

Invest 2035: The UK's Modern Industrial Strategy

LCP Health Analytics' response

24th November 2024

Thank you for giving us the opportunity to provide responses to the government's current Industrial Strategy consultation. As a health analytics consultancy, that primarily works with pharmaceutical clients, we are delighted to provide answers that focus on the life sciences industry and the opportunity for growth we see there.

Sectors

1. What are the most important subsectors and technologies that the UK government should focus on and why?

The life sciences sector is dynamic and varied, made up of an array of large companies, academic institutions and small and medium-sized enterprises (SMEs) in biopharma and pharmaceuticals, medical devices and diagnostics, tools and healthcare information technology. According to the PwC Life Sciences Future50 report, the life sciences sector made up £43.4bn gross value added in the UK in 2023 and supports 646,000 jobs annually.¹ The life sciences are a major area of strength for the UK as demonstrated through the development of the Covid-19 vaccine, as well as the level of jobs and investment it provides across the country. The pace of change and opportunity remains huge, including ongoing innovation driving significant change in patient's lives; as an example, the UK recently approved the first gene-editing therapy which has considerable potential for treating patients with severe beta thalassaemia.²

There remain however ongoing health challenges which will require further innovation; taking obesity as just one example, this is a significant public health concern and is associated with an increased risk for a number of diseases. Worryingly over 64% of adults in England are now estimated to be overweight or living with obesity and this is forecast to continue to grow.³ Improving outcomes of people living with obesity not only holds significant direct health improvements, but also wider benefits including productivity and savings to the Treasury. Indeed, achieving a more productive population through a healthier population is a key objective of the UK Government. Recent LCP Health Analytics work quantified the welfare benefits savings that would be realised by preventing a person from falling out of work due to illness linked with obesity, finding that just keeping one person in good health to avoid requiring unemployment and/or sickness benefit would save the Department for Work and Pensions (DWP) £9.3K per year; the average duration of claims is four years and therefore £37K savings to DWP per person over 4 years could be made.⁴ Evidently fostering an environment that improves population health by continuing to enable access innovation for patients that need it most could benefit individuals in the UK, the NHS, the taxpayer and the wider economy.

2. What are the UK's strengths and capabilities in these sub sectors?

With global competition rising, the UK has several strengths at its disposal that, if the right enablers remain in place, can be used to stay competitively advantageous in the years ahead. This includes the UK's exceptional academic system, with four of the world's top ten universities for life sciences and medicines here, powering research and development (R&D) as well as crucial skill development, the wealth of genomic and health data available, and our ability to quickly spread innovation effectively with the single-payer National Health Service (NHS) system.

The Life Sciences Vision published in 2021 identified four critical success factors key to realising these strengths; collaboration between industry and the NHS, Government research funding, improved healthcare data and access to funding for companies.⁵ Whilst progress has been made in these areas since the vision was published, efforts has been mixed with key challenges emerging. Many of these challenges and how to address them will be explored in later questions but, in summary, they largely focus on four themes: improving the clinical trial environment, driving not only access but also uptake of new medicines, encouraging investment in R&D with the right mixture of incentives, and improving the health data infrastructure. To ensure the UK can continue to maximise its strengths in life sciences, drive economic growth, improve patient outcomes and stay globally competitive, it is crucial that these challenges are addressed.

Business environment

3. Where you identified barriers in response to Question 7 which relate to RDI and technology adoption and diffusion, what policy solutions could best address these?

To support the Industrial Strategy and drive innovation in the UK, the government could adopt a framework that combines a mix of fiscal policies. R&D tax incentives, targeted research grants and public research funding are recognised as the most cost-effective fiscal incentives to boost innovation.⁶ While tax incentives, such as tax credits or deductions on labour taxes, offer equal support to all private R&D activities and are less expensive to administer, they also require companies to have sufficient internal funding. Therefore, targeted grants directed toward start-ups and SMEs could provide crucial support during the early stages of innovation and strengthen the industrial ecosystem. Public research funding presents the highest knowledge spillovers and is especially useful for supporting fundamental research that may not attract immediate private investment but ultimately fosters industry partnerships to develop commercially viable innovative products. These fiscal tools should be complemented by a balanced policy environment that secures intellectual property rights while lowering barriers to entry by new innovative companies, thereby encouraging market competition and preventing excessive corporate concentration.⁶

