HM Government

Life Sciences Blueprint

A statement from the Office for Life Sciences
July 2009

Building Britain's Future

Front cover photograph supplied courtesy of A Cavanagh, Wellcome Images.
Scanning electron micrograph of Purkinje neurons. 2008.

Office for
Life Sciences

Many of the policies and statements set out in this Blueprint extend over the whole United Kingdom, but for some, responsibility is devolved in Northern Ireland, Scotland and Wales. Thus, not all commitments will automatically apply across the UK. We will work closely with the Devolved Administrations, respecting their responsibilities and administrative structures, towards the goals of promoting and supporting a thriving life sciences industry in the UK.

Following the launch of this Blueprint, there will be a programme of work leading to the publication of a delivery plan in the autumn, accompanied by a full impact assessment detailing the costs and benefits for policy proposals.

Foreword

As set out in *"Building Britain's Future"*, we will build tomorrow's economy by investing today in those high-tech industries of the future where the UK has competitive advantage and the potential to be a global leader. The strategy set out in *New Industry, New Jobs* will be key part of this, by supporting business, innovation and entrepreneurship. The life sciences industry, comprising pharmaceuticals, medical biotechnology and medical technology, is one industry where we are world-class, and have the potential to go further. A strong life sciences industry can drive growth and high-value job creation as well as playing a vital role in meeting future healthcare challenges.

The UK has solid foundations to build on, with its National Health Service, the substantial investment in the research base over the last 10 years, and a highly-skilled workforce. But we need to do more to ensure that the UK continues to offer an attractive environment for life sciences companies to do business. The Government has a crucial role to play, helping to remove the barriers that prevent the UK from making the most of its strengths.

In establishing the Office for Life Sciences, the Government clearly signalled the importance of the industry to building the Britain of the future. The Office, under Lord Drayson's leadership, has been an early exemplar of the Government's active approach to industrial policy. This Blueprint sets out those actions, which together form a package of measures that has the potential to transform the UK for the life sciences industry. In particular:

- creating of an "Innovation Pass" that will give patients faster access to cutting-edge medicines;
- measures to ensure the NHS leads the way in the uptake of ground-breaking and cost-effective medicines and technologies;
- accrediting biosciences degrees to ensure graduates leave with the skills required by industry; and
- supporting the formation of an internationally-recognised UK Life Sciences Super Cluster.

We are grateful to all those, in Government and in industry, who have devoted time and effort to making the Office a success. In particular, we would like to thank the industry chairs of the four working groups, David Brickwood, Subhanu Saxena, John Aston and Chris Brinsmead, and the industry trade associations, ABPI, BIA, ABHI and BIVDA, who have been central to rapidly bringing the industry together to work as one with Government.

Lord Mandelson
First Secretary of State,
Secretary of State for Business, Innovation & Skills

Andy Burnham
Secretary of State for Health

Preface

In January 2009, the Prime Minister held a summit meeting with global representatives of the life sciences industry. At the summit, industry emphasised the need to take action to support the UK life sciences industry as a major growth industry of the future, to help ensure the UK's place as a global leader. In response, the Government created the Office for Life Sciences (OLS) led by Lord Drayson, Minister for Science and Innovation.

The OLS has created a new way of working, across Government and industry, requiring a fresh perspective from industry as much as from Government. For example, Government and industry need to work together to build on the NHS Next Stage Review and enshrine the NHS as an engine of innovation. This should be complemented by action to ensure that there is investment in innovative companies to carry through the innovation driven by our Research Councils and universities.

For the life sciences industry, the new way of working has offered great opportunities. For the first time, the industry is speaking with a single voice, bringing together the pharmaceutical, medical biotechnology, and medical technology sectors in a single forum.

The OLS process has required the life sciences industry not just to articulate the challenges facing the industry in the UK, but to work in partnership with Government and other key stakeholders to plan novel solutions.

This Life Sciences Blueprint is the culmination of six months' focussed work between industry and Government. Demonstrating real change is dependent on both industry and Government continuing to work together to deliver tangible results through the actions set out in this Blueprint.

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Summary of key actions

The Office for Life Sciences has developed a package of actions to transform the UK environment for life sciences companies. These actions have been agreed across Government, and with industry, the Higher Education sector and the NHS.

The key actions contained in this Blueprint are listed below. A full list is set out in the Life Sciences Action Plan at the end of this document.

The NHS as an innovation champion

1. The Government, with the National Institute for Clinical Excellence (NICE), will introduce an "Innovation Pass", making selected innovative medicines available on the NHS for a time-limited period. The Pass will be piloted in 2010/2011, with a budget of £25 million. At the end of the pilot year, the Government will evaluate the pilot before setting out the budget for the remaining two years of the initiative.

2. The Government will create a Strategic Health Authority (SHA) Delivery Group to improve both uptake of innovative medicines and technologies, and engagement between industry and the NHS.

3. The NHS Chief Executive will review system levers and incentives, including Payment By Results, to accelerate the uptake of medical technologies.

4. The Government will reinforce the need for greater emphasis on research and clinical trials in the next NHS Operating Framework, building on the existing commitment to include numbers of patients in clinical research in the metrics which Trusts report in their Quality Accounts.

Building a more integrated life sciences industry

5. From 2010, the Society of Biology will begin to accredit undergraduate bioscience degrees to help ensure that graduates leave with the core mathematical and practical skills and competencies required by employers.

6. The Government, together with industry and the Higher Education sector, will create a forum to address skills gaps.

7. The Government will support the formation of a UK Life Sciences Super Cluster to co-ordinate work across industry, Higher Education and the NHS, and to boost international recognition of UK life sciences.

Access to finance and stimulating investment

8. On 29 June 2009, the Government announced the creation of a UK Innovation Investment Fund to invest in technology-based businesses with high-growth potential, including life sciences companies. The Government will invest £150 million alongside private sector investment on an equal basis, with the aim of leveraging enough private investment to build a £1 billion, 10-year Venture Capital fund.

9. Budget 2009 announced that the Government would consider evidence for further changes to the way the tax system encourages innovative activity, to ensure the ongoing competitiveness of the UK. The Government will set out its assessment and proposed approach before the 2009 Pre-Budget Report.

10. The Technology Strategy Board will launch an £18 million "RegenMed" programme of investment to support key areas of commercial R&D and the development of R&D partnerships. The Medical Research Council, the Engineering and Physical Sciences Research Council, and the Biotechnology and Biological Sciences Research Council who will provide additional funding of at least £3.5 million.

The Technology Strategy Board has also committed to increase its expertise in the life sciences.

Marketing UK life sciences

11. The Government, through UKTI, will invest £1 million from the Strategic Investment Fund to further promote the UK and NHS brands at flagship life sciences events in the UK and overseas.

12. The Office for Life Sciences and UK Trade and Investment will hold a series of roadshows throughout the English regions and Devolved Administrations, beginning in September. These roadshows will bring together businesses with other key regional stakeholders to:

(i) Discuss the Blueprint commitments and next steps to implement them; and

(ii) Help ensure the UK life sciences industry speaks with one consistent voice in its global marketing activities.

