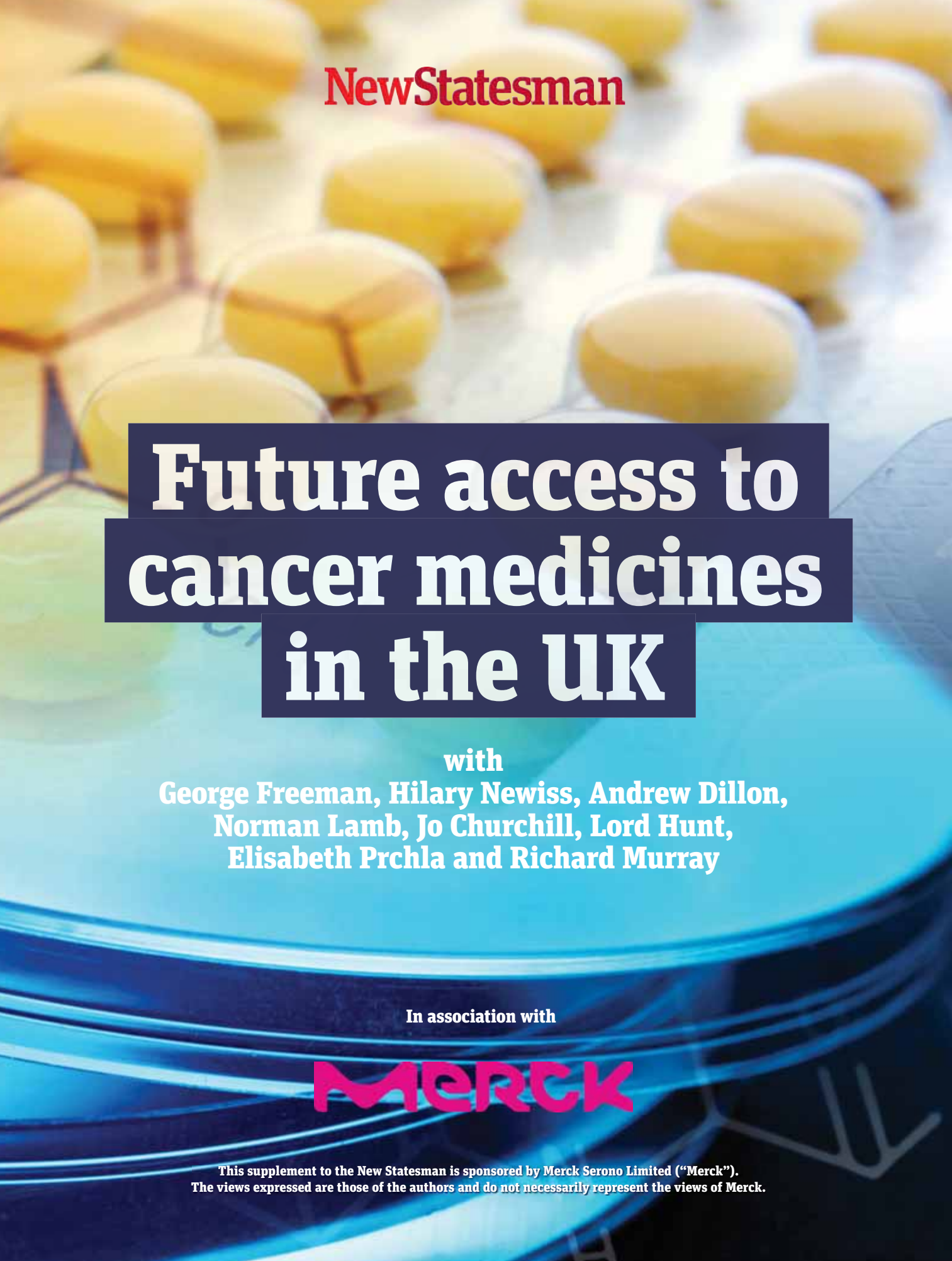


NewStatesman

Future access to cancer medicines in the UK

with
George Freeman, Hilary Newiss, Andrew Dillon, Norman Lamb, Jo Churchill, Lord Hunt, Elisabeth Prchla and Richard Murray

In association with

MERCK

Health check

ICER
Incremental cost-effectiveness ratio

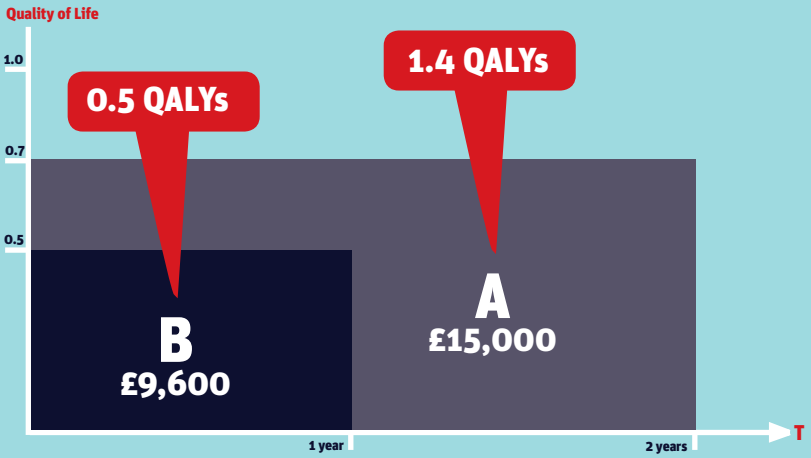
$$\text{ICER} = \frac{\text{Cost of treatment A (£)} - \text{Cost of treatment B (£)}}{\text{Outcome of treatment A (QALY)} - \text{Outcome of treatment B (QALY)}}$$

< £20,000 = fund

> £30,000 = reject

The National Institute for Health and Care Excellence (NICE) uses a threshold to determine cost-effectiveness of new treatments. Less than £20k per year to extend quality of life is acceptable. Over £30k is not (an exception is made for end-of-life criteria up to a £50k threshold)

