watson.

Penalties to drive reductions in smoking or obesity raise ethical questions, says Harald Schmidt, an expert in workplace wellness programmes at University of Pennsylvania's Perelman School of Medicine.

"In principle there would be nothing wrong if it was equally easy for all to comply with conditions," he says. "But because that's questionable for smoking, just as for obesity, real fairness issues are raised."

Rules coming into force in the US next January allow companies to increase the rewards offered through wellness or smoking reduction plans (and, of course, one person's financial reward is another's penalty). The rules also stipulate that employers must offer employees additional help if they cannot qualify for a programme's rewards on their own.

Yet Mr Schmidt points out that the onus remains on employees to take the next step since companies are under no obligation to publicise available assistance.

Companies may need therefore to improve their communications on health management. The consequences of not doing so were illustrated recently when CVS Pharmacy was criticised after introducing a fine for employees who do not undergo regular health screenings.

"CVS didn't do anything many other companies have not already done, but they probably didn't communicate it well," says Mr Noeldner. "Communication is key."

Plain packaging war smoulders

Tobacco

Developing world will stage real battle, reports *Rose Jacobs*

When James Reilly, the Irish health minister, announced in May that he would introduce legislation next year requiring that cigarettes be sold in packets bearing no more decoration than a brand name and a health warning, stocks in tobacco companies stumbled. This was despite the fact that Irish smokers contribute just a tiny fraction to the industry's revenues.

Yet supporters of such a law say this was the rational market recognising what antismoking groups have been arguing for years – well before 2012, when Australia introduced the world's first plain-packaging law – that standardised packets would significantly reduce the number of people who take up smoking, continuing a drive that television and radio advertising bans started several decades back, and which public health advocates say has saved millions of lives.

But the tobacco industry is adamant that the law will have little impact on the incidence of smoking – and might even increase tobacco use, since plain packaging is likely to reduce pricing power.

Moreover, the industry's executives and lobbyists insist, plain packaging will make life easier for black-marketeers, providing oxygen to a seedy network of smugglers, robbing government coffers of duties and endangering smokers by allowing unregulated counterfeit products to seep into the market.

The world's four biggest tobacco companies – British American Tobacco, Imperial Tobacco, Philip Morris and Japan Tobacco – challenged the Australian law domestically, and lost. Philip Morris is pursuing a separate case in Hong Kong, and Ukraine and Cuba are battling the legislation through the World Trade Organisation. But whereas some countries, such as New Zealand, are awaiting the outcome of the WTO challenges before following in Australia's footsteps, and others, such as the UK, have indicated plain packaging is not a priority, Mr Reilly's decision in Ireland shows that legal wrangling might not stem the tide of countries deciding to follow suit.

The appeal of standardised packets, says Mark Costigan, the Irish health minister's spokesman, is that while smoking bans in bars, restaurants and workplaces have had quick and demonstrable success in reducing second-hand smoke exposure,plain packaging offers a chance to chip away at the stubbornly steady number of young people who continue to smoke.

There is not yet strong evidence from Australia that standardised packets reduce smoking, but Deborah Arnott at Ash, the UK antismoking group, argues it is early days yet. "Fifteen- and 16-year-olds have had 14 years of seeing cigarette packs. The impact will grow over time." Moreover, evidence linking advertising and smoking incidence is abundant. A 2008 report from Cochrane, a scientific review group, looked at nine studies measuring the relationship and found that "non-smoking adolescents who were more aware of or receptive to tobacco advertising were more likely to become smokers later". And in the US, the number of Americans who smoke nearly halved in the three decades following a 1970 ban on cigarette advertisements on TV and radio advertising.

Of course, other measures also contributed to that decline, and governments facing the steep costs associated with nearly 6m smoking-related deaths a year – forecast to rise to 8m by 2030 – are considering all the levers. The European Parliament is weighing the adoption of an updated Tobacco Products Directive that would not impose plain packaging but instead increase the size of health warnings, ban flavoured tobacco and prohibit products with higher-than-average toxicity or addictiveness. Private insurers, meanwhile, have long offered monetary incentives for customers to give up smoking, in the form of lower rates.

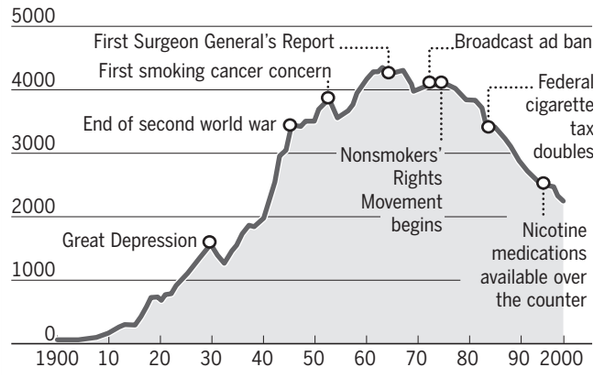
Martin Deboo, a tobacco analyst at Investec Securities, argues that the best way to reduce smoking is to increase the price of tobacco products. But in countries such as the UK, that measure is reaching its upper limit.

That might leave public health authorities in developed countries scrambling for new ideas, and balancing health with civil liberties as they weigh bans on smoking at home, for example, or when children are in the car.