Chapter 1

Life sciences – an industry of vital importance to the UK

1.1 The UK is a world leader in life sciences (pharmaceuticals, medical biotechnology, and medical technology). Life sciences is one of the high-tech strategic industries that will play a vital role in: building a stronger Britain of the future; driving growth and prosperity as well as continuing improvements in healthcare delivery; and meeting future challenges such as an ageing population and obesity.

1.2 The UK ranks second in the world after the US and has established itself in future growth areas such as regenerative and stratified medicine. The pharmaceutical sector is the leading sector for investment in research and development (R&D), investing £4.5bn in R&D in the UK in 2007 alone, representing over a quarter of all UK business R&D[1]. The UK medical biotechnology sector leads Europe in the number of drugs in all stages of clinical development[2]. The medical technology sector is growing rapidly with the largest share in Europe at just over 2,000 companies, the majority of which are small and medium enterprises (SMEs), and the sector collectively employs almost 50,000 people across the UK[3].

1.3 Our shared vision is for a life sciences industry which is able to make the best possible contribution to the future wealth of the country and to continued improvement in health and wellbeing for the UK and globally; focuses its entrepreneurial effort on areas of greatest scientific potential as well as greatest healthcare need; combines cutting edge R&D with a core manufacturing capability; and operates increasingly through symbiotic relationships between small and large companies, and between industry and Higher Education and healthcare providers.

1.4 Meeting future challenges will drive growth in the industry and offers the opportunity to consolidate the UK's global leadership and attract increased investment from UK and overseas companies. As a location for life sciences companies, the UK has considerable strengths to build on. A key factor in past successes has been the translation of basic science into commercially successful products. The UK's world-class science base, based in globally recognised universities and research establishments, will continue to be a cornerstone of progress in UK life sciences in the future. This will be underpinned by investment in the UK's overall research base, which has increased steadily over the past 10 years and will rise to almost £6 billion a year by 2010.

1 http://www.dius.gov.uk/innovation/statistics_and_analysis/randd_scoreboard/~/media/publications/2/2008_RD_Scoreboard_analysis
2 "Beyond borders. Global biotechnology report 2009". Ernst and Young.
3 http://www.berr.gov.uk/whatwedo/sectors/biotech/healthtech/page41607.html

1.5 The NHS is a unique selling point for the UK, and has the potential to add significantly to the UK's attractiveness as a base for life sciences, providing high-quality healthcare to all, and offering a competitive advantage with its vast patient databases for clinical trials and investigations. There is also a vital role for the NHS as a value-creator and an engine of economic growth, leading the way in the uptake of innovative medicines and technologies, deepening collaboration with industry, and helping the industry to flourish and grow. In turn, a flourishing life sciences industry will help generate the step-change innovation needed to maintain quality of services and productivity into the future.

1.6 However, the UK's leadership position is threatened and the life sciences industry is facing a number of challenges which must be addressed if it is to fulfil its potential as a major driver of growth. The UK's share of global patient enrolment in clinical trials has dropped from 6% in 2000 to 2% in 2006[4]. The pharmaceutical sector is facing a patent "cliff", equivalent to $140 billion in sales, as several blockbuster drugs come off patent over the next few years, and must in any case look to new business models to replenish its pipeline. For medical biotechnology companies, the continuing challenge in accessing finance places at risk the future pipeline of these innovative companies and has the potential to limit growth across this sector. In addition, business and leadership skills are vital to the commercial success of the SMEs that make up the majority of companies. Such skills are also crucial for medical technology companies, as is a mechanism for building relationships with clinicians within the NHS to support the development of new and innovative medical technologies.

1.7 To secure its future as the location of choice for life sciences companies, the UK needs to do more. The life sciences is a global business and companies take a global view when choosing where to locate activity and jobs. The UK is facing increasing competition from European neighbours and from Asia, with countries taking specific steps to attract life sciences companies. Only by making the most of its strengths will the UK be able to achieve its vision for a diverse and integrated life sciences sector which sustains high-value added employment, and drives economic growth and improved health and wellbeing.

1.8 Both Government and industry must take action. Government action, or inaction, shapes the conditions in which UK businesses operate. This presents the Government with an opportunity to use policy levers, such as health, skills and fiscal policies, to improve the environment in which UK life sciences companies do business. The Government, through the NHS, is the largest UK customer of medicines and technologies and therefore has a unique opportunity to be at the forefront of innovative procurement, bringing patient and cost benefits. Industry also has a vital role to play in championing the UK's strengths, clearly articulating where improvement is needed, and working with Government to develop solutions.

4 Centre for Medicines Research International

1.9 Recognising the importance of the industry to the future of the UK, and the role that Government can play in creating an environment in which the industry can flourish, the Prime Minister announced in January the creation of the Office for Life Sciences (OLS), under the leadership of Lord Drayson, Minister for Science and Innovation. The OLS was tasked, over six months, with developing a package of measures which would turn around negative trends, improve the operating environment for UK life sciences companies, and build a sustainable and integrated industry in the future.

1.10 The OLS is an early exemplar of the Government's active approach to industrial policy and has demonstrated a new way of working, bringing together Government departments (Business Innovation and Skills; Health; and the Treasury) and industry, through four industry-chaired working groups. By holding weekly meetings, the working groups have been able to rapidly articulate and prioritise the issues, consider the evidence and develop solutions across four key areas:

- The NHS as an innovation champion
- Building a more integrated life sciences industry
- Access to finance and stimulating investment
- Marketing the UK life sciences industry overseas

1.11 This Blueprint sets out the package of actions Government is taking across these four pillars to support the UK life sciences industry. The next steps for the Office for Life Sciences are set out at the end of this Blueprint.

Chapter 2

The NHS as an innovation champion

2.1 **The NHS is the largest UK customer of medicines and technologies produced by life sciences companies. If this industry is to fulfil its potential as a major growth industry of the future, driving economic growth and prosperity, it is vital that the NHS values and uses cost-effective innovations, and provides an excellent environment for clinical trials and investigations.**

2.2 A number of initiatives have already improved the NHS environment. *High Quality Care for All*[5] placed an emphasis on innovation, further measures to support uptake of medicines and the creation of a new evaluation pathway for medical technologies. In the 10 years since its inception, the National Institute for Health and Clinical Excellence (NICE) has established itself as a world-leader in health technology appraisal, and its work is influential in healthcare systems around the world. However, industry, NICE and the Government agree that further steps need to be taken to ensure that ongoing research and innovation are promoted.

2.3 Flexible pricing and a more systematic approach to patient access schemes are part of the new Pharmaceutical Price Regulation Scheme (PPRS) and offer new opportunities to promote cost-effective access to new drugs. The PPRS also includes, for the first time, an innovation package to increase the uptake of cost-effective medicines. The partnerships between the Health Departments and the National Institute for Health Research (NIHR) and stakeholders via the UK Clinical Research Collaboration (UKCRC) and the Office for Strategic Co-ordination of Health Research (OSCHR) have made important advances in developing infrastructure and processes. These partnerships support strategies and policies on research and development (R&D) in the NHS as outlined in *Best Research for Best Health*[6].