An example of how to calculate value

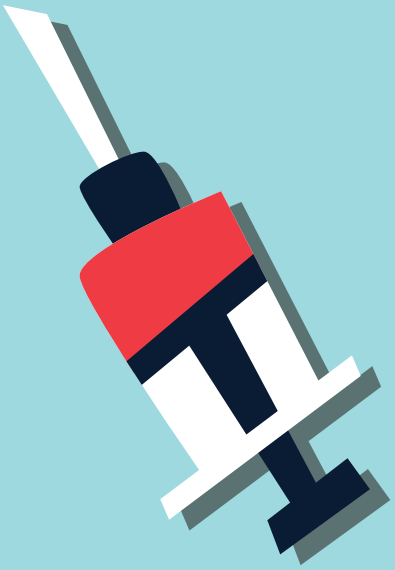


$$\text{ICER} = \frac{£15{,}000 - £9{,}600}{1.4 \text{ QALYs} - 0.5 \text{ QALYs}} = 6{,}000 \frac{£}{\text{QALYs}}$$

Rate of recommendation

8/10
technologies are recommended by NICE

6/10
cancer drugs are recommended by NICE



£619m
Amount pharmaceutical industry spent in 2015 to help pay for medicines for NHS patients (PPRS rebate)

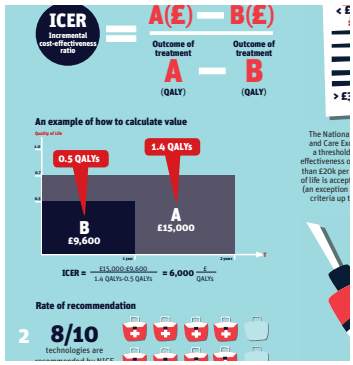
Sources: Association of the British Pharmaceutical Industry, 2015; University of York; National Institute for Health and Care Excellence, 2015
http://www.abpi.org.uk/industry-info/knowledge-hub/medicines/Pages/nice.aspx (accessed March 2016)
https://www.nice.org.uk/news/blog/carrying-nice-over-the-threshold (accessed March 2016)

SHUTTERSTOCK/GRAPHICS BY LEON PARKS

New Statesman
2nd Floor
71-73 Carter Lane
London EC4V 5EQ
Tel 020 7936 6400
Subscription inquiries:
Stephen Brasher
sbrasher@
newstatesman.co.uk
0800 731 8496

Supplement Editor
Jon Bernstein
Design and Production
Leon Parks
Sub-Editors
Peter Barker
Prudence Hone
Ian Malin

Commercial Director
Peter Coombs
+44 (0)20 3096 2268
Account Director
Dominic Rae
+44 (0)20 3096 2273



Value for money is vital in health care

How to clear the barriers to access

George Freeman gazes into the future

Access all areas

The means may be disputed but the ends are not. Policymakers, health professionals, patients and pharmaceutical companies all agree that the timely discovery and adoption of medicines that prolong and improve lives is an essential mission of health care.

Nowhere is this goal more fundamental than in the pursuit of cancer treatments. It is a motherhood issue. For evidence, look no further than two recent efforts to address it – the Cancer Drugs Fund, introduced by the coalition government in 2011 and about to be reconstituted; and the Accelerated Access Review, commissioned by the Minister for Life Sciences, George Freeman, which, in his own words (*see page 12*), was launched to "ask a very simple but profound question: how do we adapt the UK landscape to this new world of 21st-century precision medicine?"

Yet the consensus only goes so far. The record of the Cancer Drugs Fund has been mixed (*page six*) and even those inside the last government are critical. Norman Lamb, a health minister until last May, writes on page 11 that "though well-intentioned, the Cancer Drugs Fund in its current form falls some way short of . . . a scheme that is equitable, evidence-based and sustainable".

Other voices weighing in on the subject include Richard Murray from the King's Fund; Hilary Newiss, chair of National Voices; and the NICE chief executive, Andrew Dillon (*pages eight and nine*). The last word goes to Jo Churchill MP, a cancer survivor twice over. "In 2010, in my first speech in parliament as a cancer campaigner, I called for more to be done. We lagged behind many other countries in outcomes and unfortunately, although UK cancer survival is at its highest, we still do." ●

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Maintaining life sciences in the UK

The government must continue to support a sector that plays a crucial role in promoting the nation's health and economic growth, writes **Elisabeth Prchla**

> "Life sciences is a jewel in the crown of our economy." [1]
>
> *David Cameron, Prime Minister*

The life sciences sector is a major contributor to the UK economy. The sector (including pharmaceuticals, biotechnology, medical technology and diagnostics) generates an estimated annual turnover of £56bn and employs over 183,000 people in more than 4,398 companies[2].

Merck is a pioneering company with a unique combination of businesses across health care, life science and performance materials. In 2014, our global research and development investment totalled €1.7bn[3]. We focus on combining specialist and high-quality products to create solutions in health care that advance technologies for life, including the development of personalised medicines for the treatment of cancers and developing biomarkers that match effective treatment to individual patients. Most recently, our research in immuno-oncology is challenging the direction of cancer care as we know it by exploring how the immune system recognises cancer cells and destroys them.

The life sciences contribution to the UK economy has been recognised by successive governments, which have introduced policies to help support sustainable growth in the sector and to maintain the UK's position as an attractive destination for research and development investment.

However, there remains a major concern in the UK as to how some medicines are evaluated and assessed through technology appraisals which could ultimately affect the biopharmaceutical industry's willingness to invest in the sector. We should ask on both counts if the UK can learn anything from initiatives and support mechanisms that are in place in other countries.

Meanwhile the Accelerated Access Review (AAR) has been welcomed by the pharmaceutical industry as an opportunity to speed up access to innovative drugs, devices and diagnostics for NHS patients in the UK[4]. The AAR is intending to explore ways to engage in earlier dialogue with industry, increase incentives to invest in UK health care and review reimbursement and health system barriers to access and uptake. The much-anticipated final report is due this month.

With the original Cancer Drugs Fund (CDF) having ended recently, the government is now presented with a challenge: the need to manage the growing number of innovative cancer medicines within a fixed budget, whilst acknowledging the importance of accelerating access under the AAR.

