

UK Life Sciences Future50— Momentum in an evolving landscape

November 2025



To create this report we've brought together PwC's life sciences industry experts across Deals, Audit, Consulting, Risk, and Tax. Our global network of experts in pharmaceutical, biotech, medtech and healthcare works with you to define and deliver effective solutions so you can solve the complex challenges facing your business, from innovation to regulation and patient engagement.

Above all we aim to help you succeed, today and tomorrow. So we'll help you shape the business strategies your future demands and implement the time-critical programmes and procedures essential for success today. Our multi-disciplinary teams and global reach enable us to offer exactly the support you need, wherever you need it, regardless of your organisation's size.



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About

PwC's UK Life Sciences Future50 includes a selection of companies that illustrate the breadth and depth of world-class science and innovation by life sciences businesses in the UK but is neither exclusive nor exhaustive. Company information has been derived from publicly available sources. PwC has not independently verified any of the company information. Where statistics or research has been discussed in relation to any of the companies mentioned, these have been sourced from company websites or information in the public domain.

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01 Foreword



Stephen AhernePharmaceutical and Life
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When we published UK Life Sciences Future 50 report in October 2023, we set out to celebrate and showcase some of the most innovative and groundbreaking companies operating in the UK's life sciences sector. The Future 50 were all developing exciting research in areas such as biopharmaceuticals, artificial intelligence, digital health, diagnostics and devices.

In this follow up publication, Momentum in an evolving landscape, we've revisited the same 50 companies to mark the progress they've made, and to explore their views of the overall context in which they continue to pursue their pioneering, innovative work. This update provides an opportunity to reflect on the sector's development, acknowledge the challenges encountered, and consider opportunities on the road ahead.

We've sought to understand what matters most to stakeholders on the ground—both to our original Future50 cohort and to large life sciences corporates—as we explore some of the key levers that will help the UK life sciences sector to fulfil its immense potential. As well as capturing the views and experiences of our original Future50 group, we've also canvassed the opinions of large corporates to include their perspectives on the UK's attractiveness for global corporate investors in UK Life Sciences.

In the two years since we compiled our first report, the volatile geopolitical and economic environment we highlighted then continues to create uncertainty. So, it's testament to the resilience of the Future50 companies that we find them maintaining the innovation drive and commitment to excellence that characterise the life sciences industry in the UK.

One of our key aims in 2023 was to shine a light on the high quality science and companies, that with the right support and enablers, could turn the UK's unquestionably world-leading academic research into a life sciences global powerhouse. In this report, we take a look at some of the policies and support that effect a real change. We've set out to explore crucial questions regarding critical factors that will shape a world-leading UK life sciences sector and the steps required to convert the ambitious goals of the UK government's Invest 2035 industrial strategy into action and positive results.

This updated report is the result of extensive interviews and research across the UK life sciences ecosystem. We're immensely grateful for the time and effort that so many contributors have once again invested in helping us to produce this report. A massive thanks to the Future 50 companies and their management teams, and to the many other market participants who generously provided their insight and support in the creation of this report. We remain convinced that with these Future 50 companies and the many more growing in the UK, that we have a Life Sciences sector to be immensely proud of. We hope that by addressing the challenges head on with positive actions, the fortunes of our UK Life Sciences ecosystem and beyond can deliver on the promise, which will ultimately lead to a healthier population.

02

For centuries, the UK has been at the forefront of scientific discovery, from Edward Jenner's development of the first successful vaccine, to Alexander Fleming's identification of penicillin.

Introduction

The UK has been at the forefront of scientific discovery for centuries. From Edward Jenner developing the first successful vaccine, to Alexander Fleming identifying penicillin, scientific breakthrough has been at the heart of the UK's industrial progress.

It's no surprise then that the life sciences industry is and will remain a cornerstone of the UK economy. The UK government recognises this and has identified life sciences as a key pillar in its 'Invest 2035' industrial strategy. While the UK continues to attract substantial investment—with the BIA reporting £3.7 billion¹ in biotech equity financing in 2024, an increase from 2022–23 levels—the funding environment remains challenging. With capital flows concentrated among a small number of companies (with BIA data² showing the 15 largest VC deals over 2024—H1 2025 representing over 50% of the total funds raised over the period), many businesses continue to face significant hurdles to securing the growth capital they need.

With both the UK life sciences' huge potential and pressing challenges in mind, we've updated the Future50 report we published in October 2023. In doing so, we've set out to:

1

Track and celebrate the progress of the Future 50 Understand the Future50's perspective on current sector enablers and

challenges

Capture a broader industry perspective from larger corporate stakeholders

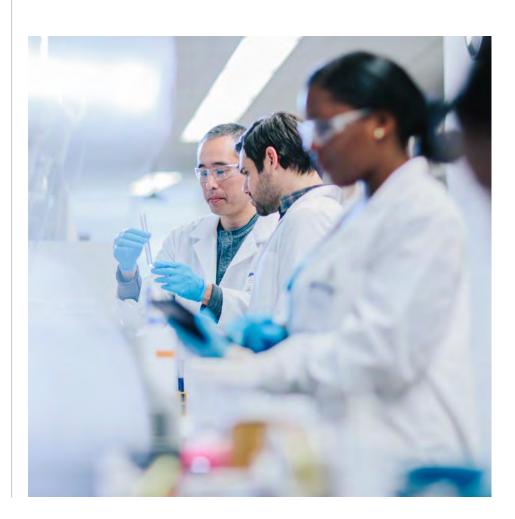
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Reflect on the UK Policy landscape including the Life Sciences Sector Plan 5

Explore critical questions about the sector's future in the UK

We highlight some of the advances made by the Future 50 companies since our initial report. These include the major milestones they've reached, such as scientific or technological development, clinical advancements, regulatory approvals and strategic collaborations, and we provide fundraising data drawn from information in the public domain. Using interviews and survey data (n=32), we also canvassed the opinions of key executives from the Future 50 on topics such as current market conditions, their optimism for future growth and what they see as policy priorities.

To enrich our analysis, we gathered insights from five large corporate stakeholders about investing in the UK life sciences ecosystem and their view of the UK's attractiveness in the global context. Their valuable perspectives provide a broader industry view into both the attractiveness of the UK as an investment destination and the critical factors influencing corporate investors' decisions.



Scientific breakthrough has been a key facet of the UK's industrial progress. Ensuring that the sector is an attractive destination for global investment is crucial, as UK life sciences drives economic growth in a number of direct and indirect ways.



It is estimated to employ over 350,000 people³, with many roles in the sector contributing significant economic value. Given the need for greater UK productivity, that's a key consideration



Clinical trials support direct revenue generation for the NHS with the average perpatient revenue estimated at around £28,000⁵



Medicinal and pharmaceutical products were the UK's third-largest goods export by value in 2024⁶



The sector boosts growth indirectly by improving the health of the UK population. The Department of Work and Pensions estimates that ill-health which prevents people working represents £132 billion⁷ of lost economic output



The <u>Life Sciences</u>
<u>Sector Plan</u>
estimates the
sector to be <u>worth</u>
around £100 billion
to the economy⁴
(capturing
turnover/gross
output rather than
just Gross Value



Box 1: Perspectum and the UK Biobank

The UK Biobank's large-scale imaging resource enabled Perspectum, a digital diagnostics company, to test and validate its MRI-based liver biomarker cT1 across more than 28,000 participants. By linking imaging data with detailed health outcomes, the UK Biobank provided the statistical power to show that cT1 can predict future heart and liver disease years before symptoms develop. The study, published in Nature Medicine⁸, demonstrated how population-scale datasets can turn advanced imaging into a predictive diagnostic tool. UK Biobank's open-access model allowed Perspectum to translate its research into clinically relevant insights far more rapidly than would have been possible through conventional trials. This case highlights how national research infrastructure can accelerate medical innovation and support a preventative approach to healthcare.