2.4 This is by no means an exhaustive list of the work programme in place that continues to improve the NHS environment. However, it has become clear that further progress needs to be made to support the life sciences industry to ensure it can play a vital role in delivering improved healthcare in the future.

5 http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_085825

6 http://www.dh.gov.uk/en/Researchanddevelopment/Researchanddevelopmentstrategy/DH_4127109

2.5 **Issue** – Whilst most significant new medicines should continue to go through NICE's existing processes, there will be drugs for small patient populations which have the potential to deliver improved patient outcomes but where data to demonstrate cost-effectiveness is so far limited, and market access may therefore be inhibited, mainly because of the small numbers of patients, and other clinical factors.

OLS solution – The Government, with NICE, will introduce an "Innovation Pass". This will be a three-year initiative for selected medicines, which will be funded for time-limited use across the NHS, from a new ring-fenced budget, without going through a NICE appraisal. NICE will play a key role in developing and applying eligibility criteria for the Pass. This will give earlier access to innovative drugs for patients with the greatest need. The Pass will be piloted with a budget of £25 million in 2010/2011. The pilot will be developed with input from industry, NICE and the NHS and will be the subject of a consultation by November 2009. Funding for future years will also be discussed through the consultation and will then be determined in the context of the next spending review.

2.6 **Issue** – There is scope for a more constructive and appropriate dialogue between industry, NICE and the assessment teams whose work supports NICE appraisals.

OLS solution – Companies with medicines and technologies that are being appraised by NICE will be able to attend NICE appraisal committee meetings to respond to any questions from the committee, and will have an opportunity to comment on matters of factual accuracy. At the end of a NICE appraisal, manufacturers will be provided with the opportunity to have a debriefing meeting with NICE, and Evidence Review Groups will be asked to attend scoping meetings for NICE Single Technology Appraisals. The NICE Board has already agreed these actions.

2.7 **Issue** – There is a question over whether NICE's methodologies take into account a wide enough range of factors in determining cost-effectiveness, and whether NICE explains clearly enough to the company and other stakeholders the impact that particular factors have had on its decisions.

OLS solution – Sir Ian Kennedy is conducting a study to identify the aspects of value and innovation that NICE should take into account in its work. His report will be published on 22 July 2009. NICE will conduct a one-month public consultation on its response to the Kennedy report in September 2009, and this issue will continue to be an important part of the OLS work programme into the autumn. From November 2009, NICE will also implement improvements in the way in which it explains the impact of specific factors in its decision-making.

2.8 **Issue** – The adoption and uptake of new medicines and technologies in the NHS is variable and in some cases, far behind that of other European countries.

OLS solution – A package of measures to address the uptake issue:

(a) By November 2009, the Government will establish a Strategic Health Authority (SHA) Delivery Group which will be chaired by an SHA Chief Executive. The Delivery Group will work to:

(i) Increase the uptake of cost effective drugs;

(ii) Improve the strategic relationship between the NHS and industry so that both can work together better in a more business-to-business manner;

(iii) Improve the competitiveness of the UK as a site for clinical research; and

(iv) Put in place equivalent NHS-led arrangements to support the early and systematic uptake of innovations in technologies which provide value to the NHS.

(b) The Government will continue work on existing and proposed metrics to provide an authoritative comparison of the uptake of cost-effective medicines, both within the NHS and on an international basis. It will also develop, by autumn 2010, a pilot set of metrics against which NHS organisations can assess themselves in relation to the uptake of cost-effective innovative technologies.

(c) The Government will ensure that at least two of the new Commercial Support Units (CSUs) to be set up, under the new NHS Commercial Operating Model, will develop and test regional approaches to support innovations from the medical technology sector, through engagement with NHS at an early stage of product development.

(d) The Government will work with the NHS to build innovation into the education commissioning system and, by autumn 2009, will provide guidance on what SHA commissioners can do to achieve this.

2.9 **Issue** – There is an opportunity and a need for radical action to bring priority and pace to the NHS initiatives to improve quality, innovation, productivity, and prevention – to which the life sciences industry makes a very significant contribution.

OLS solution – The NHS Chief Executive is putting in place a package of measures:

(a) The NHS Chief Executive will take personal responsibility for the NHS programme of action to drive greater quality, innovation, productivity, and prevention (QIPP);

(b) The NHS Management Board will delegate oversight of the day-to-day running of NHS operational issues to a new NHS Operations Board, leaving the Management Board to focus exclusively on the operational issues of the QIPP agenda;

(c) There will be a major engagement process throughout the healthcare system, with the Board of every NHS organisation expected to engage with staff, industry – including the life sciences industry – and other partners on how innovation can best be harnessed to improve quality and reduce costs at all levels of the system;

(d) The ideas generated by this process will inform the NHS Operating Framework for 2010-2011;

(e) Simultaneously the NHS Chief Executive will also lead a review of system levers and incentives, such as Payment By Results (PBR), and how they might be better deployed to accelerate QIPP; and

(f) The NHS Leadership Council will take steps to intensify the sharing of skills and experience with industry leaders to support more strategic collaboration to drive innovation and bring benefits to patients.

2.10 **Issue** – In recent years, the UK has lost ground internationally as a valued country site for undertaking clinical investigations of medical technology and later-phase clinical trials for drugs. In particular, trial start-up times, recruitment, reliability and cost have impacted significantly on the overall cost-effectiveness of the UK as a site for clinical research. The Government, through the Department of Health and the NIHR, and working closely with industry, is putting in place a range of measures specifically to address these issues. Nevertheless, the Government believes that more can be done.

OLS solution – A package of measures:

(a) The Government will reinforce the need for greater emphasis on research and clinical trials in the next NHS Operating Framework, building on the existing commitment to include numbers of patients in clinical research in the metrics which Trusts report in their Quality Accounts;

(b) The Government will support the NHS in creating a national framework for professional local management of health research, transitioning R&D Departments to become NIHR Research Support Services Departments adopting standard operating procedures and a shared risk-based approach in order to create a step-change in speed and reliability for commercial and non-commercial trials in the NHS;

(c) To underline the strategic importance of health research to the NHS, the Government will clarify the duty on SHAs to promote innovation to highlight their role in promoting R&D across healthcare organisations; and

(d) To ensure the UK fully exploits its position as a world leader in health informatics, the Government will build on the momentum generated by NHS Connecting for Health's Research Capability Programme and its equivalents in the Devolved Administrations by:

(i) Working with the major stakeholders to implement and resource the Strategic Framework agreed by the OSCHR E-Health Records Research Board; and

(ii) Ensuring the development of a clear implementation plan by the end of 2009, with business cases and joint piloting with industry.