But the developing world, which is home to the majority of the world's 1bn smokers, has more room for improvement. "Smoking rates will go up as incomes go up, and you've got this industry promoting its product very heavily . . . in the countries where incomes are rising rapidly," says Ms Arnott. "That's where the battle will be fought."

US annual adult cigarette consumption

Per capita



Source: US department of Agriculture; 1986 Surgeon General's Report

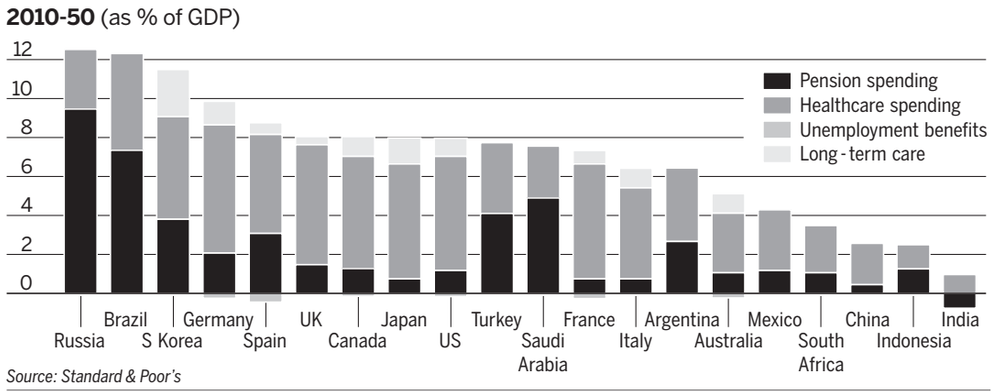
Race is on for ways to save both money and the sick

Funding The watchword is 'value' as countries seek to sustain universal coverage without risking financial stability, writes *Sarah Neville*

Over the counter: policy makers say patients will have to do more to look after their own health Getty

Projected increase in G-20 age-related spending

2010-50 (as % of GDP)



Source: Standard & Poor's

When Standard & Poor's, the rating agency last year warned that the rising proportion of developed nations' budgets being spent on health could pose a significant threat to their creditworthiness, it turned a spotlight on the urgent need to find a way to sustain this most vital of services in an era of austerity.

In March, the agency returned to the fray, warning that the current pressures "may be just the start of a decades-long period of rising tension between two seemingly conflicting priorities: the need to sustain public spending on pensions and healthcare for ageing populations versus the need to hold down or reduce government budget deficits and debt".

For many years, an increase in the sums spent has been a primary goal of a number of health systems. Now, the watchword around the world is "value" as countries seek to sustain universal coverage and high performance without risking financial stability.

Countries that finance healthcare through employment, because they operate a system of employee-based social insurance, have been under particular pressure to find different ways of raising revenue as the recession has led to sharply-rising job losses and the black economy has grown.

This applies in particular to developing nations seeking to move towards a universal system. In predominantly agrarian economies, income may not be declared, driving politicians to find a broader tax base from which to finance healthcare.

Joblessness is itself increasing the demand for health services. The link between unemployment and ill health has long been known but the toll on mental health, in particular, has been illustrated by a leap in suicides even in southern European countries such as Greece where levels have traditionally been low.

Ministers and policy makers are aware that already substantial income-based health inequalities risk becoming even wider if the fight for a share of dwindling spoils is won by the economically advantaged, who tend to have the loudest voices.

The European Observatory on Health Systems and Policies and the World Health Organisation, have been examining the impact of the crisis on European health systems. A draft report earlier this year found that the health share of the government budget rose or remained stable in over half the EU's 27 member states between 2008-11.

Out of a total of 47 European countries surveyed, 22 experienced a decline in the health share of government spending. This included some of the countries most affected by the crisis, such as Ireland, Portugal and Spain. Sarah Thomson, senior lecturer in health policy at the London School of Economics, who led part of the work, says that Europe-wide there has been no marked increase in the private share of health spending – that is, the sums that citizens were expected to provide.

However, a number of countries that operated social insurance systems had raised the ceiling on contributions and also broadened the revenue base from which those contributions were obtained.

In Slovakia, contributions are now sought from dividend income while in Croatia pension income is included, as it is in Greece and Portugal for civil servants and in Romania for wealthier pensioners. In France, redundancy payments count towards the income on which contributions are assessed.

There are two main public financing mechanisms: either funding from the general government budget, with the decision being taken by a nation's finance and health ministers; or through the labour market, by asking workers to pay into an insurance system.

> The toll of joblessness is itself increasing the demand for health services

Ms Thomson says that, in the past 10 years, governments have sought to move away from the labour market model, aware that, as the population ages and shrinks and unemployment rises, they must raise more money from other sources of taxation.

A number of countries have raised user charges, "although not as many as I would have expected", she adds, and countries have shown an unexpected "sophistication" by using such changes as "more of a scalpel than an axe". Poor people and those with chronic conditions who have to make regular use of health services have tended to be excluded from these new charges.

Policy makers, she suggests, have become more aware of the limitations of asking for a fee at the point of use, which from an economic perspective, "doesn't make sense", since they were likely to turn up in emergency departments where their treatment would be more expensive.

Another route has been to "put the squeeze" on drug prices. She cites Estonia, where a switch from branded to generic drugs has reduced prices while increasing access for patients.

Uniting policy makers across the world is a belief that patients will have to do more to look after their own health.