In healthcare, policies supporting the adoption of innovative medicines are essential to translate R&D into tangible population health, societal and economic impact. Mechanisms like the Cancer Drugs Fund and the Innovative Medicines Fund provide managed access to innovative cancer and non-cancer medicines at a responsible price, enabling patients to benefit from the latest health technologies without delay, whilst also enabling the collection of ongoing data to inform developments.^{7,8} These initiatives also encourage engagement and investment from life sciences companies to develop and launch innovative health technologies in the UK given early access and data collection incentives. To maximise their impact, the government should continue to support these funds while monitoring the adoption of these treatments across the health system. In this sense, tools like the Innovation Scorecard, which measures the use of individual medicines and medicine groups in the NHS England, are critical in identifying regional variations.⁹ These variations can represent opportunities for the government and industry to work collaboratively to refine delivery of health services and improve adoption of innovative medicines.

In addition to pharmaceuticals, policies regarding healthcare-related artificial intelligence (AI) are essential. As LCP Health Analytics has previously highlighted, AI has the potential to significantly reduce NHS waiting times by automating logistics (e.g. hospital bed allocation and management of appointments and resources), thereby allowing healthcare professionals to focus on patient care.¹⁰ To prevent exacerbation of inequalities in access and outcomes, the government must develop policies that ensure the benefits of AI adoption in healthcare are equitably distributed across the country. Currently, the UK has a sector-specific approach to AI regulation, which provides flexibility but resulted in a fragmented landscape that lacks coordination among organisations and creates ambiguity for developers and providers.¹¹ By contrast, the European Union (EU) has introduced the EU AI Act, a horizontal legislation that classifies healthcare AI as 'high risk', requiring third-part conformity assessments and adherence to strict regulatory obligations before market entry.¹² The EU AI Act also promotes innovation through initiatives like 'regulatory sandboxes', which allow AI to be tested in controlled environments.¹³ The UK can draw lessons from this approach to refine its own policies for AI in healthcare. Additionally, the government should consider harmonisation with international frameworks, as many UK-based companies aim to commercialise their AI products in EU markets. This alignment with EU standards could be particularly beneficial for the industrial strategy and strengthen the position of the UK as a leader in AI-driven healthcare innovation.¹¹

4. What are the barriers to R&D commercialisation that the UK government should be considering?

Within the life sciences sector, barriers to R&D commercialisation are succinctly summarised by a quote by Richard Torbett, Chief Executive of the Association of the British Pharmaceutical Industry (ABPI): "The life science industry has the potential to deliver so much more for the UK - but to do this we need to fix the NHS, improve patient access to medicines, and invest more in our critical science and regulatory infrastructure."¹⁴ A significant challenge lies in the current funding landscape, which is inadequate for a sustainable R&D model. In pharmaceuticals, there has been a shift in R&D focus from large companies to smaller businesses and academia, resulting in an increasing number of drugs originating in academia and reaching the market through public-private collaboration.¹⁵ However, data from the UK Research and Innovation (UKRI) suggests that this research is not being funded sustainably, with many organisations currently struggling to cover their operational costs and facing increased challenges to secure grants.¹⁶ Recent economic challenges, including Covid-19, Brexit and rising interest rates have also led to a decline in equity finance investment.¹⁷ Cancer Research UK's projection of a £1 billion funding gap in cancer research over the next decade further underscores the need for increased public funding to address this critical shortfall.¹⁸

Despite a leading position in global research quality, the UK also faces an industry-university gap that restricts the adoption and diffusion of new technologies. The UK lags behind other industrialised countries in key innovation metrics, such as R&D expenditure, number of successful spin-off companies and patent grants.^{19,20} Bridging this gap will require stronger partnerships between key stakeholders (universities, research centres, SMEs and large companies) and additional incentives for academics to engage in commercial applications.²⁰