The sector has huge potential, not only to drive major advances in scientific discovery but also to improve population health and productivity, create high-value jobs and drive exports. The UK's unique data assets, comprising population-scale health and genomic data from the UK Biobank and Our Future Health, offer immense opportunities to unlock the discovery and development of new medicines, diagnostics and medical technologies.

However, there are still barriers to fully realising this vast potential. The Life Sciences Sector Plan recognises these. While the UK excels at discovery, it has underperformed in commercialisation and adoption, with slower clinical trial set-up and recent regulatory backlogs having an adverse impact. Scale-up finance is comparatively weak compared with the US, for example, and there's intense global competition for investment.

In the next section, we explore these dynamics, asking: what are the UK's distinctive strengths, what are the areas of unrealised potential and what are some of the critical barriers that need to be addressed to unlock sustained sector growth?



03



Key context

The UK life sciences sector is built on a foundation of world-class research institutions, a globally unique NHS, and a growing legacy of medical innovation and breakthrough science.

These assets together create the potential for the UK to play a leading role in global health innovation. Yet while the UK's foundations are enviable, the sector continues to fall short of fully realising its potential (e.g. in terms of clinical trials delivery, patient access to innovation and scale-up funding). With the right conditions, it could translate its inherent advantages into significantly greater global leadership and impact.

The Life Sciences Sector Plan is clear in setting out the UK's opportunity: to better align its world-leading science with a health system capable of rapid adoption, creating a cycle where innovation is both developed and deployed at scale. Converting these opportunities may just be the difference between carrying on the current trajectory of maintaining the UK's reputation as a centre of scientific discovery and achieving its full ambition to become a true life sciences superpower.

This section looks at the landscape that has shaped the trajectory of the Future50 cohort and the broader UK life sciences sector in recent years. It considers the UK's distinctive assets—including the NHS and clinical research base, both of which hold significant untapped potential, alongside enduring strengths such as academic excellence, scientific talent, and global leadership in genomics and advanced therapies—while also examining the structural barriers that continue to limit the sector's scale and impact, with a focus on the funding and commercial environment. Understanding this context is essential to appreciating both the successes achieved and the actions still required to secure the UK's future leadership.



Foundations for growth: Leveraging key UK assets

The NHS as a strategic asset

The NHS as a testbed for innovation and early adoption

The NHS is central to the success of the UK life sciences sector and vice versa. The NHS is not only a care provider, but also has a major role to play in driving innovation through development, providing resource and intellectual capital to deliver clinical trials, adopting new technologies for the benefit of the UK population, all of which have the real potential to deliver both improved patient outcomes and economic growth.

The NHS and life sciences should be symbiotic: a proactive and collaborative NHS should provide a platform to test innovation early, generate real-world evidence, and accelerate adoption. New therapies and technologies can, in turn, help address the NHS's own pressures. However, this virtuous circle is hindered by fragmented governance, inconsistent research capacity or delivery, and slow access and uptake of innovations compared to international peers, as illustrated in the ABPI's 2025 Competitiveness

Framework report⁹, which showed the stark reality of

the UK's ranking behind most comparator countries in terms of uptake three years after a therapy is approved.

The competitiveness indicators published by the Office of Life Sciences showed a decline relative to comparator countries in terms of the uptake of newly launched medicines over 2023¹⁰–2024¹¹.

Greater investment in access to and uptake of innovative medicines in the UK would not only transform patient outcomes but also deliver significant productivity and economic gains, as shown in PwC's joint report with the ABPI¹². PwC analysed the potential impact of improving access to, and uptake of, 13 innovative medicines across four therapeutic classes. The analysis estimated that around 1.2 million UK patients eligible for these innovative treatments were missing out, and that 429 QALY (quality-adjusted life years) could be gained from their increased uptake, in turn resulting in an estimated £17.9 billion in productivity gains for the UK overall, and an additional £5.5 billion in additional tax income.

The economic opportunity of approving, reimbursing and adopting innovations in the NHS is enormous: innovation not only improves patient outcomes, but also generates significant cost savings (through reduced hospital stays and waiting lists, fewer unnecessary treatments, and improved workforce efficiency), stimulates job creation and further investment in R&D. Yet the full economic benefits are rarely considered in the current cost effectiveness models. As such, the full benefits which would accrue to the wider UK economy are not fully analysed.

Harnessing NHS data for research and innovation

One of the NHS's most distinctive strengths is the scale and depth of its data. Covering the entire population, it offers an unparalleled resource for understanding population health trends, disease progression, and treatment outcomes. By harnessing this data effectively, the NHS has the potential to become a central driver of innovation in life sciences, supporting the UK's ambition to shift from reactive care to preventative models and to deliver personalised therapies tailored to individual patients. The Federated Data Platform initiated in 2023 has the potential to transform how health information is used in the UK. By securely linking population health data with genomic information across the whole population, the system could provide unprecedented insights into risk factors and disease trajectories. This integration would make it possible to identify conditions earlier in life, support targeted screenings and proactive interventions to prevent disease progression, and enable far more personalised therapies. Such a platform would not only enhance clinical research and accelerate trial design, but also reshape everyday care, moving from reactive treatment to prevention and precision medicine delivered at scale.

The 10-Year Health Plan: integrating technology and prevention in healthcare delivery

The UK Government's 10-Year Health Plan¹³, released in July 2025, outlines an ambitious roadmap to reshape the nation's healthcare system by focusing on prevention, digital transformation, and community-based care. Key objectives include shifting from hospital-based to the community setting, enhancing early diagnosis and preventive measures, and incorporating technologies such as AI and genomics into everyday healthcare practices.

The 10-Year Health Plan has identified five transformative technologies; data, artificial intelligence, genomics, wearables, and robotics that together will enable more personalised care, improve outcomes, enhance productivity, and stimulate economic growth.

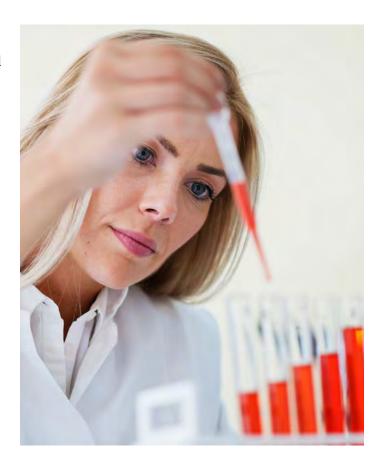


Figure 1: Transformative technologies identified in the 10-Year Health Plan



Data

High-quality, interoperable health data is the foundation of the modern health system. It fuels AI algorithms, underpins genomic discovery, and provides the context for wearable insights. By creating a new Health Data Research Service in partnership with the Wellcome Trust, the NHS will make de-identified data accessible to researchers and innovators, driving earlier diagnoses, better population health management, and new scientific breakthroughs.