Nicola Bedlington of the European Patients Forum warned at a conference in Brussels in May against creating a culture in which patients are somehow blamed for their own conditions. Her organisation "would like to see patients not purely seen as recipients of care or part of the cost driver" but empowered to play an active role in decisions about their treatment.

This may involve politicians having difficult conversations about the level of services nations can afford to offer free of charge.

A European Commission official, who did not wish to be named, said patients' expectations were "high all over Europe but financial resources available to finance public services differ". One important policy step would be "for countries to define an effective and cost-effective basket of health services and goods to be offered free or almost free for all". Depending on "how much a country can afford and society's preferences, countries can offer more services to which different levels of cost sharing can apply", she added.

Trends urge need for shift towards prevention rather than cure

Continued from Page 1

Yet there are signs of improvement, even in an age of austerity. President Barack Obama's efforts to extend medical cover to all tapped a broader trend towards universal healthcare, reflected in policies in countries and regions as diverse as Ghana and rural China.

Jim Yong Kim, head of the World Bank, signalled a shift in policy when he told the World Health Assembly in May: "Every country in the world can improve the performance of its health system in the three dimensions of universal coverage: access, quality and affordability."

His views chime with those of the academics David Stuckler and Sanjay Basu, who caution against a short-termist approach. In their book *The Body Economic*, they argue that healthcare cuts in response to austerity are counter-productive and have caused significant long-term problems such as infections and a rise in suicide rates.

There is much debate over how best to respond to budgetary pressures, with many suggesting that the introduction of "co-payments" – or the sharing of costs – by patients whenever they see a doctor discriminates against those most in need. Some argue that a more rational approach is to trim the package of available free essential care at the point of delivery.

Despite the alarm over rising costs, many in the industry downplay the concerns. Ian Read, chief executive of Pfizer, the US pharmaceutical company, says: "The question is not whether we are spending too much on healthcare, but whether we are spending enough." He says, for example, that statins such as Lipitor, the company's "blockbuster" cholesterol-lowering medicine, have saved healthcare systems hundreds of billions of dollars as a result of reduced heart attacks and related complications.

His argument is partly in reaction to a desire among healthcare systems to squeeze prices and demand for commodities such as drugs through "health technology assessment".

Organisations such as the UK's National Institute for Health and Care Excellence (Nice) judge the cost effectiveness of medicines in addition to regulators' work on safety and efficacy.

The result, notably in Europe, has been an ever-higher hurdle for drug companies to leap in order to achieve reimbursement for their products.

That may well be justified, given an article in the latest issue of the journal Health Affairs, which has identified a consistent decline in the incremental benefits of new medicines since the 1960s.

The pharmaceutical industry is also at least partly right to highlight two other areas that merit more attention: the need for more efficiency in non-drug costs (given that medicines account for only 10-20 per cent of total expenditures) and the scope to spend less money on treatment and more on prevention.

In the US, the advent of accountable care organisations reflects an attempt to move from paying doctors per consultation towards rewarding them for improved outcomes. Similar experiments are taking place elsewhere.

> 18%
>
> **Percentage of US GDP that is spent on healthcare**

Most fundamentally, demographic and disease trends alike point to the need for a substantial shift in resources and innovation towards prevention.

Some of the biggest killers, such as smoking, would appear clear candidates for more active policies – although efforts in countries such as Australia to impose plain packaging on cigarettes are meeting fierce legal resistance from the tobacco industry.

Tackling most lifestyle diseases is proving far more difficult. There are few proven models to reverse obesity, but it seems clear that there is a need for greater funding, research and political boldness. The key would be to mix behavioural science with checks on the food industry and to incorporate innovation in management, architecture and urban planning alike, to promote more healthy lifestyles.

Without greater efforts on prevention, there will be no cure for many of the diseases that develop, or the rising costs that they incur. That is certain to create new financial as well as human pain ahead.

Pharmaceutical groups become victims of their own success

Innovation

R&D struggles to meet requirements, says *Andrew Jack*

Every few months, the Hever Group – an informal gathering of the heads of research and development at the large pharmaceutical companies – comes together for what Jan Lundberg of Eli Lilly jokes is a collective crying session.

After the burst of productivity in drug development that followed the second world war – from antibiotics to blood pressure treatments – costs have risen while innovation has lagged behind.

That has left heads of R&D struggling to keep up, and cost many of them their jobs. Taking into account the expense of developing drugs that fail during testing and the cost of capital, industry estimates – while disputed by critics – put the average price tag for successfully producing each new treatment at more than $1bn.

Whatever the method of calculation or the precise figure arrived at per drug, the total of industry R&D investment – at $50bn a year, representing an average of 10-20 per cent of sales – generates a disappointing return. Fewer than 30 drugs were authorised by the US Food and Drug Administration last year.

To some, the crisis in innovation is the result of the end of a period of "low hanging fruit". According to that view, the easier work was completed in the latter part of the 20th century, with the discovery of simpler molecules to tackle well understood diseases.

In the process, the industry became a victim of its own success. The first wave of new medicines raised the bar for future products.

They also produced considerable revenues which the industry reinvested in elaborate new laboratories and equipment.

The pressure to replace the previous generation of "blockbusters" with alternative sources of income grew. But the era of "high throughput screening" and other industrialised methods that replaced intuitive, artisanal drug design during the 1980s and 1990s did little to boost productivity.

