



Medicines and Healthcare

Strategy 2009-2012

EXECUTIVE SUMMARY

Executive summary

There is no doubt that the UK is a powerhouse in the medicines and health technologies industry. The UK excels in developing medicines and healthcare technologies and has played a major role in establishing the industry on a global stage. The UK medicines industry discovered and/or developed more than 20% of the world's 100 top selling medicines, more than any country apart from the US, and more than the rest of Europe combined. The pharmaceuticals and biotechnology industries contributed 4% of total UK value added in 2008 at £30.1bn, while the healthcare equipment and services sector contributed 0.5% at £3.7bn.

However, the industry is facing key changes and challenges which could dramatically affect healthcare provision (see table below). Many companies acknowledge that there will be serious consequences for the industry unless they embrace new business and innovation models that overcome the development hurdles to the types of products and services that are needed to fulfil the needs of healthcare providers and patients.

This Medicines and Healthcare Strategy provides a business-led vision for the UK medicines and healthcare sector to drive innovation forward in the development of the next generation of disease prevention, diagnosis and treatment. Through this strategy we will work to ensure that the UK remains a dominant player in the global arena.

Addressing healthcare challenges

Current healthcare models are facing greater challenges, both physically and financially, in providing for a growing, ageing population with an increasing burden of disease. For companies to devise solutions to these challenges, they must recognise the drivers behind the healthcare challenges and look at models of:

- disease prevention and proactive management of chronic disease
- earlier and better detection and diagnosis of disease leading to marked improvements in patient outcomes

- highly effective treatments that are tailored to patients' needs and either modify the underlying disease or offer potential cures.

The UK Government has recognised the importance of the industry in meeting these challenges. For example, it has created the Office for Life Sciences, to address key issues affecting the pharmaceutical, medical biotech and devices sectors, and to make a real difference to the operating environment for life sciences companies. It is also boosting the level of investment underpinning health research from £1.4bn a year in 2007-08 to around £1.7bn per annum by 2010-11.

We have built on government priorities, support and investment in developing our strategy for medicines and healthcare to promote business-led innovation aimed at creating wealth and enhancing quality of life.

Global healthcare trends	
Global economics	Increasing affluence in emerging economies sees increasing demand for integrated healthcare provision. The E7 countries (India, China, Brazil, Russia, Turkey, Indonesia and Mexico) are projected to triple their GDPs from \$5.1trn in 2004 to \$15.7trn by 2020.
Demographics	The proportion of people aged over 65 will increase from 7.3% to 9.4% of the overall population by 2020. The demands of age-specific ailments will place increasingly difficult demands on healthcare services.
Epidemiological trends	Genetics, diet and environmental factors all impinge on the prevalence and severity of disease affecting different populations. Increasing affluence in developing countries will see increases in chronic diseases associated with environment, age and lifestyle. For example, the World Health Organisation estimates that the number of obese people worldwide will increase from 400 million in 2005 to over 700 million by 2015.
Pharmacogenomics	Genetic variations also affect the way individuals respond to drug treatments. The responses can have varying consequences, ranging from poor responses to therapy to quite severe side effects. There is an increased need to understand the basis of these variations in order to improve the development of new treatments as well as patient care.
Environmental change	The impact of climate change on human health is difficult to predict; however, an increase in prevalence or geographical reach of vector-borne diseases (eg malaria and sleeping sickness) is highly likely. Large health effects are also likely from food supply changes, environmental degradation and population movements.
Clinical advances versus financial constraints	Governments, health providers and insurers are under increasing pressure to balance the delivery of healthcare against growing demand and increasing costs for provision. The OECD countries spent nearly \$3.5trn in 2005 which could rise to \$10trn per year by 2020.



Our strategy

Our UK strategy for medicines and healthcare is challenge-led with a focus on the healthcare market. We have selected some focus areas for investments which we believe are key to addressing market needs and opportunities. Our focus areas are:

- commercial translational research
- uptake of innovation
- facilitating collaboration.

We selected these areas on the basis of the Technology Strategy Board criteria for investment (see our corporate strategy *Connect and Catalyse* for further information).

- Does the UK have the capability?
- Is there a large market opportunity?
- Is the idea ready?
- Can the Technology Strategy Board make a difference?

UK businesses in the medicines and healthcare technologies sectors face both business and technological challenges in translating promising ideas and concepts into products and services that meet healthcare providers' and patients' needs. Furthermore, there is the requirement to closely align those articulated needs and the research and development programmes, not only to ensure the right products and services are designed and built but also to facilitate their adoption and uptake.

The pace of change in technology development means that it will be 'innovation supply chains' that compete in the future and not individual companies. Developing and nurturing this network of innovative players is key to continued success for this sector through encouraging collaborative working and knowledge exchange to overcome the technological and business challenges and hence create a robust commercial R&D base, stimulate economic growth and return wider benefits to the UK.