Box 2: Proximie

Proximie connects people, data, and devices in real time through a platform purpose-built for operating rooms: complex, data-rich environments where valuable operational information is often lost or inaccurately recorded. Using computer vision and AI, Proximie's platform analyses surgical video, device data, and workflow patterns to generate structured insights from information that would otherwise go unrecorded. By capturing and analysing real-time surgical data, Proximie's platform aims to help surgical teams optimise workflows, reduce inefficiencies, and unlock additional surgical capacity. These insights can reveal patterns in case setup times, instrument use, or staff coordination that are often invisible in manual records. By turning unstructured activity into measurable data, Proximie's platform has the potential to enable continuous improvement and more consistent surgical performance across teams and sites.



Artificial Intelligence

The Plan sets the ambition of transforming the NHS into the most AI-enabled health system in the world, with AI technology seamlessly integrated into clinical pathways. This aims to reduce administrative burdens, freeing up staff time for patient care, and is expected to act as a decision-support tool for clinicians. Beyond operational gains, AI can unlock the potential of other technologies by interpreting genomic data, improving diagnostics, guiding robotic interventions, and personalising treatment.

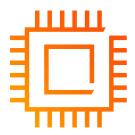
Box 3: CHARM Therapeutics

CHARM Therapeutics uses 3D deep-learning to model how small-molecule drugs interact with their protein targets. Its proprietary platform, DragonFold, predicts the way proteins and potential medicines co-fold and bind, to allow researchers to visualise how these interactions change in real time. Through this AI-driven approach to drug discovery, CHARM aims to unlock previously hard-to-drug targets. Its lead programme focuses on next-generation menin inhibitors for acute myeloid leukaemia, designed to overcome resistance seen with existing therapies. By applying artificial intelligence capabilities to molecular design, CHARM exemplifies how AI can accelerate the discovery of precision medicines.



Genomics and Predictive Analytics

Genomic science has the potential to move healthcare from reactive treatment to pre-emptive, personalised care. The Generation Study, sequencing the genomes of 100,000 newborns, and a large-scale study sequencing 150,000 adults, are early steps towards making genomic sequencing at birth universal. Genomics can identify health risks earlier, tailor prevention and treatment strategies to individual needs, and even explore population-level risks such as obesity. This opens up the possibility of tackling chronic disease before it develops, transforming long-term health outcomes.



Robotics

Robotics, already well-established in surgery, have the potential to expand across healthcare to support precision and recovery. In addition to surgical use, robots can assist in rehabilitation, patient monitoring, and prosthetic development for those with musculoskeletal or neurological conditions. Starting from 2025, the Plan aims to scale adoption in line with NICE guidelines, making robotic precision a routine part of NHS treatment.

Box 4: Peptone

Peptone is developing novel therapeutics targeting intrinsically disordered proteins (IDPs), proteins that do not adopt a fixed three-dimensional structure. Because traditional structure-based drug discovery has struggled to address IDPs, Peptone applies new physics-and AI-based approaches to characterise and modulate them. Its platform aims to bridge the gap between genomic variation and functional protein biology. As the NHS scales population-level sequencing initiatives such as the Generation Study¹⁴, Peptone's models could help interpret which IDP-related variants are functionally disruptive or pathogenic. By seeking to reveal and modulate the dynamic protein states that drive disease, Peptone's work supports the NHS's predictive analytics ambition—identifying molecular dysfunction and potential therapeutic opportunities before clinical symptoms emerge.

Box 5: CMR Surgical

CMR Surgical, a surgical robotics company, announced that the Torbay and South Devon NHS Foundation Trust will be using 15 the Versius Plus robotic surgical system. Over a six-month period, the surgical team will use the system to treat a range of conditions, including colorectal cancer, gallbladder removal, and liver disease. Versius Plus enables surgeons to perform minimally invasive procedures using robotic arms controlled from a console with 3D visualisation, enhancing precision and control, and with the potential to reduce post-operative pain, shorten hospital stays, and support faster recovery. The collaboration aligns with the NHS's wider efforts to expand access to advanced surgical technologies and improve patient outcomes.



Alongside these core technologies, the plan outlines systemic reforms to accelerate their adoption. These include establishing new global institutes to strengthen the UK's role in science and innovation, speeding up clinical trial recruitment so that setup times fall to 150 days by 2026, and broadening NICE's remit to cover digital tools, diagnostics, and devices, while also identifying outdated technologies to phase out. Financial structures will be redesigned, with NHS organisations required to reserve at least 3% of annual spending for one-off investments in service transformation, supported by multi-year budgets to enable longer-term planning. Procurement processes will be streamlined, creating more space for life sciences and technology companies to deliver services, and the NHS will move to a single national medicines formulary within two years to simplify access to treatments.

The plan does not lack ideas: it covers innovation from data and AI through to genomics, wearables,

and robotics, while also recognising the financial and organisational reforms needed to support them. However, the real test lies not in the plan's articulation, but in its execution. The NHS has long faced challenges in scaling innovation, with barriers ranging from complex regulation and procurement systems to workforce pressures and siloed data infrastructure. The risk is that the words remain aspirational if these structural obstacles are not addressed with equal determination. As the Innovation Ecosystem Programme highlights, there is a critical need for investment in adoption capacity: the people, culture, and infrastructure that enable innovations to scale. The Life Sciences Sector Plan reflects this, allocating funding for implementation and streamlined procurement. The challenge now is to ensure these mechanisms are delivered with focus and accountability to shift the NHS from a culture of pilots to one of sustainable, system-wide adoption.

Box 6: Perspectum

Perspectum, a company commercialising non-invasive digital diagnostic tools that use innovative MRI biomarkers and AI-driven analytics to assess and monitor liver disease as an alternative to traditional biopsies, has been involved in setting up a community diagnostic centre¹⁶ together with Oxford University Hospitals, to help reduce wait times for diagnostic tests including MRIs in Oxford. This initiative aligns with the recommendations of the Darzi report, and one of the three priorities of the 10-Year Health Plan, for more care to be delivered in the community rather than in hospitals.

The success of the NHS and the success of the UK life sciences sector are deeply interdependent. A well-functioning NHS provides the data, scale, and clinical environment to develop, trial, and adopt innovation at pace, while life sciences companies bring forward the new medicines, diagnostics, devices, and digital tools that can ease NHS pressures, improve productivity, and deliver better outcomes for patients. This creates a virtuous cycle: the NHS acts as a testbed and partner, giving innovators the evidence and access they need to grow and attract investment; in turn, the sector helps the NHS to meet its goals of prevention, personalisation, and efficiency.

The prize is two-fold: stronger health and resilience for the UK population, and a globally competitive life sciences industry that drives jobs and economic growth. Progress will depend on cohesive policy that treats the NHS and the life sciences sector as parts of the same ecosystem: aligning industrial strategy with healthcare strategy, ensuring that efforts to scale UK innovations and efforts to transform the NHS reinforce each other.