Chapter 3

Building a more integrated life sciences industry

3.1 **The future of a flourishing UK life sciences industry lies in integration and collaboration, across industry, academia and the NHS. It is vital to its continued success that the supply of high-calibre skilled employees is maintained.**

3.2 A world-class research base is the foundation of any high-tech industry. The UK's Higher Education (HE) system is recognised worldwide for its excellence in teaching and research, and many life sciences companies are built on the exploitation of this cutting-edge research.

3.3 The number of students studying chemistry, biology and maths at 'A' level or equivalent has risen (by 11.6%, 8.6% and 20.1% respectively) over the last five years. The UK's HE system is a national asset. Applications to study Science Technology Engineering and Maths (STEM) subjects at HE level are increasing. As centres of research excellence, HE Institutions (HEIs), in partnership with industry, are key drivers of economic growth and lay the foundations for innovation. This excellence has been, and continues to be, a strong pull to attract and retain life science business interests in the UK. However, in some areas, we need to do more to ensure that UK graduates leave with the relevant core skills and disciplines to equip them to enter the life sciences workforce.

3.4 The *New Industry, New Jobs* strategy paper published in April 2009 outlined the Government's intent to take action, where appropriate, to address the skills and knowledge gaps that constrain UK-based businesses' ability to compete globally. It acknowledged the key role for life sciences in the future growth of the UK economy. Later this year, Government will publish a Higher Education Framework, that will set out how the activist approach of *New Industry, New Jobs* will be applied in the HE sector. It will be a comprehensive overview of the future role of HE, ensuring that Government supports the HE sector and employers, including those in life sciences, in working together to address the skills needs of the industry.

3.5 **Issue** – The Association of the British Pharmaceutical Industry (ABPI) reported, in its 2008 report *Skills Needs for Biomedical Research*[7], that employers are concerned that the level of flexibility and variability in the content of undergraduate bioscience courses is affecting the number of graduates gaining sufficient practical and high-level maths skills that can be applied within a scientific context. Therefore industry requires more UK life sciences graduates with these skills. This view has also been articulated by the expert groups

7 http://abpi.org.uk/publications/pdfs/2008-10STEMSkillsReviewReportFINALamended2.pdf

which have come together within the newly-formed Society of Biology, as well as the HE Academy for Bioscience, Heads of University Biological Sciences, and the Council for Industry and Higher Education.

OLS solution – From 2010, the Society of Biology will begin to accredit undergraduate bioscience degrees to help ensure that graduates leave with the core mathematical and practical skills and competencies required by employers.

3.6 **Issue** – Industry feels that there is not a co-ordinated mechanism for it to discuss its needs with HEIs and funders in a coherent and collective way, and to work with them to bring about the change needed to address the skill gaps that it has identified in undergraduate bioscience degrees.

OLS solution – The Government will, in partnership with the HE sector and industry, establish an industry and HE forum, based on the successful high-level STEM strategy group model. This will, for example, enable life sciences employers to agree with universities what specialised course content they need to address critical skills gaps and to prioritise actions to be taken.

In the event that a need is identified for Government action to increase volumes in specific areas, the Government will discuss with the Higher Education Funding Council for England (HEFCE) the use of strategic funding to incentivise the development of new provision, or new types of provision.

The first two tasks of this forum will be to assess the curriculum for clinical pharmacology in medical and pharmacy degrees and higher medical training, and evaluate the impact of the significant public and industry funding in addressing the *in vivo* sciences (pharmacology, pathology, toxicology and physiology) skills gaps, and agree actions that will address these gaps by November 2009.

3.7 **Issue** – In order to build a successful small and medium life sciences company, business and leadership skills are as vital as the innovative science that led to its formation. However life sciences companies feel that they do not have the resources to invest in developing management and leadership skills across their organisations.

OLS solution – A new business and leadership programme for life sciences SMEs has been developed in collaboration with industry and will be launched by the end of 2009. Over the summer, the Government will work with education funders and industry to agree how the programme will be funded.

3.8 **Issue** – The Research Assessment Exercise (RAE) rewarded HEIs for excellent research but did not take explicit account of the impact that research had on UK businesses or the nation as a whole. There have been concerns that this

acted as a barrier to translating research into actual commercial applications or industrial collaboration.

OLS solution – The new Research Excellence Framework (REF), currently under development, will explicitly assess the economic and social impact of research. It will take into account, for example, the translation of research into new products and services, collaborative working between academia and business, and between academia and public services and policy makers. For life sciences, the new Framework will, for example, reward HEIs whose broad range of clinical academics have developed, adopted and diffused innovative research into clinical practice. The new Framework will be announced in 2010.

3.9 **Issue** – The UK life sciences industry can only retain its position as a global leader if there is deep and sustained collaboration across industry, academia and the NHS.

OLS solution – A package of measures:

(a) In a number of areas in the UK (such as the North West, Scotland and the greater South East), industry, Higher Education, the NHS, and medical research charities are already working closely together. They are building on existing architecture, such as Academic Health Science Centres, with the aim of achieving the same international recognition as overseas clusters such as Boston, USA. By November 2009, the Government will complete further work on how the formation of a UK Life Sciences Super Cluster can best be supported. This will build on the UK's clinical and academic excellence. It will focus on areas where there is a willingness on the part of industry, Higher Education and the NHS to work together to leverage collaborative effort to deliver life sciences innovation. Government will also consider how the Super Cluster can be included as part of the UK Trade and Investment life sciences marketing initiatives.

(b) OSCHR Partners, working with OSCHR, will lead work to develop and implement, by early 2010, a single coherent strategy across all relevant agencies (the Technology Strategy Board, Knowledge Transfer Networks, the RDAs, the Research Councils and the Health Departments). A single strategy will enable coherent communication of the opportunities available to industry for collaboration, funding sources and infrastructure support. OSCHR Partners, working with OSCHR, will offer clear leadership for this work, bringing to bear deep knowledge of the Higher Education sector and of industry.

(c) In addition, the Government will ensure that continued funding from the National Institute for Health Research for Biomedical Research Centres, Biomedical Research Units and Clinical Research Facilities will be partly contingent on demonstrable working with industry.

(d) The Government will explore which mechanisms are most effective in encouraging students to study those subjects that meet employer demand and national priorities. For example, it will work with HEIs and life sciences employers to offer better information, advice and guidance about course content, graduate destinations and how universities link up with employers (e.g. through work placements). This is one of the ways that students will be able to access the opportunities the life sciences industry offers them.

3.10 **Issue** – The provision of high quality-care requires clinicians to be familiar with the relevant practices in clinical pharmacology and pathology. This is important to enable them to evaluate and prescribe innovative medicines.

OLS solution – In early 2010, the Medical Research Council will launch a £3.5 million flagship programme in clinical pharmacology and pathology, enhancing professional skills and driving collaboration with industry.

Chapter 4

Access to finance and stimulating investment

4.1 The number one need for small life sciences companies is funding, to secure the future drug development pipeline, UK-generated IP and associated jobs. The Review and Refresh of Bioscience 2015 report[8] also described the increasingly symbiotic relationship between small and large companies.