While initiatives such as the AAR make sense and are clearly very important, we would like to see further system-wide change and implementation in order to support access to innovative medicines.

However, the need for reform is not a new dilemma. The CDF was introduced in England in 2010 as a means to provide patients in the NHS with cancer drugs not approved by the National Institute for Health and Care Excellence (NICE) until a new model of value-based pricing (VBP) was introduced.[5]

Later in 2010, the government announced its plans for the VBP mechanism, in recognition that NICE methodology for appraisals may not capture the full value of medicines in conditions such as cancer. This gave rise to a review of methods and the introduction of value-based assessment (VBA).

In 2014, NICE concluded[6] that further work needed to be undertaken to enable changes to its appraisal methods and made proposals including:

- An "agreement between NICE, NHS England and the Department of Health, on the NHS's willingness to pay for new treatments, which would take account of any special cases, such as ultra-orphan conditions and cancer".
- "More productive sharing of risk between companies and the NHS. The aim would be to progressively reflect the value of new treatments as our knowledge of what they can offer to patients increases."

Now, in 2016, the CDF (in its old form) is ending and is to be replaced by a system in which all new cancer drugs are to be referred to NICE for appraisal[7]. The original CDF list will be available while NICE makes an evaluation but will remain closed to new drugs pending the start of the new scheme in July this year.

The new CDF aims at providing patients with access to promising new medicines (while the evidence is still emerging) through an annual "managed access" fund of £340m. Though the idea is encouraging on many levels, how this fund will work in practice has been flagged as a concern by industry in its feedback to NHS England.[8]

Merck is committed to working closely with NHS England and appropriate bodies through ongoing appraisals within this evolving system. However, we share the view of the Association of the British Pharmaceutical Industry[9](ABPI) that the finalised proposals confirm a seemingly reduced level of ambition from NHS England for providing NHS patients with access to the latest cancer medicines because the NICE decision-making process remains largely unchanged.

In summary, life sciences contribute significantly to the UK economy; however, access to innovative medicines is not always straightforward. A number of initiatives are ongoing to address this issue but more needs to be done.

Merck will continue to work closely with NHS England and appropriate bodies to ensure that innovative treatments can be accessed by the right patients at the right time.

Elisabeth Prchla is general manager (UK and ROI) at Merck

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Slow road to the fast track

As government, industry and patients wrestle once again with the access issue, **Jon Bernstein** looks at recent attempts to address it, and overleaf four leading voices on health offer some timely advice

To understand the imperatives, complexities and frustrations that accompany attempts to ensure timely access to medicines in England, it's worth retracing the story, so far, of the Cancer Drugs Fund.

Its roots can be traced back to 13 April 2010. That was the day David Cameron – then leader of the opposition – launched the Conservative Party's manifesto in the build-up to the general election. On page 47 of the rather quixotically titled *Invitation to Join the Government of Britain*, and under the plaintive heading "Increase access to vital drugs and services", came the following promise:

"NHS patients rightly expect to be among the first in the world to access effective treatments, but under Labour they are among the last. We want more people to access the drugs and treatments that would prolong or improve their lives by reforming the way drug companies are paid for NHS medicines.

"Using money saved by the NHS through our pledge to stop Labour's jobs tax, we will create a Cancer Drugs Fund to enable patients to access the cancer drugs their doctors think will help them."

In the event, Cameron's party didn't win an overall majority and was obliged to invite the Liberal Democrats to join the government of Britain. Despite this inconvenience, plans for the fund survived the coalition negotiations and in 2011 the CDF was introduced – the CDF being a £200m-a-year pot of money designed to bypass medicines regulator, the National Institute for Health and Care Excellence (NICE). If NICE rejected NHS adoption of certain cancer drugs – or had yet to appraise those drugs – the CDF could latterly grant access by underwriting the cost.

In the first two years of the fund's existence, an estimated 44,000 patients benefited from it and by early 2016 it had helped more than 80,000 patients get access to medicines they might not have otherwise received.

Large-scale overspending

So far, so encouraging. Yes, the initiative had some critics – the Scottish government ruled that introducing something similar north of the border was unnecessary, while the NICE chairman, Sir Mike Rawlins, pointed out to the Commons health select committee in 2012 that there are "other rotten diseases apart from cancer. To limit it to cancer has always made me uncomfortable."

Nevertheless, the Cancer Drugs Fund did appear to fulfil a need.

There remained a big problem, however – overspending on a large scale. In 2015-16, the CDF was on course to spend £340m, or 70 per cent above the allocated budget. A public accounts committee report in February criticised the management of the fund and suggested there was no evidence that it was benefiting patients.

And now the CDF – although it lives on in name – is about to be transformed dramatically. Consultation for the new CDF began last November and by April it will become part of NICE's assessment process for new drugs. It will no longer be a separate fund.

Mounting a robust defence for the new role of the CDF, Simon Stevens, chief ex-

Drip, drip, drip: access to innovative pharmaceuticals, medical devices and *in vitro* diagnostics remains slow

ecutive of NHS England, said it would be used to "sort the wheat from the chaff" and would "fast-track exciting new drugs". Launching the consultation, he argued: "Over the next five years we're likely to see many new cancer drugs coming on to the worldwide market, some of which will be major therapeutic breakthroughs and some of which will turn out to offer little extra patient benefit but at enormous cost."

Meanwhile, Cancer Research UK's director of policy, Alison Cook, told the *Times*: "It's been clear for some time that [the fund] is not sustainable. We'd like to see a single system for drugs approvals that can respond to patients' needs."

While Stevens' and Cook's arguments are perfectly reasonable, the CDF was set up with a specific purpose – to bypass the current processes – and few believe the old inefficiencies have been resolved. The Department of Health-initiated Accelerated Access Review – expected to report back its findings imminently – is testament to that. The goal of the AAR, originally announced last March, is "to ensure that the UK is the fastest place in the world for the design, development and widespread adoption of medical innovations. This will help stimulate new investment, jobs and economic growth to support a stronger NHS".