Meanwhile, regulatory demands and costs continued to rise. At least since the identification of birth defects caused by thalidomide in the late 1950s, and through to the more recent concerns over heart attacks linked to the painkiller Vioxx in the mid 2000s, the level of scrutiny of approval for new drugs has risen.

That means much larger and longer clinical trials in ever more segmented subgroups of patients.

Companies have adopted a range of responses, most encompassing managerial efforts to boost accountability, increase incentives and cut the size of research units to create a more entrepreneurial feeling, such as GlaxoSmithKline's Centres of Excellence in Drug Discovery. Eli Lilly has taken a lead in crowdsourcing through the likes of its Innocentive unit, which used the web to find people to solve scientific problems, and has since been sold to outside investors.

Some innovative drugs have still emerged, from cholesterol-lowering statins and antiretroviral treatments for HIV to drugs for hepatitis C, melanoma, leukaemia, rheumatoid arthritis and a range of enzyme replacement therapies for those with rare diseases.

But much of the new millennium has been overshadowed by investor scepticism, with pharmaceutical companies collectively valued at little more than the future cash flows of their current drugs.

In other words, their pipelines of experimental treatments have been judged to offer few prospects of success. The industry in turn has cut back sharply the size and scope of research.

In the UK alone, Pfizer has been winding down its historic postwar Sandwich R&D site in Kent and, earlier this year, AstraZeneca announced the closure of its Alderley Edge complex. Both until recently had been injected with substantial investment for new infrastructure. GSK has announced its withdrawal from some difficult treatment areas such as depression. Like several of its peers, it has moved away from in-house early stage development towards greater reliance on the broader "ecosystem" of biotech companies, aiming to license in the promising experimental drugs they produce. One concern however is that smaller biotech groups will not be able to compensate for such internal cuts, especially since many of them struggle to raise finance.

> Much of the new millennium has been overshadowed by investor scepticism

Another is that much collective experience is lost, as those losing their jobs fail to find alternative employment in the sector and expertise is depleted.

Today, a number of initiatives are under way, many of them linked to broader partnerships between industry, academic and medical practitioners. Some are designed to better design clinical trials to cut costs. Others seek to mine "big data". Still more focus on spanning the traditional competitive barriers between companies and the cultural divide between industry and universities.

Such moves have contributed to a re-rating of the pharmaceutical industry in recent months, with rising price to earnings ratios implying fresh confidence in companies' pipelines.

Yet some observers warn that the new buoyancy is indiscriminate and more linked to broader stock market optimism than a focused and long-term return to favour of drug research. And while investors may be happier with pharma for now, the party could yet still end in tears.

Attention turns to softer ways of dealing with addiction

Nothing else comes close as a leading cause of preventable disease, writes *Clive Cookson*

Addiction – to illicit drugs, alcohol and tobacco – imposes an enormous burden of ill health on the world. Nothing else comes close as a cause of preventable disease and premature death.

Policy makers have long struggled to work out the best response to the health problems born of addiction, torn between political pressure to take a hard line on substances of abuse and growing scientific evidence that a softer, more pragmatic approach – summed up in the phrase "harm reduction" – might work better.

Senior figures in the field highlighted the issues at a conference in Brussels this month. The central point, according to Wilson Compton, head of epidemiology and prevention research at the US National Institute on Drug Abuse, is that "addictions are a brain disease involving reward, memory and control circuits.

"Long-lasting brain changes are responsible for the distortions of thought and emotion that characterise addicts, including the compulsion to use drugs that is the essence of addiction," Dr Compton said. Policies to prevent and treat addiction must recognise this scientific reality.

Yet the political demand, especially in the US, is "to criminalise the behaviour," Dr Compton added. "It is based on the idea that if we punish you enough you will change behaviour. We have tried to punish people to get them to quit but it doesn't work very well."

His views were backed up by Mike Trace, British chairman of the International Drug Policy Consortium, who criticised "the lack of scientific knowledge and short attention spans of most policy makers. Politics red in tooth and claw deals very badly with drug addiction."

Statistics on illicit drug use are very unreliable, Mr Trace said. The UN estimates that 230m people worldwide use illicit substances or about 5 per cent of the adult global population; the estimated value of the illicit drug trade is $300bn to $450bn a year.

The most effective interventions, according to Françoise Dubois-Arber, a drug policy expert at the University of Lausanne, are those that work directly with addicts and their families.

These include personal counselling, administering less harmful substitute drugs, and needle exchange schemes. Scattergun public information campaigns designed to scare people off their addiction are ineffective.

When it comes to tobacco, the world's 1.3bn users face about a 50 per cent chance of dying from a smoking-related disease, says Delon Human, president of Health Diplomats, the advisers and consultancy. World consumption has risen from 5.1tn cigarettes smoked in 1990 to 5.9tn in 2012, driven by increasing demand in the developing world.

Tobacco control is another field where "harm reduction" causes controversy. Hardline campaigners, fighting for the eradication of all tobacco products, are reluctant to compromise – as they have shown in persuading the European Union to maintain a ban on snus, the Swedish mouth tobacco, in the face of evidence that it provides people addicted to nicotine with a safer substitute for cigarettes.

The point, which is not well understood by the general public or even by many doctors, is that nicotine is what makes smoking so addictive and therefore so hard to give up. Yet nicotine is not what makes cigarettes so dangerous, but the lethal mixture of tar and toxic chemicals sucked into the lung in tobacco smoke.