The regulatory environment represents a critical barrier to R&D commercialisation and requires further reforms. A notable example is the Voluntary Scheme for Branded Medicines Pricing and Access (VPAS). The VPAS was introduced in 2019 as a clawback scheme for cost-containment of branded prescription medicines in the NHS. The high payback rates of VPAS, which surged unexpectedly to 26.5% in 2023, led to high-profile exits by AbbVie and Eli Lilly from the VPAS and raised concerns over the long-term sustainability of life sciences investment in the UK. Its successor, the Voluntary Scheme for Branded Medicines Pricing, Access and Growth (VPAG), has generally been welcomed by the pharmaceutical industry due to the introduction of measures designed to stabilise payback rates. Frameworks used by the National Institute for Health and Care Excellence (NICE) to evaluate the value of health technologies warrant special attention. The severity modifier was introduced in February 2022 to provide additional weighting for medicines treating severe conditions. For instance, as LCP Health Analytics research recently presented at ISPOR Europe showed, between June 2023 and May 2024, the severity modifier was only applied to 30% (14/46) of the eligible single technology appraisals.²¹ There are concerns about the implementation of the severity modifier and

a more consistent reporting of the calculations would enhance transparency and comparability across appraisals.^{21,22} Pascal Soriot, CEO of AstraZeneca, has criticised NICE's classification of metastatic breast cancer as moderately severe rather than severe, a decision that affected the cost-effectiveness threshold for treatments.²³ This limitation of high-value therapies may restrict patient access compared to other countries and discourage R&D investment in the UK.

The clinical trials sector of the UK also requires a favourable regulatory environment to ensure global competitiveness. A 2022 ABPI report revealed a 41% decline in industry clinical trials initiated in the UK between 2017 and 2021 and a review by former health minister Lord James O'Shaughnessy recommended critical changes to how clinical trials are conducted and regulated in the UK.^{24,25} More recently, Lord James O'Shaughnessy has highlighted key areas that require further attention, such as trial decentralisation, suggesting that recent guidance by the US Food and Drug Administration on this topic could serve as a reference for regulatory updates in the UK.²⁶ Additional key challenges include delays in trial initiation, difficulties in early recruitment and lack of transparency of clinical data. Improving regulations in these areas could increase trial participation and further position the UK as an attractive destination for clinical research.²⁶

Business environment – Data

5. How can the UK government best use data to support the delivery of the Industrial Strategy?

To support the delivery of the Industrial Strategy, the UK government must prioritise measures that improve data standardisation, integration and transparency. Regarding data standardisation, implementing government-wide open data standards and a unified data model would greatly enhance the data usability across government and industry. In this context, examples of best practice include the *Recommendations for Data Standards in Health Data Research* by the UK Health Data Research Alliance and the *Reproducible Analytical Pipelines strategy* by the Government Analysis Function.^{27,28} Integration of recognised geographic coding systems, such as Office for National Statistics and Organisation Data Service codes, and using population-weighted mapping would further enhance the ability to track demographic changes over time and space. This standardisation would allow for the identification of health inequalities, which could be addressed by targeted policy interventions. For example, a collaboration between Pfizer, Shine Cancer Support and LCP Health Analytics has identified that women living in the most deprived communities and black women have significant inequalities across the whole breast cancer pathway in England and Scotland.²⁹ Similar granular data was not accessible for Wales and Northern Ireland at the time of analysis, underscoring how standardisation and publication of data across nations is important to allow comparable analyses.²⁹

Effective data integration can enable a deeper understanding of unmet needs, vulnerable populations and the performance of interventions, providing valuable insights for policymakers and industry players. The government should consider the implementation of a centralised Application Programming Interface (API) that aggregates data from various sectors. This would streamline access to diverse datasets, reduce duplication and lower costs associated with hosting multiple APIs. Likewise, the government should strive for improved data transparency across organisations. For example, for clinical data, by applying data pseudo-anonymisation techniques it is possible to explore the value of health data while safeguarding patient privacy. Additionally, clear legislation on the use of synthetic data (i.e. artificially generated data that mimics real-world datasets) is still required.^{30,31} Improved policies around clinical data transparency and synthetic data usage could enhance public-private collaborations, providing industry with access to critical datasets that drive the development of innovative medicines and devices.