Revitalising the clinical research base

The UK has historically been a global leader in clinical research, renowned for its robust regulatory environment, diverse patient population, and skilled investigators. However, recent years have seen a slip in global rankings, indicating a need to revitalise the clinical trials landscape.

A report by the ABPI published in December 2024¹⁷ highlights the changes made in response to the findings of the O'Shaughnessy Review¹⁸, with actions to improve study set-up and delivery and mandating the use of a standardised contracting and costing process for NHS research in England. The ABPI report highlights the signs of recovery in the UK clinical trials delivery system, with key improvements noted over 2023 including the following:

- The UK ranks 4th globally for Phase 2 trials, up from the 6th position in 2022; and 8th globally for Phase 3 trials, up from the 10th position in 2022;
- The number of UK industry clinical trials initiated increased by 3.7% from 411 in 2022 to 426 in 2023; and
- The number of Phase 3 trial initiations increased by 16.5% over the same period.

The ABPI report also makes clear that commercial clinical trials deliver multiple benefits: they bring direct revenue into NHS Trusts, give patients earlier access to innovative medicines, and position the UK as a global testbed for life sciences innovation. NHS Trusts that engage in research have better patient outcomes with lower mortality, shorter hospital stays and improved patient-care experiences.

By hosting trials, the NHS strengthens its role as a partner for industry and attracts further inward investment, while patients gain access to cutting-edge therapies years before they may become widely available. Based on our interviews, both Future50 companies and large corporate stakeholders emphasise the critical importance of swift and efficient clinical trial initiation for their investment and growth plans.

Echoing the priorities of the Clinical Trials Framework, the UK government's <u>Life Sciences Sector Plan</u>¹⁹ places clinical trials at the heart of its growth agenda, recognising them as both a driver of patient benefit and an important driver of inward investment. The Life SciencesSector Plan prioritises cutting trial set-up times through standardised contracting and streamlined approvals; harnessing the NHS App and national data platforms to broaden and diversify patient recruitment; and establishing new NIHR—industry Commercial Research Delivery Centres to scale capacity across the country.

The evidence from commercial clinical trials across regional hospital trusts is clear: greater participation in such trials can lead to improved market access for new and innovative medicines. The economic benefits are far-reaching—driven not only by improved patient outcomes but also by increased foreign direct investment (FDI) and wider system efficiencies. Implementing the O'Shaughnessy recommendations at pace would be instrumental in realising this potential.

Maintaining academic excellence and the scientific talent pool

The UK's academic institutions consistently rank among the world's best in life sciences research. This excellence fuels a strong pipeline of scientific talent and groundbreaking discoveries. According to the 2025 QS World University Rankings for Medicine and Life Sciences²⁰, four UK institutions—University of Oxford, University of Cambridge, Imperial College London, and University College London—sit within the global top ten. Beyond the Golden Triangle, the UK's broader academic excellence is underscored by universities such as the University of Edinburgh, ranked 19th globally, the University of Manchester, ranked 32nd; the University of Glasgow ranked 42nd, University of Bristol ranked 56th, University of Birmingham ranked 59th and the University of Nottingham ranked 68th globally. As highlighted in the original Future 50 report, the UK's research base is a magnet for global talent and investment, with the exceptional research pioneered at these institutions helping to found and grow many of the companies featured in the Future 50 sample.

According to the Office of Life Sciences' 2024 Life Sciences Competitiveness Indicators²¹, the UK continues to account for a substantial share of global medical sciences citations, ranking third behind the USA and China, at 11.5% in 2023. Importantly, the UK ranked ahead of the USA and China in terms of its share in the top 1% of the most-cited publications globally. According to the report's results, 1.8% of the UK's medical sciences publications were in the top 1% of the most-cited medical sciences publications, which was the highest proportion out of all comparator countries in 2023.

Yet a key issue remains: are UK government and immigration policies doing enough to incentivise talent mobility across academic and corporate spheres? On multiple occasions, the Wellcome Trust highlighted²² the persistently high cost of visas for skilled researchers as a critical barrier to attracting and retaining international talent.

Recognising it cannot afford to be complacent, the <u>Life Sciences Sector Plan</u>²³, issued as part of the UK Government's Industrial Strategy, puts an emphasis on investing in skills and attracting global talent. The plan's actions include the establishment of the Global Talent Taskforce to streamline the visa system and promoting the UK's life sciences sector to international professionals. The Turing AI Pioneer Fellowships, launched in 2025, aim to develop skills in AI, particularly in the application of AI to life sciences. Talent and ease of immigration are a key driver for foreign direct investment, and as shown in the ABPI's Competitiveness Framework²⁴, the UK lags behind comparator countries in terms of the cost for skilled worker visas. Investment in simplifying and accelerating global talent mobility will therefore be essential to strengthening the UK's international competitiveness.







Leading on genomics and advanced therapeutics

The UK has long been a global leader in genomics and advanced therapies from research and innovation to clinical trials and commercial products.

- The UK's Genomics capability is a distinctive strength, underpinned by projects whose ambition and scale place the UK at the forefront of preventive and personalised medicine. For example, <u>Our Future Health</u>²⁵ is building one of the world's largest longitudinal health research cohorts, with an eventual aim of recruiting five million participants, providing a rich, diverse dataset to support discovery and translational research across genetics and prevention.
- The UK demonstrated remarkable leadership in large-scale viral genome sequencing during the pandemic. Through this capability, the UK was able to identify and track variants in real time and to inform public health policy through data-driven insights.

 Through the COVID-19 Genomics UK (COG-UK) consortium, the Wellcome Sanger Institute became the world's largest single contributor to SARS-CoV-2 genomic data, sequencing up to 5,000 viral genomes each week²⁶ and processing more than ten million samples on its campus. This extensive genomic surveillance capability enabled real-time tracking of emerging variants and informed infection control measures in settings such as dialysis units, helping to protect vulnerable populations and guide public health policy.
- The UK is also a leading European destination for CGT clinical trials, representing 9.5% of global CGT clinical trials and 50% of European CGT clinical trials according to UK Cell and Gene Therapy Catapult²⁷.

Box 7: Autolus

Pioneering research from University College London led to drugs like Autolus' AUC ATZYL, which recently gained regulatory approval in the <u>US</u>²⁸, <u>EU</u>²⁹ and <u>UK</u>³⁰ for adults with relapsed or refractory B-cell precursor acute lymphoblastic leukaemia.

Box 8: Immunocore

Immunocore's KIMMTRAK was a notable example of many "firsts": the first TCR therapeutic to receive regulatory approval from the FDA³¹, the first bispecific T cell engager to receive regulatory approval from the FDA to treat a solid tumour, and the first therapy for the treatment of unresectable or metastatic uveal melanoma to be approved by the FDA.