Therefore the harm can be reduced by persuading people to cut down or stop smoking in favour of other means of absorbing nicotine, which may not be completely safe but are much safer than cigarettes. Although the chemical is available in "nicotine replacement therapy" products such as chewing gum and skin patches, these have not really caught on with the public. Some health campaigners are pinning more hope on e-cigarettes, which mimic the look and feel of smoking more closely. These deliver nicotine vapour with relatively harmless carrier molecules into the lungs. "The hottest topic in tobacco control is the rapid adoption of e-cigarettes," says Dr Human.

The take-up of e-cigarettes over the past three years has been remarkable, agreed Martin Dockrell, director of research and policy at the British anti-smoking charity Action on Smoking and Health (Ash). The proportion of smokers currently using e-cigarettes has risen from 3 per cent in 2010 to 11 per cent in 2013, while the proportion that had ever used them has increased from 9 per cent to 36 per cent over the same period.

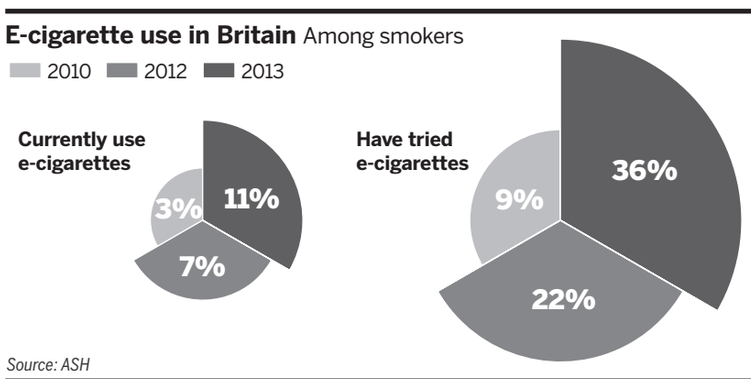
The rapid growth of e-cigarettes and similar consumer-oriented nicotine products, which may accelerate as tobacco companies such as British American Tobacco invest in the field, has caught policy makers by surprise.

Regulators around the world are scrambling – with little success so far – to come up with a consistent line on e-cigarettes. Policies announced so far, according to Mr Dockrell, range from total prohibition, through bans on their public use, to a "free market" approach which treats them under general product safety regulations.

Many health experts would like e-cigarettes to be regulated as medicines, since they contain a highly addictive substance, yet to be regulated in a way that does not stifle their consumption by smokers using them to give up cigarettes.

That would be the best outcome for reducing the harm done by smoking.

E-cigarette use in Britain Among smokers

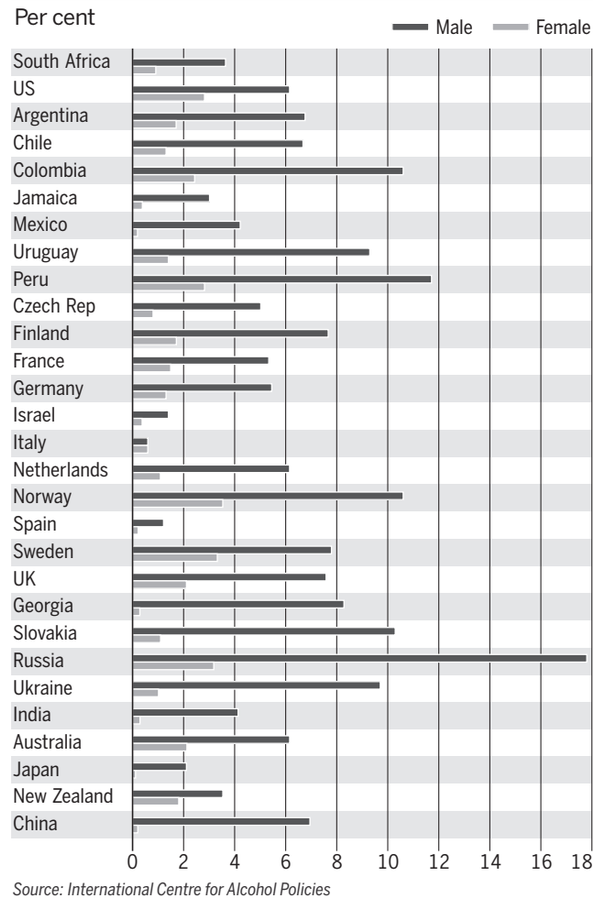


Source: ASH

Mist opportunity: health bodies would like to see e-cigarettes controlled, but some regulators would ban them

Getty

Alcohol dependence



Source: International Centre for Alcohol Policies

Demand climbs for care of ageing population outside hospital

Home-based care

Rose Jacobs looks at an industry that is growing at 5 per cent a year in the US

Carlos Nunez does not have the cure for cancer.

But the chief medical officer of CareFusion, a California-based medical technology company, thinks the next-best option matters, which is why he speaks proudly of a system developed to drain fluid from cancer patients' lungs.

Rather than requiring them to have periodic surgeries – procedures that can be long and painful – CareFusion's patients get a catheter placed in their lungs that attaches to a bottle and a vacuum, giving them breathing relief at home.

"Just because a person is dying of cancer, doesn't mean he has to be at the hospital all the time," says Dr Nunez.

Nor will that patient usually want to be.