4.2 With a global life sciences industry, it is vital that the UK offers an environment in which large companies are incentivised to invest in and contribute to the future of smaller companies. Long-term investment decisions on where to locate activity are made on a global basis and take into account a range of factors.

4.3 The UK incentivises innovative activity through the tax system. In particular, the research and development (R&D) tax credit encourages the creation of intellectual property (IP), whilst the corporate intangible assets regime encourages acquiring and holding IP assets. The R&D tax credit provides support of over £800m per year to small and large companies, and the regime for corporate intangible assets, introduced in 2002, allows companies additional relief against the assets such as IP. The Government continues to keep these aspects of the tax system under review, in line with its objectives of competitiveness, encouraging investment, promoting innovation and ensuring fairness.

4.4 **Issue** – Life sciences small and medium enterprises (SMEs) are facing increasing difficulty in securing venture capital (VC) investment, threatening the future of highly innovative and world-leading R&D.

OLS solution – On 29 June 2009, the Government announced the creation of a UK Innovation Investment Fund to invest in technology-based businesses with high-growth potential. The new Fund will focus on investing in growing small businesses, start-ups and spin-outs in four high-tech sectors, including the life sciences. The Government will invest £150 million alongside private sector investment on an equal basis, with the aim of leveraging enough private investment to build a £1 billion, 10-year VC Fund.

8 http://www.berr.gov.uk/files/file49805.pdf

4.5 **Issue** – The UK is well placed to attract globally mobile life sciences investment as a result of its excellent science base, skilled workforce, and business-friendly environment. But global competition to attract and retain this investment is increasing, with skills and infrastructure improving in other countries. Policies are also being introduced overseas to attract innovative activity, including through low corporate tax rates and enhanced reliefs, and that attract IP assets through special tax regimes on IP income, termed "patent boxes".

OLS solution – The Government already incentivises innovative activity through the tax system. Budget 2009 announced that the Government would consider evidence for further changes to the way the tax system encourages innovative activity, to ensure the ongoing competitiveness of the UK.

The Government is committed to ensuring the UK remains an attractive location for investment in innovative activity. The work is examining the role of business tax in encouraging investment in innovation, and the impact on jobs and productivity growth in the UK. It is also considering how the UK tax system compares to other regimes internationally, and the role that taxes play in decisions on where to locate innovative investment, including the location of dedicated R&D and manufacturing centres, and patent development. This assessment will allow the Government to ensure that the tax system provides the appropriate conditions for investment in innovation and to drive productivity, growth and jobs.

Investment in innovation occurs across a diverse range of activities and sectors. Since the Budget announcement, HM Treasury, along with the Department for Business, Innovation and Skills, has met with businesses across a wide range of sectors, including the life sciences, to gather evidence on innovation and the role of taxation.

Businesses have highlighted that, across many innovative activities, the strength of the science and skills base is the primary driver of investment decisions. The UK is strong in these and other key factors, such as the regulatory and legal environment. Taxation can also play an important role in investment decisions and a competitive rate of corporation tax, as well as a regime that provides certainty and minimizes complexity for all businesses is seen as increasingly important by businesses.

The work is considering whether there is scope to improve or enhance the way the tax system encourages innovation. Many businesses have pointed to the attractiveness of countries offering low corporation tax rates, particularly where they are able to match the UK in providing a skilled workforce and business-friendly environment. Therefore the benefits of introducing or enhancing specific tax reliefs and incentives will be set against the benefits of further reductions in the rate of corporation tax, which the Government continues to keep under review.

These discussions are focusing on the entire innovation chain: the creation of value, including research and development; securing that value, such as through patents and other intellectual property; and unlocking value, including through production or licensing. This chain of activity is global and can involve a range of actors around the world. The work is assessing the strength of links between these activities and the balance between tax and non-tax factors in driving investment decisions.

There is strong support among all businesses for the current R&D tax credits, particularly among SMEs where the credit is seen as critical in supporting cash flow. There is evidence to support the effectiveness of such incentives in increasing the level of R&D and the work is seeking to ensure the impact of the credits is maximised.

Some businesses have highlighted tax regimes introduced in some EU Member States in recent years that provide a preferential rate of tax on income earned from intellectual property, for example "patent boxes". HM Treasury is exploring the extent to which such schemes could encourage intellectual property to be located in the UK and the impact this could have by way of additional and productive investment in the UK.

In evaluating proposals for change, evidence on the long-term impact on productivity and employment will be crucial. The potential impact on tax receipts in the short- and long-term will also be a key factor in the assessment. This will draw on analysis of the full costs of introducing any changes, taking into account any current pressures on the tax base. Any potential changes will also be considered alongside the Government's wider approach to business taxation, including providing certainty and stability and minimizing complexity, as well as meeting international commitments.

The evidence will be assessed over the summer, drawing on the expertise of the Business-Government Forum on Tax and Globalisation, as well as through further discussions with businesses and the wider innovation community. HM Treasury will set out its assessment and proposed approach before the 2009 Pre-Budget Report. If proposals can be developed that meet the considerations set out above, Government would consult widely with businesses before making any changes.

4.6 **Issue** – Consortium relief allows a company owned by a consortium to surrender a portion of its current year tax losses to the members of the consortium to offset against their taxable profits. Life science companies have suggested that the investor structure in many small life sciences companies can preclude those investors from benefiting from consortium relief and that changes to this feature of Group Relief would have the potential to incentivise investment in SMEs by large companies.

OLS solution – As with all areas of tax, the Treasury keeps this under review, and will consider the case for any changes.

4.7 **Issue** – There is the opportunity for the NHS to deliver a better service to patients through the procurement of innovative products from life sciences companies.

OLS solution – A package of measures:

(a) The National Innovation Centre (NIC) held five NHS/industry "Wouldn't It Be Great If…. (WIBGI)" workshops at the NHS Innovation Expo in June 2009. The workshops focussed on cardiac care, urology, paediatrics, ambulance services, and regenerative medicine, which generated a short-list of opportunities for the NHS. Beginning in September 2009, the NIC, working jointly with the Strategic Health Authorities (SHAs), the Technology Strategy Board, and Knowledge Transfer Networks, will launch a series of Small Business Research Initiative (SBRI) competitions to engage industry and the NHS. Over the next 12 months, the NIC will support a rolling series of coordinated SBRI initiatives that start with NHS clinicians defining their clinical needs, and end with industry engaging with the NHS to develop compelling solutions; and

(b) The new SHA Delivery Group will lead work to develop an NHS SBRI prospectus that will set out future needs in key healthcare areas. The Group will also hold an annual conference to better understand the potential of industry to provide solutions. Further details and timetables will be set out by November 2009.

4.8 **Issue** – To capitalise fully on our leading global position in regenerative medicine, there are a number of challenges that need to be overcome, particularly access to funding and supply of bespoke infrastructure.

OLS solution – In September 2009, to support this growing and strategically important industry, the Technology Strategy Board will launch an £18 million "RegenMed" programme of investment to support key areas of commercial R&D and the development of R&D partnerships. The programme will be developed in partnership with the Medical Research Council, the Engineering and Physical Sciences Research Council, and the Biotechnology and Biological Sciences Research Council who will provide additional funding of at least £3.5 million. Programme development will be guided by a high-level industrially-focussed group comprising industry and academic experts.