Our focus areas

Commercial translational research

Translational research refers to the process of taking the findings from basic or clinical research and using them to produce innovation in healthcare settings, or the process of converting basic and clinical research into ideas and products and introducing those products into clinical practice.

Medical translational research is multidisciplinary in nature, involving basic, applied and clinical scientists focused with one end in mind, that of delivering real and cost-effective benefits to patients.

However, reports have identified gaps in, or a lack of co-ordination of, funding and other support mechanisms for taking ideas from the lab to a stage at which a commercial partner might take them on, or to a stage where a small or medium-sized enterprise developing such ideas might be able to access commercial financing or partnership opportunities to bring products to market.

The Technology Strategy Board will:

- work with industry to identify and articulate key challenges faced by medicines and healthcare technologies companies in translating ideas into products and services that have the potential to lead to step changes in disease prevention and management, diagnosis and treatment
- focus our investments and support to address the business challenges, through engaging the technical and knowledge base in academia, in clinical research and industry to enable the development of the best solutions.

Uptake of innovation

A significant challenge facing innovators is the uptake of the products by healthcare providers. The provision of healthcare can be an emotive issue and payers have to try to make objective decisions on whether a new diagnostic, device or treatment should be used, occasionally based on limited usage information available at the time of product launch. It is incumbent on the innovators to provide the relevant information and demonstrate the value of their products in the context of how they will help address the healthcare providers' challenges.

Furthermore, poor uptake of innovation is not allowing companies to carry out critical post-marketing surveillance for novel drugs and devices, and hence delays their ability to carry out incremental improvements to their products.

For businesses – particularly small and medium-sized enterprises – failing to appreciate the needs and drivers of end-users and patients can lead to some of the problems relating to the implementation of innovation.

The Technology Strategy Board will:

- work with industry to identify the need for knowledge exchange, between key players at the early stages of product development, with the aim of developing new tools to demonstrate the value of innovative treatments and interventions and new business models for the industry
- work with the Department of Health, the devolved health departments and the NHS National innovation Centre to understand and clearly articulate the problems and needs of end-users and patients so that businesses can design and build the best solutions.

Facilitating collaboration

The medicines and healthcare environment in the UK presents significant opportunities for collaborative working between the large pharmaceutical companies, small and medium-sized enterprises and the academic and clinical base, to address challenges in healthcare together. However, cultural, institutional and financial barriers have been identified around collaborative working, which ultimately affect the translational process. Addressing these barriers is a key challenge to ensuring continued success for the UK-based sector.

The Technology Strategy Board will:

- work with the newly created Health Tech and Medicines Knowledge Transfer Network and existing collaborative programmes and networks to engage industry in building 'innovation supply chains' to create an integrated approach to collaborative working.

How are we going to do it?

Working in partnership

All of our work will require a partnership approach involving the different technology and application areas within the Technology Strategy Board along with collaboration with key government departments, the Office for Life Sciences and Office for Strategic Coordination of Health Research, research councils, and the regional development agencies and devolved administrations. Involvement in international activities (in collaboration with UK Trade and Investment) will be essential to ensure that we take a global perspective when positioning interventions in innovation in the UK as well as to ensure international markets are accessible to companies investing in innovation in the UK.

The Technology Strategy Board will:

- develop tools to stimulate and address bottlenecks in innovation to support UK businesses in the medicines and health technologies sector. This will start with a programme of activity in the field of regenerative medicine
- assess the need for a Technology Strategy Board innovation platform for stratified medicine. Stratified medicine is an approach to identify and classify patients into subgroups that differ in their susceptibility to a particular disease or side effects to treatment
- work with research council initiatives such as the Medical Research Council's Development Pathway Funding Scheme, the Biotechnology and Biological Sciences Research Council's Industry Clubs, and the Engineering and Physical Sciences Research Council's Nanotechnology Grand Challenge in Healthcare, and put tools in place to enable businesses to pull the research that addresses their challenges through to market
- invest in knowledge transfer partnerships and ensure that medicines and health technology companies can fully utilise and appreciate the role of knowledge sharing between disciplines
- work with stakeholders to develop metrology and standards that will stimulate innovation and provide competitive advantage to UK business
- seek to identify, with stakeholders, European and international strategic alignment and financial gearing opportunities to support improvements in UK competitiveness and inward investment.

We aim to maximise the impact of joint working – using the Technology Strategy Board's position to bridge the gap between the public and private sectors. We will also increase the focus on developments within the EU and the Framework programmes since the opportunities for increased financial gearing for projects, along with building strategic alliances, is gaining greater importance for UK businesses.

The Technology Strategy Board will:

- work with our public sector stakeholders, especially the regional development agencies, the research councils, relevant government departments and the Office for Life Sciences, to deliver aligned programmes and create a 'joined-up' approach for companies looking to deliver innovation in this industry.

This is a summary of the Technology Strategy Board's *Medicines and Healthcare Strategy*. For the full document, see www.innovateuk.org.

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