Demographics point to a massive rise in the demand for home-based healthcare over the coming decades as millions of baby boomers begin to feel the impact of ageing and look for ways to receive care on their own terms rather than succumbing to any status quo.

But the desire of individuals to be cared for at home is only one of the forces behind the trend: in the US and Europe – partly because of demographics – governments are facing up to rising healthcare bills, and looking for ways to keep them in check. Home care here holds great promise.

"We are anticipating a much bigger amount of care taking place at people's homes," says Candace Imison, acting director of policy at The King's Fund.

The healthcare think-tank recently outlined 10 priorities for UK authorities with a hold on the country's health budgets.

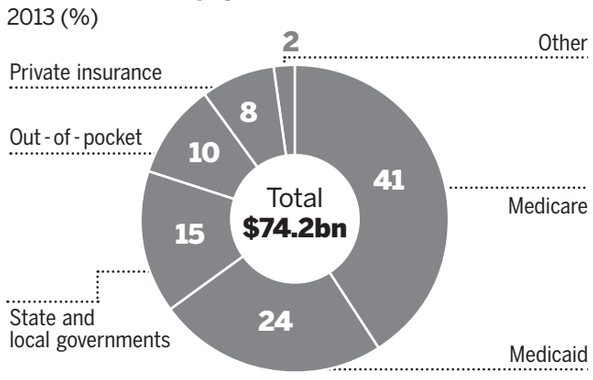
Several of these would aim to shift care from clinical settings into the home, including improved "self-management" of medical conditions and improved end-of-life care.

In the US, meanwhile, healthcare laws introduced under President Barack Obama incentivise a shift to home care, while the $74bn home care industry is already growing at an annual rate of about 5 per cent.

"Home care saves patients millions of dollars every year," says Anna Son, an analyst at market research group IBISWorld, which recently published a report on the approximately 300,000 businesses providing home care in the US.

Ms Imison warns, however, that the full extent of the potential savings is as yet unknown. The US agencies overseeing Medicaid, the federal health insurance programme for low-income individuals and families, estimate three people can be cared for at home for what it costs to care for one person in hospital.

How Americans pay for home care
2013 (%)



Source: IBISWorld

But that ratio might grow as home-care systems advance. Traditional models have been highly staff-intensive, for example, while many policy makers and industry experts count on technology fundamentally changing the way the best home care models work. That could range from more devices such as the lung-drainage systems Dr Nunez describes, to teleconferencing, to automated in-home medicine dispensers that not only offer up the appropriate pills at the appropriate times of day, but report back to a doctor or care worker about whether a patient has, in fact, taken those tablets.

Corporate R&D teams are eager to provide these sorts of devices, and Dr Nunez predicts the investment will gather pace as regulators respond in kind, accepting that they need to oversee new types of technologies, for new uses.

The US Food and Drug Administration recently contacted the makers of UChek, a smartphone app that analyses urine samples through photos, asking why the company had not sought agency approval.

But technology will invariably only go so far in facilitating the home care shift, and Thea Stein, chief executive of the Carers' Trust in the UK, worries that family members will bear the brunt of a cost-savings push.

"The family carer has to be seen as the unpaid member of the healthcare team," she says. "If not, you are likely to lead to serious levels of stress and strain; carers will collapse, and that will lead to a whole load of other costs to the system. So it's not just a moral duty – it's financially the right thing to do."

Moreover, she points out, while home care can save patients and carers cumbersome hospital and clinic visits, it can also lead to greater alienation.

"One of the things we hear most often from carers, is how terribly isolated they feel."

Ms Imison at the King's Fund agrees that the key to the success of home care depends on the people supplying it, and she argues that considerable thought and investment needs to go into retraining large portions of the medical workforce to care for people in their homes rather than in hospital.

Even then, she says, by 2025, there could be a 35 per cent gap between demand for social care workers in the UK and supply.

But, here, demographics may help, Ms Imison says: "There is a role here for volunteers and the older generation themselves – we think the fit baby boomers will help the unfit."

It may seem an optimistic view. But Dr Nunez argues that creative solutions will be necessary, particularly as developed-world diseases such as diabetes add to the strain.

"We're entering a brave new world," he says. "And if we're going to save both lives and money, we need to be nimble."

'Weak system' threatens development

India Glaring needs have spurred the state and others to try to fill the gap, says *Amy Kazmin*

When Jacintha Shekar, a 46-year-old New Delhi housekeeper, was diagnosed with stage-three uterine cancer last year, her family tried desperately to get her an emergency operation at a government hospital that ostensibly provides free healthcare to those who need it.

But at each of the overstretched state hospitals she visited, Mrs Shekar was rebuffed, or told she would have to wait months for the life-saving procedure. "We were given a date for four to five months later, but the operation was required urgently, within a week," her 23-year-old daughter Julie recalls.

Eventually, Mrs Shekar's family turned to a private hospital, where costs for her surgery and subsequent chemotherapy exceeded Rs500,000 – far beyond the family's means.

Nearly a year on, Mrs Shekar is cancer free, but her family's debts could take years to repay.

Such tales are common in India, highlighting the country's difficulty in providing sustainable access to healthcare to its 1.3bn people, especially the urban poor and rural dwellers.

According to Oxfam, the UK-based charity, about 40 per cent of Indians borrow money to finance their hospital treatment each year, while 23 per cent of the ill never obtain care at all, casualties of a medical system with some of the world's lowest ratios of doctors, nurses and hospital beds to the size of the population.