- Investments in manufacturing capacity, innovations in scalable and cost-effective manufacturing processes, and a flexible regulatory framework are all key to unlocking the potential of advanced therapies as highlighted by recent advances in both manufacturing infrastructure investment and regulatory frameworks.
- The UK is expanding its manufacturing base in advanced therapies with the construction of a £20 million Oligonucleotide Manufacturing Innovation Centre of Excellence in the Glasgow City Region announced in December 2024. Located adjacent to CPI's Medicines Manufacturing Innovation Centre (MMIC), the facility will pioneer sustainable processes for producing oligonucleotide-based medicines. The centre has the potential to strengthen the UK's competitiveness in global medicines manufacturing, accelerate the pipeline of oligonucleotide therapies, and create high-skilled jobs as part of a growing innovation cluster in Scotland.
- The MHRA's recent guidance on Modular Manufacture and Point of Care regulations for Human medicines³² is a world first in this regard, representing an important regulatory tailwind for the sector with its dedicated framework for decentralised cell therapy manufacturing. The framework establishes two decentralised manufacturing routes which can be added to an existing manufacturer's licence or granted separately, allowing hospitals or designated control sites to oversee production on their premises or in relocatable modular units positioned adjacent to them.

 This eliminates a significant operational roadblock for autologous therapies. Hospitals can now complete the final manufacturing steps for personalised cell and gene therapies on-site, cutting vein-to-vein times from weeks or months to mere days.

The related clinical trials regulations have also been updated to accommodate for the decentralised manufacturing routes and streamline and accelerate trial site activation. The regulations also introduce packaging flexibility: when a point-of-care product is given to the patient immediately after manufacture, several standard outer-packaging requirements are waived, another measure to streamline the process of providing these complex therapies to patients.

Box 9: Ori Biotech

Ori Biotech launched its IRO platform in 2024—a flexible, automated manufacturing system designed to standardise and scale the production of personalised cell and gene therapies. The company's technology aims to reduce manual interventions, improve process consistency, and lower manufacturing costs by integrating automation and digital control into traditionally labour-intensive workflows. Its cloud-based software platform supports data capture and analysis to help optimise manufacturing processes and facilitate faster technology transfer between sites. The platform has received³³ the FDA's Advanced Manufacturing Technology (AMT) designation, recognising its potential to enhance efficiency and innovation in cell and gene therapy manufacturing and broaden patient access to these advanced treatments.

Closing the funding gaps: unlocking scale-up capital

The UK is home to one of the world's leading financial centres, with a globally renowned financial system and international institutions supporting pension funds that collectively manage over £3 trillion³⁴ in assets. Unlocking even a fraction of this capital to power the UK's innovation economy, including life sciences, continues to represent a huge latent opportunity. Through initiatives such as the Mansion House Compact (2023), followed by the Mansion House Accord (2025) and reforms to broaden the British Business Bank's practical remit (giving it more capital, more flexibility, more sectoral targeting, and more scope for strategic investment), efforts are underway to channel more of this long-term pension capital into growth equity and the scale-up economy, but as yet not enough funds are finding their way into UK companies.

While the UK excels in early-stage innovation and is able to attract some early stage investment, a persistent challenge remains in scaling up companies to become global leaders. Access to sufficient growth capital is crucial for these companies to expand operations, conduct larger clinical trials, and commercialise their innovations effectively.

Recognising this "scale-up gap," important initiatives were launched recently to unlock institutional investment, particularly from pension funds, into UK growth assets:

• In October 2024, the <u>British Growth Partnership</u>³⁵ was announced, which is a new vehicle, subject to regulatory approval, set up to drive UK pension fund and other institutional investment into venture capital funds and innovative businesses, supported by a cornerstone government investment.

- In November 2024, the British Business Bank completed a £250 million investment³⁶, which was matched by an additional £250 million from Phoenix Group, creating a £500 million investment vehicle under the Long-Term Investment for Technology and Science (LIFTS) initiative.

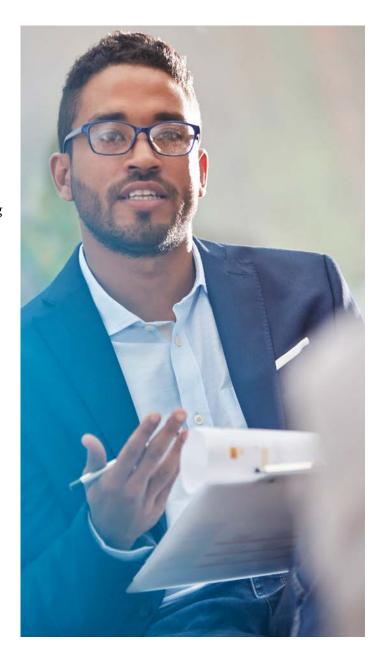
 Managed by Schroders Capital through a newly launched Long-Term Asset Fund, the vehicle is designed to support UK late-stage technology and science companies, with about 20% of the fund earmarked for life sciences. The initiative aims to catalyse over £1billion of funding and provide pension funds and institutional investors with access to high-growth private market opportunities.
- In February 2025, Cambridge Innovation Capital announced the launch of its new £100 million Opportunity Fund³⁷, anchored by Aviva Investors and British Patient Capital, dedicated for investing into later-stage deep tech and life sciences companies looking to scale.
- In May 2025, the UK government announced the Mansion House Accord³⁸, an expansion of its 2023 Mansion House Compact, which had originally set a goal for pension providers to allocate 5% of defined contribution (DC) default fund assets to unlisted equities by 2030. Under the new Accord, 17 workplace pension providers—representing around 90% of active DC savers' assets—committed to invest 10% of their default pension funds in productive assets by 2030, with at least 5% specifically directed to UK-based opportunities. This doubling of ambition is expected to unlock up to £50 billion of long-term investment into high-growth sectors such as life sciences, clean energy, infrastructure, and advanced technology, supporting both UK economic growth and stronger long-term outcomes for savers.

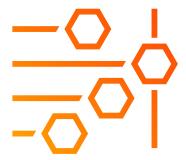
In June 2025, the Secretary of State for the Department for Business and Trade announced that £6.6 billion of new capital is being committed by the British Business Bank³⁹ to support growth and innovation. Of the £6.6 billion commitment, £4.0 billion will be deployed via the British Business Bank (BBB) Industrial Strategy Growth Capital initiative across eight priority sectors including life sciences, and £2.6 billion is committed to help drive the growth of smaller businesses in the UK's Nations and regions. This announcement expands the BBB's role in supporting venture and growth equity and aims to tackle the scale-up funding gap by expanding the BBB's remit to invest larger amounts and lead funding rounds.

The direction of travel is positive: reforms are creating a pathway for pension capital to flow into late-stage life sciences, with the BBB now empowered to lead larger funding rounds and private vehicles like LIFTS set up to target scale-up opportunities. However, major gaps remain. For a lot of scaling companies, there remains a significant gap in access to growth equity, leading to slower development trajectories, distracted management teams, and leaving the UK still at risk of losing promising firms to overseas markets, as also highlighted in the results of our Future50 C-suite survey.

While policy reforms are laying the groundwork for productive investment, the real challenge lies in operationalising these commitments. A key next step will be enabling more effective engagement between venture capital managers and DC pension Chief Investment Officers to articulate how existing VC opportunities align with pension schemes'

long-term objectives, shifting the conversation from cost to value, and from short-term performance to long-term outcomes. Transparent fee structures (aligned with a competitive market and charge cap requirements), clear reporting, and robust monitoring will be essential to building confidence and unlocking sustained pension participation in private capital.