Barriers to access

So, why is access to treatment such a thorny issue? A July 2015 report by Monitor Deloitte, the Centre for the Advancement of Sustainable Medical Innovation and the health think tank the King's Fund attempts to answer that question.

> The NHS overspent on drugs last year to the tune of £619m

Commissioned as part of the AAR process, the report identifies four "cross-cutting" challenges for access to innovative pharmaceuticals, medical devices and *in vitro* diagnostics.

The first challenge is what the report authors describe as a lack of "alignment across stakeholders". In other words, the goals of those involved in the process from development to adoption of new technologies and medicines don't match up. Or, at best, there is misunderstanding between those involved. This happens between the national level and the local level where treatments are adopted.

There is also a lack of industry understanding of NHS clinical priorities. Meanwhile, the voice of the patient is little heard.

The second challenge is the existence of counterproductive incentives. An example of this is where budgets are treated separately across NHS organisations and therefore potential costs become a barrier for adoption.

The third challenge is the failure to use data as evidence for the use of new treatments. This is sometimes because there is a lack of clarity around – or availability of – evidence required to make the case.

The final challenge, the report authors argue, is cultural. A lack of trust between the NHS and industry is, the report ▶

SHUTTERSTOCK

notes, "a key barrier to more collaborative working". Other cultural barriers include an aversion to risk, distrust of external data and evidence, and unconstructive competition between NHS organisations.

There are also barriers that are specific to the pharmaceutical industry. These, the report argues, are present at every stage from drug development to local commissioning and adoption. At the beginning of that journey – at the development stage – there is resistance to conduct clinical research within the NHS or a lack of resources to do that research. The regulation stage is stymied by a lack of early dialogue, misaligned perceptions of risk and benefit, and limited access to early approval. When it comes to national reimbursement, evidence requirements, different definitions of value and differing objectives among those involved all act as barriers to access. Local commissioning and adoption is stymied by process duplication, budget silos, lack of accountability and lack of transparency about outcomes.

Why is access to treatment such a thorny issue?

Measuring value

A theme that runs through all of these barriers and challenges is a lack of agreement over costs and values, either what constitutes value for money or, more fundamentally, how to measure it.

The NHS does measure the cost effectiveness of the medicines it considers, or rather, the regulator NICE does. NICE uses a threshold to determine whether a new treatment represents value for money. It determines what it calls incremental cost-effectiveness ratios (ICERs) by calculating the variance in the cost of two treatments and dividing that by the difference in outcomes as a result of those two treatments. Outcomes are based on what are called quality adjusted life years (QALYs), a trade-off between full health and time.

At present, if the ICER comes in at less than £20,000 per QALY, then it is deemed as favourable by NICE. In other words, access to the medicine is likely to be granted. If the calculation comes to more than £30,000 per QALY, then the medicine will be rejected. In exceptional circumstances – where life expectancy is short or the patient population is less than 7,000 – then the ICER threshold can be extended to £50,000 per QALY.

When it measures cost effectiveness, NICE is not only looking at the price of the

What should government do to ensure access to cancer medicines?

Hilary Newiss

"Bureaucracy can slow down research projects, but it can't be used to slow down cancer growth."

Person living with cancer

New drugs, devices and diagnostics are developed to support the treatment and care of patients, yet patients can be conspicuously absent from the development process.

If we want to ensure future access to medicines, a good place to start is finding out what is important to the people who will be using those medicines. Cancer patients across the country report that poor communication is the aspect of care most in need of improvement. That means better information about diagnosis and treatment options, and better information about new medicines and the decisions about their availability.

As a society, we are increasingly empowered to take advantage of innovation to manage our own care. We can download apps, buy monitors, or wear watches that help us to look after our health. People are playing a more active role in determining their own care. This should extend to the development of new medicines and treatments.

Decisions about access to new medicines are based on whether that treatment will bring about a positive outcome. Who is better placed to determine what a positive outcome looks like than the people the treatment is intended for?

Information is key. Patients need to know when decisions will be made about access to new treatments, what new treatments have become available for them, and how to challenge decisions about access to new treatments. With that information, patients can play an important role in determining access.

Instead of leaving it to researchers, regulators, commissioners, or politicians to decide the pros and cons of a new medicine, let's involve the patients. ●

Hilary Newiss is chair of National Voices, a coalition of 160 health and care charities

What should government do to ensure future access to cancer medicines?

Richard Murray

Ensuring better access to cancer medicines – and, indeed, innovative products and technology – more widely requires a number of interlocking changes. First, it needs the NHS and industry to work together even before launch to identify, on one side, the key needs of the NHS and, on the other, the key upcoming innovations and then to use this understanding to speed up the development process. This information can also be used to make the necessary steps to prepare the NHS to make best use of innovative products.

Second, development processes for cancer drugs are already faster than in the past. This creates a challenge for the cost-effectiveness assessment undertaken by NICE, as it means these products almost inevitably have a less complete evidence base on which it can make a judgement. To overcome this challenge, NICE needs greater flexibility in handling this uncertainty in the evidence base, for example, by making a "conditional" judgement to be followed in due course by a final judgement.

Third, we need greater flexibility in pricing systems so the NHS can better tailor payment to the product, rather than apply the current one-size-fits-all approach. Many other European countries already use a wider array of approaches to pricing.

Fourth and finally, more help is needed to support the NHS to make the sometimes complex changes to care that innovation can require. This all represents a significant set of changes that will be considered in the Accelerated Access Review, due to report in the spring. ●

Richard Murray, director of policy, the King's Fund

What should government do to ensure access to cancer medicines?
Andrew Dillon

In this life sciences ecosystem, where researchers, drug manufacturers, regulators, evaluation agencies (such as NICE), governments and health systems need to engage successfully for the interest of patients to gain primacy, the struggle to align ambition and optimise efficiency of process is a continuing challenge. We are unlikely ever to achieve full alignment or optimal efficiency, but getting as close as possible requires changes for all the ecosystem's inhabitants.