For affluent Indians, expanding private hospital chains such as Apollo, Max, and Fortis are providing upmarket, state-of-the-art treatment – and attract well-to-do patients from neighbouring countries and even from Africa.

But India spends just 9 per cent of gross domestic product on health, one of the world's lowest levels of public healthcare funding. The shortage of resources – coupled with poor, highly bureaucratic, management – has left public hospitals straining at the seams.

In a report last year, Deloitte, the consultancy, described India's healthcare infrastructure as "one of the weakest and not comparable with other developing nations". It warned that the lack of inclusive healthcare "is, and will continue to be, a huge barrier for India's economic growth".

Yet the glaring need for wider healthcare access is spurring new innovations, as the government, and entrepreneurs, try to fill the gaps.

Over the past decade, southern India has seen the emergence of private "no-frills" hospitals dedicated to lower cost healthcare, usually in one specialised area so they can achieve the efficiencies of economies of scale.

Bangalore-based Narayana Hrudayalaya – now expanding both in numbers of hospitals and new therapeutic areas – can perform more than 30 heart operations a day at its flagship 1,000-bed heart hospital, while Aravind Eye Hospitals perform more than 370,000 procedures a year at 10 clinics in the southern state of Tamil Nadu, many of them free.

Others are trying to emulate their success. LifeSpring, a six-year-old company backed by the Acumen Fund, is dedicated to providing safe maternal care at prices low-income urban women can afford. It operates 12 20-bed hospitals in the southern city of Hyderabad, and hopes to expand to 100 hospitals across India in the next five years.

Meanwhile, Vaatsalya is a chain of 15 hospitals based in areas just outside towns and in rural areas in Karnataka and Andhra Pradesh providing affordable healthcare to underserved populations. The potential for success for many of these so-called "frugal hospitals" has been bolstered by new state-sponsored health insurance schemes that aim to provide financial protection for the poor from "catastrophic" emergencies that require hospitalisation or surgery.

'No frills' hospital in Bangalore cuts costs Getty

These new schemes – one run by the central government, and the rest set up by different state governments since 2007 – provide a flat fee to participating hospitals to treat patients for specified ailments and allow patients to choose their care provider.

About 240m Indians were covered by such schemes as of 2010, and a recent World Bank study argued the programmes were a "promising foundation" for reform.

But some experts are concerned that the state insurance schemes' focus on major surgery or ailments requiring hospitalisation could affect funding for desperately needed improvements in primary care.

> The shortage of resources has public hospitals straining at the seams

Alkesh Wadhwani, who helps oversee health programmes in India for the Bill & Melinda Gates Foundation, says the programmes should ideally expand to cover primary care, too, which he says would both reduce country's high number of preventable deaths and long-term costs. "Most countries put more money towards primary care and outpatient care, rather than inpatient," he says. "Outpatient care tends to address issues that, if not addressed, can lead to a need for more expensive treatment later on. In India, even outpatient care takes people into poverty, if not into bankruptcy."

Factory-style focus calls for change in behaviour

Country profile The US

Sarah Murray finds obstacles in the way of a team-based concept of care

As US healthcare shifts from volume to value, the concept of a team-based approach is gaining momentum. In theory, this strategy – delivered through accountable care organisations (ACOs) – improves care quality and cuts costs. The question is whether providers can make the technological and cultural transformations required for it to work.

No single definition of an ACO exists, except in the context of the Affordable Care Act, through which the federal government gives incentives for providers – ranging from doctors and hospitals to long-term care facilities – to co-ordinate care for patients of Medicare, the federally administered health plan for the elderly.

Outside the Medicare system, however, different models are emerging. Ohio's Cleveland Clinic, for example, has not signed up as an ACO but is pioneering three models of co-ordinated care before deciding which to pursue.

"The term is correlated with a delivery model and how physicians work together," says Tom Latkovic, a director and healthcare sector expert at McKinsey, the consultancy. "But there's a huge array of designs and models."

The economics are changing, too. "It's moving away from volume-based healthcare, where we get paid for every widget of work we do whether it's necessary or not, and whether we do it well or not, to a value-based system," says Dr David Longworth, chairman of the Medicine Institute at the Cleveland Clinic.

The idea is that a team-based approach cuts costs and gives patients a better quality of care.

"It allows you to reduce duplication and have care take place in the most effective environment, which is often not a hospital," says Dr Mitch Morris, a principal in the life sciences and healthcare practice at Deloitte Consulting.

However, while many agree this makes sense, the US faces considerable obstacles in implementing it.

First, care co-ordination will rely heavily on IT systems, particularly given the fragmented US industry and an ageing population with multiple conditions.

> 'If healthcare executives and officials are willing to take bold action, there is a path'

A patient with heart failure might have 34 related conditions, from coronary artery disease to depression, all requiring the attention of specialists, says Regina Herzlinger, a Harvard Business School professor widely recognised for her research.

"These 34 people need to talk to each other," she says. "But the average doctor has between 1,500 and 2,000 patients. Clearly they can't hold a conversation about every patient so they need IT systems that are uniform – and those do not exist."

Even the adoption of electronic records has been slow. Only 12.2 per cent of Medicare professionals had reported "meaningful use" of electronic records by 2012, according to the New England Journal of Medicine.

Moreover, shifting from payment for procedures to payment for improved health raises the thorny question of measurement.