A leading example of how data can be used to support the industrial strategy is the Discover-NOW health data research hub.³² Discover-NOW leverages deidentified linked health and care datasets in Europe to develop new treatments, identify and recruit clinical trial patients and support health economic evaluations. In a previous collaboration with industry and academia, LCP Health Analytics has leveraged the Discover dataset to provide evidence about the real-world characteristics, outcomes, healthcare utilisation and costs in a large real-world cohort of individuals with Alzheimer's disease.³³ Identifying individuals with high healthcare costs early in their disease may improve health outcomes and reduce associated costs later life.³³ Therefore, the government should encourage similar initiatives that enable data sharing and foster public-private collaborations.

6. What challenges or barriers to sharing or accessing data could the UK government remove to help improve business operations and decision making?

In today's data-driven world, the sharing and accessibility of data plays a crucial role in informing policy, enhancing research, and delivering valuable public services. In the life sciences industry particularly, the UK is a reservoir of data due to the NHS. Harnessing this data is vital to conduct more comprehensive R&D, identify gaps in the market, roll out targeted solutions, and improve patient outcomes. However, despite recognising the substantial benefits of efficient data sharing, significant barriers persist across governmental and institutional landscapes which serve as a major hurdle in how data can be harnessed to improve business operations and decision making.

One of the primary barriers is that the UK does not have guidance on open data standards and structured pipelines to access and manipulate this data to conduct meaningful analysis. Currently, open data is fragmented across different bodies responsible for collecting and publishing it, with little consistency in the publication of the same data over various time points. Furthermore, applying population weighting and geographical mapping in open data is left to everyone using the data and are hosted on different platforms with inconsistencies in the mapping process of different datasets. This leads to a wastage of essential resources and time in the process of making the data usable for analysis by each party interested in using data from different sources. In addition to this data being published in non-machine-readable formats on poor APIs makes it challenging to source

data. The main consequence of these barriers and challenges is that the already limited budgets in place to impact change are being used to apply blanket solutions across populations and geographies where the results are ineffective.

Another key barrier in the data landscape are the regulations that limit data for commercial purposes. While several of these regulations are important to allow for data protection and anonymity, they serve as a major hinderance in the commercial sector using the data to draw meaningful insights and problem areas that they have the resources to address and deploy solutions for. The commercial sector is essential to driving innovation and removing some of these barriers would be greatly beneficial for the development of solutions that could help society. Specifically, the new guidelines for the General Data Protection Regulation (GDPR) have very strong penalties for non-compliance of data-sharing and the implementation of this has led to the stalling of 40 clinical and observational studies. Furthermore, international groups such as the International Genomics of Alzheimer's Project cannot share data real time and hence must run analyses on isolated data which reduces the value of their data and increases costs and time needed to derive meaningful insights³⁴.

The government published an independent report in 2021 on Unlocking the value of data: Exploring the role of data intermediaries³⁵. In addition to the barriers mentioned above, some additional barriers highlighted were lack of awareness of data provider on the potential uses of their data, especially across the various governmental organisations collecting and publishing the data. As previously mentioned, the lack of a common infrastructure, often means that data providers are not incentivised to share data due to the high costs to make their data sharing feasible and concerns regarding legal requirements. The government have also gone on to recognise that the full potential of the data being collected and shared in the UK is not being realised in the National Data Strategy 2020³⁶.

Business environment – Mobilising Capital

7. What are the main barriers faced by companies who are seeking finance to scale up in the UK or by investors who are seeking to deploy capital, and do those barriers vary for the growth-driving sectors? How can addressing these barriers enable more global players in the UK?

The healthcare and life sciences sectors are a key part of the UK's budget allocation and funding, and the UK is a recognised global leader in the R&D conducted in this sector. However, as previous answers have flagged, the UK does lag being in turning ground-breaking R&D and innovation into economic successes.