Confronting persistent challenges

As outlined in the previous section, the UK is advantaged by world-class research institutions, the scale of NHS data, strong clinical trial opportunity, and leading capabilities in genomics and advanced therapies. Yet decisive action is critical to unlock these assets' full potential and address challenges in scale-up funding and attracting global talent.

The UK boasts a growing network of regional life sciences clusters in the Golden Triangle and beyond (such as Alderley Park, Edinburgh BioQuarter, Cardiff Edge). However, when benchmarked internationally, there are certain key parameters (primarily related to the commercial environment) where the UK lags in overall competitiveness. The commercial environment is clearly a key factor that international boards take into account when deciding where to invest and build R&D and manufacturing capabilities.

To realise the full benefits of these clusters, the UK must offer a more frictionless environment and act as a genuine pull factor for investment, by creating a more predictable and coordinated commercial environment and aligning regulatory, reimbursement and adoption processes.

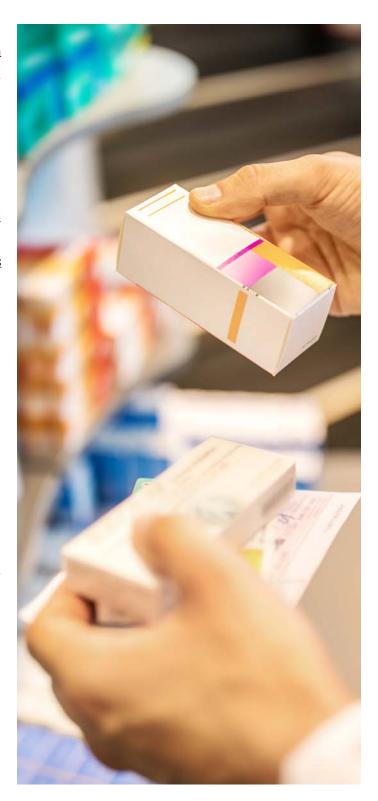
The UK must address critical friction points to create a more attractive commercial environment, by accelerating approvals, aligning reimbursement with value, and improving adoption of innovation, if it is to leverage these assets into sustained global leadership and inward investment.

- Approval times and market access: The UK continues to lag behind the US and European peers in both the speed of regulatory approvals and market access. The 2024 EFPIA Patients W.A.I.T. Indicator Survey⁴⁰ showed that England lags behind a number of its European peers in terms of the time between central approval to availability. For example, Germany the fastest European peer, achieved an average time from approval to available of 128 days, compared to 411 days in England.
- Reimbursement and pricing:
 - According to a 2025 survey by the ABPI and BIA, the UK has seen a sharp decline in access to orphan therapies⁴¹. Of the 18 companies surveyed, 11 expected to launch fewer than 75% of their global rare disease pipeline in the UK over the next five years. Respondents cited the low likelihood of positive NICE reimbursement decisions and the burden of VPAG payment rates as drivers of their decision. The survey also revealed that since 2018, there were 16 out of 64 medicines indicated for rare diseases approved by the MHRA which companies decided not to submit to NICE for evaluation, indicating the challenges of navigating NICE processes for rare and ultra rare diseases. However, the new parallel NICE-MHRA assessment process, introduced under the 10-Year Health Plan⁴², is designed to enable concurrent regulatory and reimbursement reviews, reducing the time between marketing authorisation and patient access.

2/

- The UK's constrained pricing structure is drawing criticism from industry stakeholders as a deterrent to R&D and manufacturing investment.
 Benchmarking shows UK medicine spending is significantly lower than peer countries like Germany or France, impacting access to innovation and making the UK less competitive in drug launches.
- Adoption rates: The UK's uptake of newly launched therapies remains well below comparator averages. In fact, according to the <u>Life Sciences Competitiveness Indicators published in 2024</u>⁴³, uptake per capita at one year post-launch is roughly half (0.52), improving modestly to 0.62 by year five. In essence, innovation may reach approval, but access to patients remains slow, reducing the UK's attractiveness as a launch market for global innovators.
- Incentivising innovation: The UK would benefit from a commercial model that recognises and rewards the value of innovation. Strengthening market access and reimbursement mechanisms, accelerating access pathways, and fostering collaborative frameworks between industry, the NHS and regulators, are critical areas where the UK could improve its position in terms of access to medicine compared to international benchmark countries.

These themes were echoed in our corporate stakeholder interviews, where participants emphasised key opportunities for the UK in terms of enhancing the clinical trials environment and increasing the flexibility of the commercial environment to attract more inward investment.





Making the case for optimism

Taken together, the UK life sciences sector stands on a solid foundation of world-class strengths, with leading academic institutions such as the Universities of Oxford, Cambridge, Edinburgh, Manchester, Bristol, Dundee, Warwick, Imperial College London, University College London and King's College London, alongside renowned research centres including the Wellcome Sanger Institute, the Babraham Institute and Cancer Research UK, which underpin much of the science behind the Future 50 companies. Together with its renowned talent base, the commercial success of its leading corporates, a globally recognised clinical research base, and the unique strategic asset of the NHS, these assets have long been the key drivers of the UK's reputation for excellence. However, historical reputation and a strong academic base will not be enough, unless there are definitive actions to deliver the recent policy initiatives designed to unlock scale up capital. Against this backdrop, results from the UK Government published Life Sciences Competitiveness Indicators should drive action: waning foreign direct investment, a decline in the UK's share of global clinical trials, and comparatively slow uptake of new innovations all signal that inertia is not an option.

There is much to be proud of within the UK life sciences ecosystem, as highlighted in the strengths above. Addressing the challenges head on with decisive action, meeting the rhetoric and plans with progress, and taking the UK to new heights in life sciences, is achievable. That said, the path forward will require leveraging the NHS more effectively, both as a testbed for innovation and as a partner in real-world evidence gathering, while ensuring that funding and regulatory structures can keep pace with the ambitions of cutting-edge scientific ventures.

The recent achievements of the Future 50 cohort, presented in the following sections, illustrate what is possible when UK science and innovation thrive. These companies are delivering breakthroughs that not only benefit patients but also showcase the UK's potential in driving global life sciences research.

Realising this at scale requires policy frameworks that attract global talent, unlock institutional funding for growth, foster a commercial environment that incentivises innovation, rewards the products of innovation, and ensure the UK remains the natural home for the next generation of global life sciences leaders.

04

Methodology

This report is based on a mixed-methods approach, combining secondary research from the public domain with primary stakeholder insights.