Health systems need to be clearer about their ambition for access to new therapies; regulators need to adapt their evidence requirements and timelines to be consistent with the nature of the evidence for new products and with risk appetite of their government sponsor; agencies that assess value have to sensitise their judgements to the ambition and capacity of their health system and the health system itself has to be creative and flexible in finding ways to manage the adoption of the new products it wants into routine practice.

And companies? They have to change, too. They have to understand better and work with the ambitions of systems and the constraints they are under. They have to be more self-critical of the value propositions they submit, they have to price realistically and fairly, and they must be prepared to match the creativity and flexibility of their customers. ●

Andrew Dillon is chief executive of NICE

What should government do to ensure access to cancer medicines?
Jo Churchill

In 2010, in my first speech in parliament as a cancer campaigner, I called for more to be done. We lagged behind many other countries in outcomes and unfortunately, although UK cancer survival is at its highest, we still do.

Multiple issues, from late diagnosis and the strain on diagnostics to radiotherapy machines being beyond their sell-by date are all a problem. But most challengingly £1.2bn spent on the Cancer Drugs Fund (CDF) in the past five years, with ever-increasing demand, doesn't guarantee patient access to the best treatments. We need a sustainable model.

The current NICE system is broken, our drugs pathway is clogged and getting drugs licensed in a timely manner is impossible. This is challenging on two counts. First, we have the most vibrant life science industry, with huge advances in genomics and informatics within reach and second because, having developed the drugs and trialled them here, other countries seem to get speedier access to them. I hope the Accelerated Access Review, which has been looking at new approaches to access to drugs and other countries' models for pricing and reimbursement, and the CDF consultation, will start to bring forward much-needed changes.

I want the future not to be a lottery. A new CDF should be where we trial drugs, collect evidence to ensure a drug or treatment can be licensed and prescribed or rejected speedily. That would be a truly patient-centred approach. However, it is patients and patient data that hold the key to unlocking the future of cancer medicine. Only by collating and building evidence of cancer patients and their treatment can we better understand the challenges and find the solutions. ●

Jo Churchill is the MP for Bury St Edmunds (Conservative) and a cancer survivor in 1995 and again in 2009

medicines. This means, in theory at least, that a medicine that costs nothing may still be rejected. Why? A number of reasons. It may be that associated costs mean that the delivery outweighs the health benefits. Or that the use of the medicine (or other technology) may increase the use of other, costly health resources.

Money-back guarantee

Given cost effectiveness is a critical factor in determining the use of medicines, the Department of Health and the pharmaceutical industry struck a deal known as the Pharmaceutical Price Regulation Scheme (PPRS).

Under the terms of this scheme, there is a cap of £8bn that the NHS will spend on branded medicines. Any expenditure above that amount will be reimbursed by the pharmaceutical companies. According to figures from the Association of the British Pharmaceutical Industry, the NHS overspend last year amounted to £619m and in the next five years the industry expects to pay back £4bn.

In Scotland, the approach is a little different. Adaptive pricing reforms, introduced in 2014, allow pharmaceutical companies to drop their prices if approval has been rejected on the grounds of cost but not efficacy. This allows the drug companies to be reconsidered without having to resubmit bids from scratch. "Often there is room for manoeuvre," the Scottish Health Secretary, Alex Neil, has said.

Precision engineering

Emerging trends demand that a fresh approach be sought in the way that new medicines are evaluated and introduced into the healthcare system in the UK. So believes Professor Sir John Bell, Regius Professor of Medicine at Oxford University and chairman of the Accelerated Access Review's external advisory group. Writing in the AAR's interim report last autumn, he noted: "After 25 years of intense molecular characterisation of disease, it is increasingly possible to define precisely the mechanisms responsible for mediating disease and consequently, how it can be best managed or treated.

"Our ability to categorise disease in patients much more precisely is likely to have a profound effect on clinical medicine as we identify sub-populations of patients likely to obtain maximum benefit from therapies. Resources can thereby be concentrated on those who will benefit the most rather than the population at large. This focus on patient sub-populations, which is the basis of "precision medicine", has already begun to affect the quality of new therapeutic products."

In the same interim report, the AAR chairman, Sir Hugh Taylor, sounded a warning. Acknowledging the financial restraints facing the National Health ▶

Service, Taylor argued that England "will lose ground if research budgets are threatened, if our leading academic hospitals cannot afford to support research or use the latest drugs and technologies to pioneer developments in the treatment of the most complex conditions, or if the wider system is paralysed by the cost pressures it is facing and fails to invest in the change and innovation it requires to deliver better care to patients more efficiently and productively."

He added: "Patients can and should be at the centre of this stage. They and their representatives have been fully engaged in this review. For them, and in the best interests of the economy and our health system, we have to meet two challenges.

"First, we have to find a way of getting ahead of the curve in anticipation of the potentially transformative technologies that are on the horizon, and in some cases already with us, so that these can be brought to our health system in a sustainable way which benefits our patients, which taxpayers can afford, and which works for innovators themselves. Second, we have to energise our health system so that it is receptive to innovation and sees and uses new technologies as the best lever for delivering improved care with greater efficiency."

Six years after the Cancer Drugs Fund made its debut appearance in the Conservative Party manifesto, these challenges remain unresolved.

Jargon buster

AAR – Accelerated Access Review
A review by the government to examine how innovative medicines and medical technologies can get to patients quicker. Looks across the whole timeline of medicines or technology, from research and development to use.

ACD – Appraisal consultation document
Preliminary guidance during a NICE appraisal process from the appraisal committee.

CDF – Cancer Drugs Fund
A dedicated monetary fund for oncology drugs, to ensure patients get access to cancer medicines that were deemed not cost-effective by NICE (*see below*). A Conservative Party manifesto promise before the 2010 election, it was designed to resolve the access issue temporarily. Its introduction was prompted by the UK's poor outcomes and survival rates compared to other European countries.

CRC – Colorectal cancer
Any cancer that affects the large bowel (colon) or rectum. It is the fourth most common cancer in the UK, affecting over 34,000 people a year.

DH – Department of Health
The government department that provides strategic leadership for public health, the NHS and social care.