The programme will have three strands:

(i) Regenerative medicine product development and validation;

(ii) Grand challenges in underpinning tools and technologies; and

(iii) Understanding value systems and business models necessary for the delivery of regenerative medicines.

The Technology Strategy Board has also committed to increase its expertise in the life sciences.

Chapter 5

Marketing UK life sciences

5.1 The actions listed in this Blueprint have the potential to transform the UK life sciences industry. This will only be realised fully through effective global marketing. For the first time ever, the UK has a single marketing strategy for the life sciences industry, in itself a transformational change. The industry-led UK Life Sciences Marketing Strategy Board will take full advantage of this by accelerating marketing activity over the next 6 months.

5.2 **Issue** – Increased effective marketing is needed to ensure international companies are aware of the UK's strengths and the new opportunities presented by the actions in this Blueprint.

OLS solution – A package of measures:

(a) UK Trade and Investment (UKTI) will coordinate a series of high-level events overseas, beginning with a summer 2009 US tour by a senior UK delegation to engage with key US-based life sciences companies and increase their investment in the UK; and

(b) By March 2011, UKTI will invest £1 million from the Strategic Investment Fund to further promote the UK and NHS brands at flagship life sciences events in the UK and overseas. For example, through supporting UK companies attendance at AdvaMed[9] in Washington in October 2009, and at Medica[10] in Düsseldorf in November 2009. In addition, UKTI will hold a new high-level technology partnering event later in 2010 that will bring life sciences decision-makers to the UK.

5.3 **Issue** – The industry-led UK Life Sciences Marketing Strategy Board is committed to bringing the life sciences industry across the UK together with a single voice when marketing UK life sciences internationally.

OLS solution – The OLS and UKTI will hold a series of roadshows throughout the English regions and Devolved Administrations, beginning in September. These roadshows will bring together businesses with other key regional stakeholders to:

9 AdvaMed is the premier high level MedTech conference in the US.
10 Medica is the world's largest MedTech trade fair with over 4000 exhibitors in 2008.

(i) Discuss the Blueprint commitments and next steps to implement them; and

(ii) Help ensure the UK life sciences industry speaks with one consistent voice in its global marketing activities.

5.4 **Issue** – Actions such as the creation of a UK Innovation Investment Fund make the UK an even more favourable environment for investors, including multi-national corporate venture funds who have not frequently invested in the UK.

OLS solution – From summer 2009, specialists will meet with corporate venture funds to build upon the strong foundations provided by the UK Innovation Investment Fund and attract additional investment in the UK.

5.5 **Issue** – Chapter 3 of this Blueprint includes actions to enhance the UK's regional centres of excellence and transform them into a UK Life Sciences Super Cluster. These UK concentrations of excellence do not currently have the international profile of key international equivalents such as the Boston life sciences cluster.

OLS solution – The UK will form strategic alliances with key US life sciences clusters in line with proposals for a UK Life Sciences Super Cluster (see Chapter 3). This will be piloted by collaboration between Boston and the golden triangle (London, Cambridge and Oxford), beginning with the signing of a Memorandum of Understanding in October 2009.

Next steps

The actions set out in this Life Sciences Blueprint have the potential to transform the environment for life sciences companies in the UK, ensuring the industry realises its potential as a major driver of economic growth and of improved health and wellbeing.

The establishment of the Office for Life Sciences has initiated a new way of working between Government and the life sciences industry. It will now be crucial to implement the commitments in this Blueprint, developing detailed delivery plans for each action. A further document, to be published in autumn 2009, will set out these plans.

A Blueprint communications strategy will be rolled out to key audiences in the UK, and globally through UK Trade and Investment.

The Government is committed to continuing the effective collaboration between Government departments and industry which has been a feature of the first phase of Office for Life Sciences' work, and to closer involvement of the NHS, the Higher Education sector and other partners.

Annex

Life Sciences Action Plan

This table sets out the Government's key new policy commitments, describes what is being delivered, and by when, as well as indicating who is responsible.

Policy Measure	By when?	Who?	Budget
THE NHS AS AN INNOVATION CHAMPION			
The Government, with NICE, will introduce an "Innovation Pass". This will be a three-year initiative for selected medicines, which will be funded for time-limited use across the NHS, from a new ring-fenced budget, without going through a NICE appraisal. NICE will play a key role in developing and applying eligibility criteria for the Pass. This will give earlier access to innovative drugs for patients with the greatest need. The Pass will be piloted with a budget of £25 million in 2010/2011. The pilot will be developed with input from industry, NICE and the NHS and will be the subject of a consultation. Funding for future years will also be discussed through the consultation and will then be determined in the context of the next spending review.	To be piloted in 2010/2011, with a consultation on the pilot by November 2009	DH/NICE	£25 million
Companies with technologies being appraised by NICE will be able to attend NICE appraisal committee meetings to respond to any questions from the committee, and will have an opportunity to comment on matters of factual accuracy. At the end of a NICE appraisal, manufacturers will be provided with the opportunity to have a debriefing meeting with NICE, and Evidence Review Groups will be asked to attend scoping meetings for NICE Single Technology Appraisals.	Agreed. For implementation	DH/NICE	N/A
Sir Ian Kennedy is conducting a study to identify the aspects of value and innovation which NICE should take into account in its work. His report will be published on 22 July 2009. NICE will conduct a one-month public consultation on its response to the Kennedy report in September 2009, and this issue will continue to be an important part of the OLS work programme into the autumn. From November 2009, NICE will also implement improvements in the way in which it explains the impact of specific factors in its decision-making.	Consultation to be held in September 2009	NICE	N/A

Policy Measure	By when?	Who?	Budget
A package of measures to address the uptake issue: (a) The Government will establish an SHA Delivery Group which will be chaired by an SHA chief executive. The Delivery Group will work to: (i) Increase the uptake of cost effective drugs; (ii) Improve the strategic relationship between the NHS and industry so that both can work together better in a more business-to-business manner; (iii) Improve the competitiveness of the UK as a site for clinical research; and (iv) Put in place equivalent NHS-led arrangements to support the early and systematic uptake of innovations in medical technologies which provide value to the NHS. (b) The Government will continue work on existing and proposed metrics to provide an authoritative comparison of the uptake of cost-effective medicines both within the NHS and on an international basis. It will also develop, by autumn 2010, a pilot set of metrics against which NHS organisations can assess themselves in relation to the uptake of cost-effective innovative technologies. (c) The Government will ensure that at least two of the new Commercial Support Units (CSUs) to be set up, under the new NHS Commercial Operating Model, will develop and test regional approaches to support innovations from the medical technology sector, through engagement with NHS at an early stage of product development. (d) The Government will work with the NHS to build innovation into the education commissioning system and by autumn 2009 will provide guidance on what SHA commissioners can do to achieve this.	By November 2009	DH/NHS	N/A