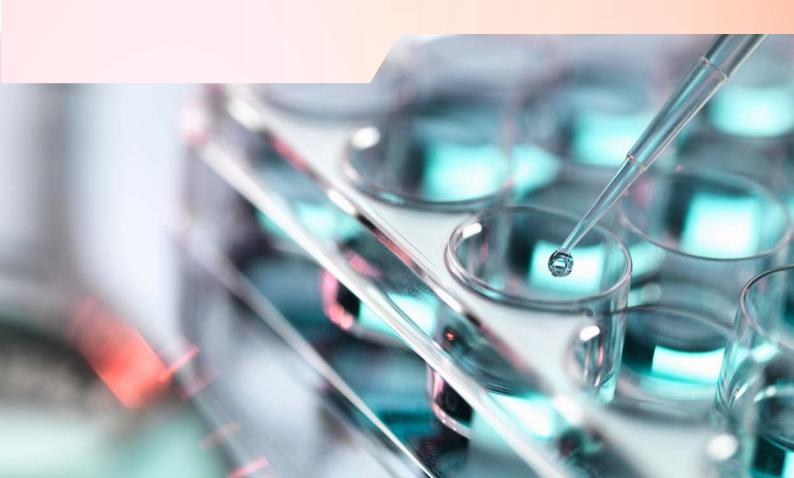
To assess the progress of the Future50 companies, and canvass stakeholder opinion, we conducted:

Public domain research: We tracked publicly available data on the Future50 companies identified in the original 2023 report. This included monitoring company websites, press releases, and industry news sources to identify key milestones, fundraising announcements, strategic partnerships, and product development updates.

Future 50 company survey: We distributed a survey to the companies from the original Future 50 cohort and obtained 32 responses.

This survey aimed to capture their perspectives on key challenges and opportunities, their level of optimism regarding future growth, and their policy recommendations for fostering a more supportive ecosystem.

Corporate stakeholder interviews: We conducted interviews with five large pharmaceutical and medical device corporations with a significant UK presence. These interviews explored their perspectives on the UK life sciences investment landscape, the factors influencing their investment decisions, and their recommendations for strengthening the sector.



05

Findings

Future 50 company progress: Key milestones and momentum

Our research reveals that the Future 50 companies have maintained strong momentum, achieving significant milestones via clinical results, regulatory approvals, new product launches and partnerships. Whilst the below list is neither exclusive nor exhaustive, it illustrates the dynamism and transformative potential of UK life sciences companies.

We grouped their milestone achievements into three categories*:



The sample illustrates the dynamism and transformative potential of UK life sciences companies.

Clinical/research advancements



Collaborations and partnerships



Regulatory advancements or product launches



^{*}The list is neither exclusive nor exhaustive. All information based on public domain research. Cut-off date of 1 October 2025.

Clinical/research advancements

Several Future 50 companies have progressed therapeutic candidates into or through clinical trials, illustrating the continued strength of the underlying science and the progressive de-risking of assets towards commercialisation, which continues to deliver value accretion despite challenging market conditions across the sector.



Alchemab Therapeutics

Alchemab Therapeutics, a company pursuing a novel drug discovery approach harnessing the power of adaptive immunity, announced⁴⁴ the initiation of a Phase 1 first-in-human study of ATLX-1282, a first-in-class antibody programme targeting amyotrophic lateral sclerosis (ALS) and other neurodegenerative conditions, which was licensed to Eli Lilly. Alchemab will conduct the first-in-human study for ATLX-1282 and Lilly will lead further development and commercialisation of the therapy.

Amphista

Amphista, a company developing next generation targeted protein degradation (TPD) therapeutics, announced in June 2025 that it achieved a discovery research milestone⁴⁵ under its exclusive research collaboration and licence agreement with Merck KGaA. This achievement highlights the potential of the company's platform in the rational design of orally bioavailable protein degraders, a novel modality that has the potential to drug disease-relevant proteins that have proven elusive from existing approaches to drug discovery and development.





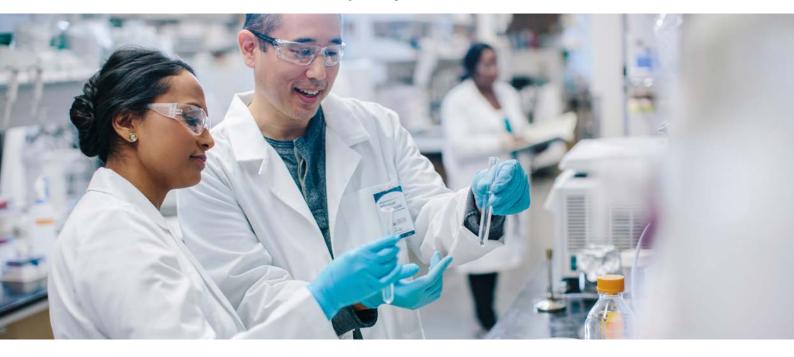
Artios

Artios, a company developing DNA damage response (DDR) therapeutics for cancer, announced in April 2025 that it reported the first Phase 1/2a combination data⁴⁶ from its lead ATR inhibitor ART0380. The drug, in combination with low-dose irinotecan, produced confirmed responses, including complete responses, in patients with advanced solid tumours. These preliminary clinical findings suggest ART0380 may have potential in combination settings, supporting further evaluation of DDR-targeted approaches in cancers that remain difficult to treat. In September 2025, the company announced that the FDA granted Fast Track designation⁴⁷ to its ATR inhibitor, alnodesertib, in combination with a low dose of chemotherapeutic agent irinotecan, for the treatment of adult patients with ATM-negative metastatic colorectal cancer (mCRC) in the third-line setting.

AviadoBio

AviadoBio, a gene therapy company developing targeted treatments for neurodegenerative diseases like frontotemporal dementia and ALS, <u>progressed its lead candidate</u>⁴⁸ into the clinic, with the dosing of the first patient announced in April 2024. This is a milestone not just for the company but for the field in general: according to the company, this is the first time doctors have directly injected a gene therapy into a key deep brain area in an adult patient, potentially opening a new way to treat brain diseases.





CHARM Therapeutics

CHARM Therapeutics, a company using its 3D deep-learning platform combined with laboratory experiments to develop novel medicines, announced in September 2025 that, using its AI-enabled protein–ligand co-folding platform DragonFold, it has identified a development candidate⁴⁹ for acute myeloid leukaemia (AML). According to the company, the candidate showed strong tumour regression in preclinical models and maintained effectiveness against known resistance mutations while being predicted to work at low doses. The company describes the finding as evidence of how its structure-based AI approach could enable the design of more precise cancer therapies capable of overcoming common resistance mechanisms.



Crescendo Biologics

Crescendo Biologics, an immuno-oncology company developing targeted T cell–enhancing therapeutics, announced new clinical biodistribution data⁵⁰ for its lead bispecific, CB307. Conducted as part of a Phase 1b trial, the results showed targeted tumour uptake in metastatic castration-resistant prostate cancer. These findings support the potential of Crescendo's Humabody platform, which uses small antibody fragments to enable safer, more precise T cell activation within the tumour microenvironment. The company's partner Zai Lab has also initiated a Phase 2 trial⁵¹ of ZL-1102.



Cumulus Neuroscience

Cumulus Neuroscience, via a collaboration led at the University of Bath, announced that a three-minute, non-invasive Fastball EEG test (the core component of its AccelADx screening tool in development) reliably detected early memory impairment in people with mild cognitive impairment⁵² in a real-world (at-home) trial. The trial showed that AccelADx may enable earlier detection of Alzheimer's-related decline outside of hospital settings.

Epsilogen

Epsilogen, a company developing cancer treatments that harness the unique properties of IgE antibodies— offering enhanced tumour penetration, potency, and prolonged activity— to target and destroy solid tumours, announced that it initiated a Phase 1b trial for MOv18 IgE in patients with platinum-resistant ovarian cancer⁵³ in December 2024. MOv18 IgE was the first therapeutic IgE antibody to enter the clinic and has successfully completed a Phase 1 trial in ovarian cancer.