Some indicators can be assessed easily – for example, blood sugar levels in diabetics or beta-blocker use in heart attack patients.

But defining and rewarding improvements requires close relationships with patients before and after treatment.

"It's not just about measuring processes, but patient-reported outcomes," says Dr Longworth. "So, if you have a hip replacement, how quickly did you get back to work and can you jog?"

A big cultural shift is required, too, in moving from a system where medical staff are paid for individual diagnostics or treatments. Prof Herzlinger says a more realistic approach would be "focused factories" of care, with providers offering cost transparency and the ability to compare quality across suppliers.

Whatever models eventually emerge, increasing pressures on the US system mean the move towards greater efficiency will come of necessity.

"It's going to be incredibly difficult," says Mr Latkovic. "But we estimate that we can save at least $1tn over the next decade and, if healthcare executives and government leaders are willing to take bold action, there's a path."

Dr Longworth believes the collective care model can work but that it demands a completely different way of thinking.

"Change management is required to engage providers and convince them to think about care delivery in a new way."

Jewel in the crown requires resetting for the 21st century

Guest column NICHOLAS TIMMINS

British health ministers have a tendency to declare the country's National Health Service to be "the envy of the world" – although Jeremy Hunt, the current health secretary, has so far resisted the temptation, merely stating that it has the potential "to do something truly remarkable".

Certainly, for all its flaws, it attracts loyalty like no other country's health system. Nigel Lawson, former chancellor the exchequer, once described it as "the closest thing the English have to a religion" and many outside observers watched the role it played in last year's Olympics opening ceremony with awe, bemusement and amazement.

But as the NHS prepares to celebrate its 65th birthday, just how good, and just how sustainable is it? Bits have, so to speak, fallen off the edges. It is no longer entirely free at the point of use. England has prescription charges. Much dentistry is now paid for privately, along with most spectacles and contact lenses. The old long-stay hospital wards for the elderly have long since disappeared, the care they used to provide quietly shifted over to means-tested social care.

The essential edifice from 1948, however, still stands. Its universal access and care largely free at the point of use means that, in repeated international surveys, UK patients are the least likely to say they have gone without treatment because they cannot afford it, and are least likely to say the system is broken to the point where it needs radical change. Britain's system of family doctoring, while under evident strain, is admired – although there is a growing sense that this "jewel in the crown" needs resetting for it be fully effective for the 21st century. And, by the standards of big industrialised countries, the tax-funded NHS remains relatively cheap with excellent cost control. It may cost £120bn. But public spending as a share of national income – let alone total spending once private expenditure is added in – remains comfortably below that of France, Germany, the Netherlands, Canada or New Zealand, for example, let alone the US.

What does it get for that? A mix is the answer. The UK has some of the best hospitals and medicine in the world – cardiac surgery outcomes, for example, are outstanding – as well as some truly appalling examples of care – witness the recent report on events between 2006 and 2009 at Stafford hospital, in the middle of England. There are, as in other health systems, huge variations in clinical results between hospitals.

And on a number of indicators – one and five-year survival rates from a range of cancers for example – the UK as a whole lags persistently behind the European average. A recent 18-country comparison published in The Lancet, the medical journal, showed significant improvements in both mortality and disability between 1990 and 2010 – but also that a number of other countries improved faster leading to the UK's relative position worsening in some, but not all, areas. Much of this is due to lifestyle factors – smoking, alcohol, obesity – that are arguably beyond the immediate reach of a health service which, with some notable exceptions, has always tended to be better at treating disease rather than preventing it or detecting it early.

> A former finance minister described the NHS as 'the closest the English have to a religion'

So whether the UK is an example to the world – not that any country has ever adopted wholesale any other country's health system – depends on what you wish for.

Good cost control, no fear about medical bills, relatively inexpensive, still somewhat paternalistic, and with results that are far from entirely bad, but are not great overall and are still a long way short of consistently outstanding.

Its sustainability for the future is the big question. The global financial crisis, the UK's economic performance, and the implications of both for public spending, mean that the NHS is still in the earlier part of what may be close to 10 years of no growth in real terms, something no other health system has ever achieved. Other countries hit by the same toxic mix are already raising charges, cutting what is included in the health package, or slashing pay.

The optimists believe this austerity may finally force a series of changes that the policy gurus have long believed necessary – the concentration of specialist services in fewer specialist centres, more healthcare "factories" for routine operations, a smaller hospital base, more care at home or near it, far better integration of health and social care and publication of much more information on clinical results and patient satisfaction as a way of creating peer and public pressure for improvement.

This, the evidence suggests, should raise quality. It may save money. The alternative, as Sir David Nicholson, the outgoing chief executive of NHS England remarked recently, is "managed decline" – or, possibly, not so managed decline.

Nicholas Timmins is Senior Fellow at the UK's Institute for Government and at The King's Fund

Contributors »

Andrew Jack Pharmaceuticals correspondent

Clive Cookson Science editor

Sarah Neville Public policy editor

Amy Kazmin South Asia correspondent

Sarah Murray FT contributor

Rose Jacobs FT contributor

Nicholas Timmins Fellow at Institute for Government and King's Fund

Stephanie Gray Commissioning editor

Andy Mears Picture editor

Steven Bird Designer

For advertising, contact: **Ian Edwards**, +44 (0) 207 873 3272; ian.edwards@ft.com