Policy Measure	By when?	Who?	Budget
The NHS Chief Executive is putting in place a package of measures to bring priority and pace to the QIPP agenda: (a) The NHS Chief Executive will take personal responsibility for the NHS' programme of action to drive greater quality, innovation, productivity, and prevention (QIPP); (b) The NHS Management Board will delegate oversight of the day-to-day running of NHS operational issues to a new NHS Operations Board, leaving the Management Board to focus exclusively on the QIPP agenda; (c) There will be a major engagement process throughout the healthcare system, with the Board of every NHS organisation expected to engage with staff, industry – including the life sciences industry – and other partners on how innovation can best be harnessed to improve quality and reduce costs at all levels of the system; (d) The ideas generated by this process will inform the NHS Operating Framework for 2010-2011; (e) Simultaneously the NHS Chief Executive will also lead a review of the system levers and incentives, such as Payment By Results (PBR) , and how they might be better deployed to accelerate QIPP; and (f) The NHS Leadership Council will take steps to intensify the sharing of skills and experience with industry leaders to support more strategic collaboration to drive innovation and bring benefits to patients.	Agreed. Implementation starting immediately	DH	N/A

Policy Measure	By when?	Who?	Budget
A package of measures to improve the UK environment for clinical trials: (a) The Government will reinforce the need for greater emphasis on research and clinical trials in the next NHS Operating Framework, building on the existing commitment to include numbers of patients in clinical research in the metrics which Trusts report in their Quality Accounts; (b) The Government will support the NHS in creating a national framework for professional local management of health research, transitioning R&D Departments to become NIHR Research Support Services Departments adopting standard operating procedures and a shared risk-based approach in order to create a step-change in speed and reliability for commercial and non-commercial trials in the NHS; (c) To underline the strategic importance of health research to the NHS, the Government will clarify the duty on SHAs to promote innovation to highlight their role in promoting R&D across healthcare organisations; and (d) To ensure the UK fully exploits its potential to be a world leader in health informatics, the Government will build on the momentum generated by NHS Connecting for Health's Research Capability Programme and its equivalents in the Devolved Administrations by: (i) Working with the major stakeholders to implement and resource the Strategic Framework agreed by the OSCHR E-Health Records Research Board; and (ii) Ensuring the development of a clear implementation plan by the end of 2009, with business cases and joint piloting with industry.	(a) Autumn 2009 (b) By April 2010 (c) Already underway (d) By the end of 2009	DH	N/A
BUILDING A MORE INTEGRATED LIFE SCIENCES INDUSTRY			
The Society of Biology will begin to accredit undergraduate bioscience degrees to help ensure that graduates leave with the core skills and competencies required by employers.	From 2010	Society of Biology	N/A

Policy Measure	By when?	Who?	Budget
The Government will, in partnership with the HE sector and industry, establish an industry and HE forum, based on the successful high-level STEM strategy group model. This will, for example, enable life sciences employers to agree with universities what specialised course content they need to address critical skills gaps and to prioritise actions to be taken. In the event that a need is identified for Government action to increase volumes in specific areas, the Government will discuss with HEFCE the use of strategic funding to incentivise the development of new provision, or new types of provision. The first two tasks of this forum will be to assess the curriculum for clinical pharmacology in medical degrees and higher medical training, and assess the impact of the significant public and industry funding in addressing the *in vivo* sciences (pharmacology, pathology, toxicology and physiology) skills gap and agree actions.	By November 2009	Industry/ Higher Education sector/BIS	N/A
A new business and leadership programme for life sciences SMEs has been developed in collaboration with industry. Over the summer, the Government will work with education funders and industry to agree how the programme will be funded.	To be launched by the end of 2009	BIS	TBC
The new Research Excellence Framework, currently under development, will explicitly assess the economic and social impact of research. It will take into account, for example, the translation of research into new products and services, collaborative working between academia and business, and between academia and public services and policy makers. For life sciences, the new Framework will, for example, reward HEIs whose broad range of clinical academics have developed, adopted and diffused innovative research into clinical practice.	The new Framework will be announced in Spring 2010	BIS	N/A

Policy Measure	By when?	Who?	Budget
A package of measures to deepen industry, NHS and Higher Education collaboration:			
(a) In a number of areas in the UK (such as the North West, Scotland and the greater South East), industry, Higher Education, the NHS, and medical research charities are already working closely together. They are building on existing architecture, such as Academic Health Science Centres, with the aim of achieving the same international recognition as overseas clusters such as Boston, USA. By November 2009, the Government will complete further work on how the formation of a UK Life Sciences Super Cluster can best be supported. This will build on the UK's clinical and academic excellence. It will focus on areas where there is a willingness on the part of industry, Higher Education and the NHS to work together to leverage collaborative effort to deliver life sciences innovation. Government will also consider how the Super Cluster can be included as part of the UK Trade and Investment life sciences marketing initiatives.	(a) By November 2009	(a) BIS/DH	N/A
(b) OSCHR Partners, working with OSCHR, will lead work to develop and implement a single coherent strategy across all relevant agencies (the Technology Strategy Board, Knowledge Transfer Networks, the RDAs, the Research Councils and the Health Departments). A single strategy will enable coherent communication of the opportunities available to industry for collaboration, funding sources and infrastructure support. OSCHR Partners, working with OSCHR, will offer clear leadership for this work, bringing to bear deep knowledge of the Higher Education sector and of industry.	(b) To be drafted by October 2009. To be implemented by early 2010	(b) OSCHR	N/A
(c) In addition, the Government will ensure that continued funding from the National Institute for Health Research for Biomedical Research Centres, Biomedical Research Units and Clinical Research Facilities will be partly contingent on demonstrable working with industry.	(c) Already underway	(c) DH/ NIHR	N/A
(d) The Government will explore which mechanisms are most effective in encouraging students to study those subjects that meet employer demand and national priorities. For example, it will work with HEIs and life sciences employers to offer better information, advice and guidance about course content, graduate destinations and how universities link up with employers (e.g. through work placements). This is one of the ways that students will be able to access the opportunities the life sciences industry offers them.	(d) 2010	(d) BIS	
The Medical Research Council will launch a £3.5 million flagship programme in clinical pharmacology and pathology, enhancing professional skills and driving collaboration with industry.	In early 2010	MRC	£3.5m