FAD – Final appraisal decision
Final guidance from the appraisal committee, which, if not appealed against, will be written up in the final NICE guidance.

HTA – Health care technology assessment
A review of the clinical and economic evidence of a treatment to show how well a medicine works in relation to how much it costs the NHS. A decision is then taken about whether it offers value for money. Technology appraisals take one of two forms:
- A single technology appraisal (STA) that covers a single technology for a single indication.
- A multiple technology appraisal (MTA), which normally covers more than one technology, or one technology for more than one indication.

ICER – Incremental cost-effectiveness ratio
Used to measure the difference between the current standard of care and a potential new treatment. Arrived at by finding the cost difference between the two and dividing it by the difference in their effect.

NHS E – NHS England
Set up in 2013 as an arm's-length body (not part of the government) to provide leadership on improving outcomes and quality of care, and to oversee clinical commissioning groups.

NICE – National Institute for Health and Care Excellence
An arm's-length body that assesses the cost-effectiveness of medicines to the NHS and provides guidance to the NHS on whether they should be offered to patients and how.

OLS – Office of Life Sciences
A government department that provides a link between the Department of Health and the Department for Business, Innovation and Skills to ensure that decisions on health take into account the wider business environment for life sciences companies providing those products and services.

Personalised/stratified/precision medicine
This is a medical model that separates patients into different groups with medical decisions, practices, interventions and/or products being tailored to the individual patient based on their predicted response to treatment. The terms "personalised medicine", "precision medicine", "stratified medicine" and "P4 medicine" are all used to describe this concept. In this model, diagnostic testing is often employed for selecting appropriate therapies based on the context of a patient's genetic content or other molecular or cellular analysis.

PPRS – Pharmaceutical Price Regulation Scheme
A deal between the pharmaceutical industry and the Department of Health to ensure that safe and effective medicines are available to the NHS on reasonable terms – and that a strong, profitable pharmaceutical industry is maintained.

QALY – Quality Adjusted Life Year
The trade-off between full health and time. A treatment that provides one year in full health has a score of 1 QALY. A treatment that provides one year with half normal health or half a year in full health would have a score of 0.5 QALY. These scores help measure cost-effectiveness.

Time to rethink blunt access rules

Despite best intentions, the Cancer Drugs Fund in its current form is causing the same distress and uncertainty that it was set up to avoid, believes **Norman Lamb**

When it was introduced in 2010, the Cancer Drugs Fund was welcomed as a beacon of hope for many people struggling to get access to cancer medicines normally considered too expensive for the NHS. Six years on, the fund has benefited tens of thousands of people. However, its ballooning budget and concerns over its management led to the scheme's future being called into question. There is little doubt that it requires reform – but do the weaknesses reflect poor management alone, or problems at a more fundamental level?

The wave of breakthrough cancer medicines emerging over the past five to ten years has been a triumph of modern science. However, the UK has been notoriously slow in bringing these treatments to patients. In 2010, a report by the cancer tsar, Professor Sir Mike Richards, found that the UK ranked only 12th out of 14 developed countries for uptake of new cancer medicines.

I want the UK to be an international leader in access to cancer medicines. This can only be achieved through a scheme that is equitable, evidence-based and sustainable. Although well-intentioned, the Cancer Drugs Fund in its present form falls some way short of these principles – and the result has been a sudden axing of drugs from the fund's list in recent months, causing the same distress and uncertainty that the initiative was set up to avoid.

Much of the criticism has focused on NHS England's inability to get a grip on its spiralling costs. As a recent report by the Commons public accounts committee points out, the fund's budget has more than doubled from £175m in 2012-13 to £416m in 2014-15, with an overspend of £167m recorded over the past two years.

This cannot escape scrutiny at a time when NHS finances are under enormous pressure. Nor can it be justified by appealing to improved survival and quality of life, following the dismal failure of the Department of Health and NHS England to gather adequate data on the scheme's impact on patient outcomes. When budgets are under so much strain, the reality is that treatments funded by the NHS need to be shown to be both clinically beneficial and reasonable value to the taxpayer.

NHS England has proposed a reformed Cancer Drugs Fund, more closely aligned with the role of NICE, the body responsible for deciding which medicines are normally available in the National Health Service. Under the revised scheme, promising new cancer drugs could be offered to patients while being evaluated for routine use in the NHS, with patient outcomes monitored for up to two years as part of NICE's assessment.

I think this could provide part of the solution we need. Restoring the principle of decision-making based on evidence would place the fund on a more stable footing, and reduce the likelihood of costs proliferating in the future. In the long term, however, this should form part of a broader overhaul of the way in which innovative medicines are assessed for use in the NHS.

There is a growing sense that a blunt health economic assessment based on data from clinical trials is an archaic method of deciding whether patients should be granted or denied access to potentially life-saving or life-extending treatments. Allowing novel medicines to be tested more widely in the NHS would be a bold and highly welcome development, especially if this is coupled with a stronger voice for clinicians and patients in NICE's final decision-making process.

An assessment based more closely on patient outcomes would reduce uncertainty about the effectiveness of new drugs for NHS commissioners asked to pay for them from increasingly stretched budgets, while also properly rewarding pharmaceutical companies for valuable innovations. Most importantly, patients will benefit from tried-and-tested treatment options and improved health.

Ultimately, however, our ability to pay for innovative medicines will be increasingly restricted unless we are prepared to confront the severe funding crisis facing the NHS. That is why I have proposed the creation of an independent, cross-party commission to design a new, long-term settlement for the health and care system. Only by working together can we turn the UK into an indisputable world leader in access to medicines and cancer survival – today and for generations to come. ●

Norman Lamb is the MP for North Norfolk, and the Liberal Democrat spokesman on health. Between 2012 and 2015 he served as a health minister in the coalition government

“A quiet revolution in precision medicines”

George Freeman is the man tasked with helping the nation speed up the discovery and adoption of new treatments. Here, he explains how he thinks it can be done

Earlier this year Merck Serono’s general manager for UK and Ireland, Elisabeth Prchla, sat down for a wide-ranging conversation with the Life Sciences Minister, George Freeman. The context of the discussion were the imminent changes to the Cancer Drugs Fund and the release of the final Accelerated Access Review report commissioned last year by Freeman.