The recent report published by the Department of Business Trade has shown that Foreign Direct Investment (FDI) into the UK has been on a decline over recent years in the life sciences, biotechnology, and pharmaceutical sectors. According to the Department for Science, Innovation, and Technology's life sciences competitiveness indicator for 2024, the UK is primarily in the middle and bottom quartiles in relation to competitors when it comes to the investment environment³⁷. The Life Sciences Industrial Strategy update published last in 2017 indicated that a key issue affecting the scaling of innovative UK companies stemmed from lack of long-term investment³⁸. As development and deployment of innovations in the healthcare sector occur over a long period of time, it is essential that there is consistent flow of investment over long-term time horizon. The Life Sciences fund, removing challenges for pension funds to invest in high risk high-growth companies, and providing tax relief are amongst solutions outlined in the strategy report to continue to bring in investment and drive innovation³⁹. The UK does have a target to invest around 2.4% of its gross domestic product into the healthcare sector by 2027, and continuing to work towards this target is essential for this growth-driving sector³⁹. The CEO of the Industrial Development Agency Ireland, the FDI promotion agency of this country, has also indicated that there is a growing regulatory burden in Europe which is leading to frustrated investors investing in the US over Europe⁴⁰.

In the healthcare sector particularly, some barriers stem from the complex landscape and high threshold to market entry and bureaucratic processes that follow. As previously shared, one example is the clinical trial landscape – an essential driver of innovation but an area where the UK has been lagging behind. The 'Commercial clinical trials in the UK: the Lord O'Shaughnessy review - final report' outlines key issues regarding the commercial clinical trial landscape in the UK and key problems highlighted include the set-up and approval processes in the UK for clinical trials, which are slow and bureaucratic compared to other countries that have overtaken the UK as leaders in this space²⁵. Specific barriers in this space include excessive bespoke processes by NHS trusts and multiple renegotiations by sponsors contributing to slow trial set-up times, despite national costing steps and templates aiming to standardize the process²⁵. Furthermore, when it comes to approvals for clinical trials, regulatory under-resourcing, particularly in the MHRA, leads to approval delays and inconsistent communication, undermining trial timelines and deterring global companies from selecting the UK for clinical research²⁵.

Another key barrier impeding growth of this sector stems from the challenges in accessing and using the rich healthcare and research datasets being developed in the UK. Our healthcare data should be viewed as a key driver of growth and previous he government has outlined in the National Data Strategy that the full economic potential of the data In the UK is not being realised³⁶. As previously shared in response to the challenges in data access and solutions section, it is important that the datasets being created and published are harmonised and made research ready so that some of the strongest and most innovative life sciences and AI companies can leverage this resource to develop technological solutions and innovations³⁶.

The UK is also unique as it has a special 'triple helix' of academia and research, the NHS, and the industry, hence a key aspect of mobilising capital rests on skillsets and labour³⁹. The UK is the 2nd highest globally for STEM graduate students, which has dropped substantially in the post-pandemic period. It is essential that the UK continues to be a leader in producing highly skilled

graduates in this industry³⁸. Furthermore, while cutting-edge research is being conducted, the translation of the research into viable commercial solutions requires certain skillsets. The Life Sciences Strategy also identifies this and suggests that commercial awareness and education should be imparted to academics and researchers, so they are able to leverage their cutting-edge work to drive innovation and growth³⁹.

Finally, the Board of Trade in the UK has indicated in a report about the Life Sciences industry that a key indicator of scaling up and driving innovations are international collaborations⁴¹. The Department of Trade should continue building relationships and play an important role in converting market opportunities into inward investments. Horizon Europe is an example of a program that is essential in driving innovations across borders and will allow scientists to freely conduct their research across UK and Europe⁴¹. It is important to continue to allow for the influx of talent that is key to hiring skilled labour and scaling up innovations. A case where international relations and conducting work cross borders is the UK Texas BioBridge, where the bringing together academia, the government, hospitals, and innovation organisation across the UK and USA has facilitated £100 million in export wins and 10 UK technologies being used in the USA⁴¹.

The partnership established this year between Greater Manchester and Eli Lilly to conduct a real-world evidence study on obesity and weight management this year is another example of how the government's willingness to form international collaborations will look to tackle a key population health challenge our country current faces, whilst also likely bringing about further inward investment and allow for companies to scale up and for research to be translated into commercial successes^{42,43}.

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