Policy Measure	By when?	Who?	Budget
ACCESS TO FINANCE AND STIMULATING INVESTMENT			
The Government announced the creation of a UK Innovation Investment Fund to invest in technology-based businesses with high-growth potential. The new Fund will focus on investing in growing small businesses, start-ups and spin-outs in four high-tech sectors, including the life sciences. The Government will invest £150 million alongside private sector investment on an equal basis, with the aim of leveraging enough private investment to build a £1bn, 10-year Venture Capital Fund.	Announced 29 June 2009	BIS/DH/ DECC	£150m
The Government already incentivises innovative activity through the tax system. Budget 2009 announced that the Government would consider evidence for further changes to the way the tax system encourages innovative activity, to ensure the ongoing competitiveness of the UK. The Government is committed to ensuring the UK remains an attractive location for investment in innovative activity. The work is examining the role of business tax in encouraging investment in innovation, and the impact on jobs and productivity growth in the UK. It is also considering how the UK tax system compares to other regimes internationally, and the role that taxes play in decisions on where to locate innovative investment, including the location of dedicated R&D and manufacturing centres, and patent development. This assessment will allow the Government to ensure that the tax system provides the appropriate conditions for investment in innovation and to drive productivity, growth and jobs. Investment in innovation occurs across a diverse range of activities and sectors. Since the Budget announcement, HM Treasury, along with the Department for Business, Innovation and Skills, has met with businesses across a wide range of sectors, including the life sciences, to gather evidence on innovation and the role of taxation. Businesses have highlighted that, across many innovative activities, the strength of the science and skills base is the primary driver of investment decisions. The UK is strong in these and other key factors, such as the regulatory and legal environment. Taxation can also play an important role in investment decisions and a competitive rate of corporation tax, as well as a regime that provides certainty and minimizes complexity for all businesses is seen as increasingly important by businesses.	Pre-Budget Report	HMT	N/A

Policy Measure	By when?	Who?	Budget
The work is considering whether there is scope to improve or enhance the way the tax system encourages innovation. Many businesses have pointed to the attractiveness of countries offering low corporation tax rates, particularly where they are able to match the UK in providing a skilled workforce and business-friendly environment. Therefore the benefits of introducing or enhancing specific tax reliefs and incentives will be set against the benefits of further reductions in the rate of corporation tax, which the Government continues to keep under review. These discussions are focusing on the entire innovation chain: the creation of value, including research and development; securing that value, such as through patents and other intellectual property; and unlocking value, including through production or licensing. This chain of activity is global and can involve a range of actors around the world. The work is assessing the strength of links between these activities and the balance between tax and non-tax factors in driving investment decisions. There is strong support among all businesses for the current R&D tax credits, particularly among SMEs where the credit is seen as critical in supporting cash flow. There is evidence to support the effectiveness of such incentives in increasing the level of R&D and the work is seeking to ensure the impact of the credits is maximised. Some businesses have highlighted tax regimes introduced in some EU Member States in recent years that provide a preferential rate of tax on income earned from intellectual property, for example "patent boxes". HM Treasury is exploring the extent to which such schemes could encourage intellectual property to be located in the UK and the impact this could have by way of additional and productive investment in the UK. In evaluating proposals for change, evidence on the long-term impact on productivity and employment will be crucial. The potential impact on tax receipts in the short- and long-term will also be a key factor in the assessment. This will draw on analysis of the full costs of introducing any changes, taking into account any current pressures on the tax base. Any potential changes will also be considered alongside the Government's wider approach to business taxation, including providing certainty and stability and minimizing complexity, as well as meeting international commitments.			

Policy Measure	By when?	Who?	Budget
The evidence will be assessed over the summer, drawing on the expertise of the Business-Government Forum on Tax and Globalisation, as well as through further discussions with businesses and the wider innovation community. HM Treasury will set out its assessment and proposed approach before the 2009 Pre-Budget Report. If proposals can be developed that meet the considerations set out above, Government would consult widely with businesses before making any changes.			
As with all areas of tax, the Treasury keeps this [Consortium Relief] under review, and will consider the case for any changes.	Ongoing	HMT	N/A
A package of measures to drive innovative procurement: (a) The National Innovation Centre (NIC) held five NHS/industry "Wouldn't It Be Great If…. (WIBGI)" workshops at the NHS Innovation Expo in June 2009. The workshops focused on cardiac care, urology, paediatrics, ambulance services, and regenerative medicine, which generated a short-list of opportunities for the NHS. The NIC, working jointly with the Strategic Health Authorities (SHAs), the Technology Strategy Board, and Knowledge Transfer Networks, will launch a series of Small Business Research Initiative (SBRI) competitions to engage industry and the NHS. Over the next 12 months, the NIC will support a rolling series of coordinated SBRI initiatives that start with NHS clinicians defining their clinical needs, and end with industry engaging with the NHS to develop compelling solutions; and (b) The new SHA Delivery Group will lead work to develop an NHS SBRI prospectus that will set out future needs in key healthcare areas. The Group will also hold an annual conference to better understand the potential of industry to provide solutions.	(a) Beginning in September 2009 (b) Further details and timetables will be set out by November 2009	DH/NHS	N/A

Policy Measure	By when?	Who?	Budget
To support this growing and strategically important industry, the Technology Strategy Board will launch an £18 million "RegenMed" programme of investment to support key areas of commercial R&D and the development of R&D partnerships. The programme will be developed in partnership with the Medical Research Council, the Engineering and Physical Sciences Research Council, and the Biotechnology and Biological Sciences Research Council who will provide additional funding of at least £3.5 million. Programme development will be guided by a high-level industrially-focussed group comprising industry and academic experts. The programme will have three strands: (i) Regenerative medicine product development and validation; (ii) Grand challenges in underpinning tools and technologies; and (iii) Understanding value systems and business models necessary for the delivery of regenerative medicines. The Technology Strategy Board has also committed to increase its expertise in the life sciences.	To be launched in September 2009	TSB and MRC, EPSRC, BBSRC	TSB: £18m MRC, EPSRC and BBSRC: £3.5m
MARKETING UK LIFE SCIENCES			
A package of measures will ensure international awareness: (a) UK Trade and Investment (UKTI) will coordinate a series of high-level events overseas, beginning with a US tour by a senior UK delegation to engage with key US based life sciences companies and increase their investment in the UK. (b) UKTI will invest £1 million from the Strategic Investment Fund to further promote the UK and NHS brand at flagship life sciences events in the UK and overseas. For example, at AdvaMed in Washington in October 2009, and at Medica in Düsseldorf in November 2009. In addition, UKTI will hold a new high-level technology partnering event later in 2010 that will bring life sciences decision-makers to the UK.	(a) Summer 2009 (b) By March 2011	UKTI	(a) N/A (b) £1m SIF investment

Policy Measure	By when?	Who?	Budget
The OLS and UKTI will hold a series of roadshows throughout the English regions and Devolved Administrations. These roadshows will bring together businesses with other key regional stakeholders to: (i) Discuss the Blueprint commitments and next steps to implement them; and (ii) Help ensure the UK life sciences industry speaks with one consistent voice in its global marketing activities	September 2009 onwards	UKTI	TBC
Specialists will meet with corporate venture funds to build upon the strong foundations provided by the UK Innovation Investment Fund and attract additional investment in the UK.	From Summer 2009	UKTI	N/A
The UK will form strategic alliances with key US life sciences clusters in line with proposals for a UK Life Sciences Super Cluster (see chapter 3). This will be piloted by collaboration between Boston and the golden triangle (London, Cambridge and Oxford), beginning with the signing of a Memorandum of Understanding.	MoU to be signed in October 2009	UKTI	N/A

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Dr Paul Catchpole
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