The theme running through the conversation was the challenge of providing timely access to cancer medicines. This is an edited extract of Freeman’s views on these issues.

What do you believe are the current key trends in the life sciences and pharmaceuticals?

The pace of technological change in the life sciences sector, particularly the pace of genetic insights and the phenomenal computing power of informatics, is profoundly changing the way drugs are being discovered and developed. It is in that context that the Prime Minister set out in 2011 in his groundbreaking speech on the strategy for the UK life sciences our ambition to adapt the UK landscape to support this new model of 21st-century medicines research and development.

In the old model, which we have known for the past 50 years, medicines typically take ten to 15 years to be brought to market costing about $2bn, and go through a very long and complex pipeline of early-stage discovery, preclinical phase one, two and three trials, more up-marketing authorisation, NICE assessment and National Health Service approval before a new medicine comes anywhere near a patient.

The transformations in genomics and informatics mean that we can completely change the process and start with patient tissues, biopsies, data, genetics, and design and develop drugs around the patient – starting with the clinical assets and insights, rather than starting with theoretical drug targets, tested through massive synthetic libraries and then a long chain process relying on animals and computers.

What challenges do you believe that this presents?

Whether you call it translational medicine, or precision or stratified medicine, there is a quiet revolution ongoing in drug research and development.

It is both hugely challenging for the existing model, and sector, but also creates huge opportunities. It is challenging because this new generation of precision medicines do not fit the one-size-fits-all blockbuster drug model which Big Pharma has developed and demands much more flexible models of assessment and pricing.

It is also challenging because, while the cost of drug discovery has not come down, the market sizes for targeted medicines get smaller and therefore the prices get

TIM SCRIVENER/REX/SHUTTERSTOCK

higher. It is challenging for the NHS because the more we discover about genetics, and the causes of diseases, the more specialist medicines come down the pipeline, generating huge costs.

And what about the opportunities?

The opportunity is clear that here in the UK, with our world-class medical science, with a comprehensive NHS, and our leadership in genomics and informatics, we can be the global testbed for precision medicines. We are, however, in a race, a global race, and in January 2015, when I was invited by the White House health team to update them on the UK strategy, it was striking that President Obama announced four days later, in his penultimate State of the Union Address, a massive American commitment to the field of precision medicines.

This transformation also shifts, or changes, the key players in the landscape for research and development, so that alongside traditional Big Pharma, we are seeing the emergence of specialist pharma and a new generation of biopharma companies. They are developing genomic biomarkers which allow a drug to be matched much more quickly to a particular patient subgroup with almost guaranteed efficacy.

This means that patient voice and consent for the use of data, tissues and genetics comes centre stage, which will mean a dramatically enhanced role of charities and patient groups in this new landscape. This is good news because these are the very same patient groups and charities currently campaigning for quicker access to innovative medicines, which is why I launched the independent Accelerated Access Review.

Accelerated Access Review (AAR)

What do you consider to be a success so far with the AAR? Do you believe the AAR will solve the inherent issues around accelerating access and uptake that will enable continued industry investment in the UK?

The AAR is a major review of the UK landscape for developing, testing, adopting and reimbursing innovative medicines – as well as medical technologies, diagnostics and digital products. I launched it in order to ask a very simple but profound question: how do we need to adapt the UK landscape to this new world of 21st-century transformative medicine?

I want us to accelerate the speed with which we both discover and adopt new medicines and to take advantage of this new model. The Food and Drug Administration (FDA) critical path initiative, of about five to ten years ago, was a game-changer in the American research and development landscapes (40 per cent of new medicines are now approved through breakthrough designations in the United States).

The AAR is independent and I've ▶

asked it to address three key questions:

- One, the funnel-in: how can we make it quicker and easier for innovators to get access to UK clinical assets for proof of concept?
- Two, how can we update the mechanisms for the National Institute for Health and Care Excellence (NICE), Medicines and Healthcare Products Regulatory Agency (MHRA) and NHS England to appraise and, where appropriate, make available this whole new range of innovative drugs?
- Three, the funnel-out: how can we incentivise and remove barriers to quicker adoption of innovative drugs and diagnostics devices, and digital technologies, throughout the system?

What do you see as the next steps for the review?

It's been running for 14 months and following its interim report is now preparing a final report. I believe the team has pulled together a very powerful set of ideas for mechanisms and new pathways and I am absolutely determined that we move quickly to implement the most recommendations so that we can begin to make some quick advances.

I do not want to prejudice the independence of that piece of work, led by Sir Hugh Taylor, but I think everybody can see that there is a real need to help accelerate those technologies that might help NHS England transform and modernise our healthcare systems, for example, to avoid unnecessary hospital admissions, so there are some obvious early wins in accelerating medical and diagnostic technologies.

Similarly, I think everyone can see there are real opportunities for NICE and NHS England to be given new flexibilities for innovative medicine assessment, for example, to take a new class of drugs where there is good genomic or clinical informatic data to fast-track them into a patient subset which we can guarantee or be very confident will deliver benefits. You can then develop new models of payment based on measuring the real outcome in those patients, in real time, with real disease, in real places. So, this review will be genuinely transformational.

NICE

How can NICE's methodology better take into account new medicines likely to come to market in the coming years? In particular those medicines that are increasingly targeted at smaller populations, such as precision or personalised medicines?

NICE is one of the jewels in the crown of the UK drug discovery landscape and has led the world in the health economics of assessing the clinical and cost benefits of new drugs and other innovations. Central to its role is its independence, and I am absolutely determined not to undermine that in any way, but NICE was essentially created on the premise of a one-size-fits-all model of cost benefit.

It follows from the pace at which the new medicines landscape is changing that we need to give NICE the freedom to assess new drugs, particularly new cancer drugs, in a way that is much more precise. We also need to allow them and NHS England to build an assessment regime that is driven by real data, on real drugs, in real time, in real patients with real disease.

> "I'm confident the AAR review can be truly transformational"

So, I hugely welcome the level of ambition and engagement that Sir Andrew Dillon [the chief executive] and his team at NICE have shown in engaging with the AAR and am hopeful that we will see some recommendations to give NICE some new flexibilities.

Will the government give a mandate to NICE to change its methodology to take into account these new medicines?

It wouldn't be appropriate for me to prescribe operational conditions to NICE, but we are clear that we want to accelerate patient access to the most beneficial, cost-effective and transformational medicines.

Do you think that NICE is appropriately resourced to manage the scale of medicines for approval and review?

As the minister for NICE, we have just completed its annual review and there was no complaint about under-resourcing. It is true, though, that the scale of progress in the drug-discovery field and the increasing variety of new drugs does test their existing systems, which is why I have invited the AAR and NICE to develop some new flexibilities.

CDF

Do you think that the proposal in the NHS England consultation on the Cancer Drugs Fund points to a sustainable solution for funding of cancer medicines?

An important question in this is: should we ring-fence particular commitments to innovative medicines? The Prime Minister and I are very proud of the £1bn commitment to the CDF, not least because cancer has led the way in this quiet revolution of precision medicine.

We created the CDF to help with the challenges this is posing to the existing system. We also want to make sure that we use the CDF to accelerate UK and NHS leadership in 21st-century cancer therapy.

The NHS England review of the CDF has a vision of bringing it back down the stream from an end-of-process fund that largely funds drugs that have been rejected by NICE at cost price – which has unsurprisingly attracted massive oversubscription – to a managed access fund.

This could fit into an accelerated access landscape more logically to accelerate the adoption of potentially transformational cancer therapies. This model is potentially very exciting.

How does the government plan to work with NHS England and NICE to manage and balance the priorities and recommendations which are published following the CDF consultation and the AAR final report?

Given the clear alignment between the recent CDF consultation and the AAR, I have asked that NHS England and NICE work very closely with the AAR team so that we develop a joined-up logical landscape that is very clear.

It is also important, in this global sector, that innovators across the UK can see that there is a clear landscape for innovation, and that internationally the US reforms that the FDA and the White House are pushing are complimentary to our reforms here in the UK. It is my vision that the UK, after the AAR, should become the obvious gateway into the European market and indeed the first drugs in our early access to medicines scheme have indeed received faster European approval as a result. ●

The conversation between Elisabeth Prchla and George Freeman MP took place in Westminster on 10 February 2016

Time to end painfully slow NHS adoption

There is an alarming disparity between access to new medicines in the UK and the situation in other developed countries, writes **Lord Hunt**

One of the most frustrating characteristics of the United Kingdom is our inability to capitalise on the huge strength of our science, innovation and quality of research. How often have great ideas invented in the UK been developed in foreign countries that then make a much better fist of exploiting the potential?

Nowhere is this more apparent than in the NHS, with patients the real victims. We have an outstanding pharmaceutical industry in the UK. Billions of pounds are invested in research and development and many top medicines are developed. It's the same for our diagnostic and health technology industry.

And yet, for all the undoubted strengths of the NHS, it has long been painfully slow to adopt new medicines and treatments. That was why the last Labour government developed NICE to speed up the introduction of clinically effective and cost-effective treatments and medicines. Backed by extra resources for the health service, NICE has become widely respected internationally.

But however good its methodology, it has never seemed to be able to respond to the challenges of cancer drugs, because of the timescale over which these are used by patients.

That is why the Cancer Drugs Fund (CDF) was established in 2011 to extend access to cancer drugs that were being turned down by NICE. Already, the CDF has helped more than 72,000 cancer patients in England gain access to drugs not routinely funded.

Always intended as a short-term fix, the CDF closes to new drugs on 1 April. Because it became heavily oversubscribed, two processes of delisting of drugs previously approved by the fund have already taken place. Thirty-two drugs covering 52 indications were removed, causing consternation among patient groups.

The government is consulting on proposals for a new cancer drugs fund, to launch in July, aimed at helping patients receive new treatments with genuine promise, while real-world evidence is collected for up to two years on how well they work in practice.

The proposal issued for public consultation outlines a system, fully integrated into the NICE appraisal process, where the CDF becomes a transitional fund – with clear criteria for entry and exit. The hope is that it will offer a new fast-track route to NHS funds, though much will depend on NICE being able to keep pace with the development of new medicines.

These proposals are matched by a more general review about access to medicines and treatments. Chaired by Sir Hugh Taylor, the former permanent secretary at the Department of Health, it emphasises the strength of our science base and the quality of research. But Taylor warns that this could be undermined if research budgets are threatened and if the NHS cannot afford to support research, or if it fails to invest in change and innovation.

Its interim conclusions seek to give patients a stronger voice and accelerate and manage entry into the NHS for the most significant emerging products. In addition to expediting access to a select number of promising products, Sir Hugh wants the NHS to be an active partner in promoting innovation and giving practitioners an incentive to use new products.

But in the case of cancer drugs, two high hurdles have to be surmounted. The first is the NHS's perverse approach to new medicines, which regards them as a burden. The second is to recognise that the financial plight facing the NHS is such that unless extra resources – possibly ring-fenced – can be found for new drugs, the proposals aren't going to get anywhere.

Talking to senior managers in the NHS, you get the feeling that although they believe additional clinical staff and equipment are a good thing, any increase in demand on the drugs budget will be a disaster. Despite huge patient advances in the past fifty years, there is an alarming disparity in access to new medicines in the UK compared to other developed countries. This cannot be divorced from finance. Recent OECD reports show that 24 countries spend more per share of GDP than the UK, and the top 18 spend more per capita. The next five years will bring a modest increase in NHS funds but a huge increase in demand, due to population increases and a rise in the number of vulnerable older patients.

Something has to give and all too often it will be the drugs budget. That is what makes the work on a new CDF and the Accelerated Access Review so important. ●

Lord Hunt of Kings Heath is a Labour member of the House of Lords and shadow spokesperson on health

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