Evox Therapeutics

Evox Therapeutics, a company developing engineered exosomes for targeted drug delivery, announced results⁵⁴ showing improved tissuespecific delivery using its technology. The study found that modified exosomes attached to antibodies could target tumours and deliver drugs directly to cancer cells. In animal models, this approach led to higher tumour uptake and reduced tumour growth compared with nontargeted treatments, highlighting the platform's potential to enhance the precision and effectiveness of cancer therapies.



F2G

F2G, a company developing the antifungal agent olorofim, announced the publication of Phase 2b data⁵⁵ showing positive therapeutic responses in patients with serious invasive fungal diseases treated with oral olorofim. The results include a 28.7% global response rate at 42 days (rising to 75.2% when stable disease is included) and acceptable safety in patients with few or no treatment options. These findings support olorofim's potential as a first-in-class therapy for difficult fungal infections and pave the way for further development.

Greywolf Therapeutics

Greywolf Therapeutics, a company developing antigen modulation therapies to address the source of immune dysfunction in oncology and autoimmunity, announced positive preliminary data⁵⁶ in June 2024 from its Phase 1/2 oncology trial of GRWD5769, a first-in-class ERAP1 inhibitor. The results provided early proof of mechanism by showing that the human immunopeptidome can be modulated with therapeutic intent in patients with solid tumours. In August 2025, the company dosed the first healthy volunteer in its Phase 1/2 trial of GRWD0715⁵⁷, another ERAP1 inhibitor, targeting the antigenic source of autoimmunity in axial spondyloarthritis (axSpA). The trial marks Greywolf's first programme in autoimmune disease, with its approach aimed at addressing the underlying cause of autoimmune disease activity by interrupting autoantigen presentation, potentially moving beyond symptom suppression toward durable disease control.



leso

Ieso, a digital mental health company, in collaboration with the NHS and NIHR BioResource, reported results from a trial⁵⁸ showing its AI-driven digital programme for generalised anxiety delivered outcomes comparable to human-delivered therapy while requiring up to eight times fewer therapist hours. The nine-week study of ~300 participants found 82% of participants experienced a clinically meaningful symptom reduction, with more than half improving within two weeks. The findings highlight the potential of AI to expand access to mental healthcare at scale, alleviating pressure on overstretched psychiatry services in healthcare systems like the NHS.



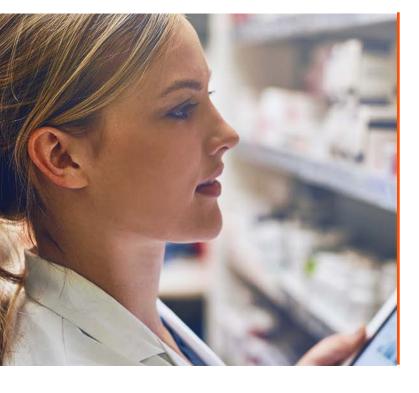
Kynos Therapeutics

Kynos Therapeutics, a company developing first-in-class small molecule inhibitors that block the KMO enzyme, a key mediator of inflammation, tissue injury, and immune dysfunction, to treat acute and chronic inflammatory conditions such as acute pancreatitis, announced positive results from the first-in-human Phase 1 study of its KMO inhibitor, KNS366⁵⁹ in April 2024.

Macomics

Macomics, a company focusing on macrophage-targeted therapeutics, announced details of its lead programme, MACO355, a first-in-class ligand independent-pan-LILRB monoclonal antibody for the treatment of cancer. Pre-clinical data⁶⁰ suggests MACO355 can reprogramme immunosuppressed macrophages, enabling them to recognise and attack tumour cells and activate T-cells even under suppressive conditions. This novel mechanism could enhance anti-tumour immune responses and help overcome resistance seen with some other existing therapies.





Microbiotica

Microbiotica, a company developing oral precision microbiome medicines, announced the dosing of the first patient⁶¹ in its Phase 1b trial of MB-310 in November 2024. The study is enrolling patients with mild-to-moderate ulcerative colitis across sites in the UK and Europe. Live bacterial therapies remain a nascent field, with only a handful of products ever reaching the clinic worldwide. By advancing MB-310, a defined consortium of eight gut commensals, Microbiotica is testing whether a precisely designed microbiome therapy can help induce remission without immunosuppression.

NodThera

NodThera, a company developing NLRP3 inflammasome inhibitors, reported in June 2024 that its oral candidate NT-0796 met the primary endpoint in a Phase 1b/2a trial⁶³ in obese subjects with elevated cardiovascular risk, producing rapid, clinically meaningful reductions in C-reactive protein. In June 2025, the first patients were dosed in its Phase 2 obesity trial⁶⁴, advancing NT-0796's development toward a first in class new oral, inflammationtargeted obesity therapy. This progression underscores NT 0796's potential to add a new approach to obesity treatment by addressing underlying inflammation rather than appetite alone. Success in these trials could open a path for an oral small-molecule alternative or complement to injectable peptides like GLP 1 agonists. The company has also been progressing its pipeline in Parkinson's disease: in August 2025 it announced the full publication of positive data from its Phase 1b/2a trial⁶⁵ of oral, brain-penetrant NLRP3 inhibitor NT-0796 which was shown to reduce key neuroinflammatory and inflammatory biomarkers in Parkinson's disease patients, marking what the company believes is the first clinical evidence of inflammasome inhibition in the brain. The findings support the notion that targeting NLRP3-driven neuroinflammation may be a promising disease-modifying strategy for Parkinson's.

Mission Therapeutics

Mission Therapeutics, a company developing first-in-class drugs that remove damaged mitochondria by inhibiting USP30, announced the launch of a trial⁶² for its potential Parkinson's treatment in March 2024. The Phase 1 trial for MTX325, a USP30 inhibitor that crosses the blood-brain barrier and enhances mitophagy while protecting dopamine releasing neurons, marks the first human study of a USP30 inhibitor targeting mitochondrial dysfunction in Parkinson's, potentially shifting treatment from managing symptoms to modifying disease progression.





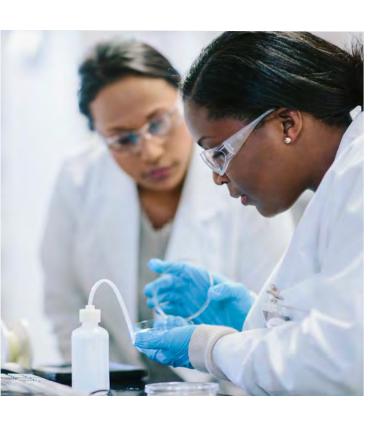
NRG Therapeutics

NRG Therapeutics, a company developing treatments for neurodegenerative diseases, announced <u>selection of its first development candidate</u>⁶⁶, NRG5051 in October 2024.

The oral, brain-penetrant inhibitor of the mitochondrial permeability transition pore (mPTP) is designed to protect neurons by blocking a key driver of cell death and inflammation in disorders such as Parkinson's and ALS. In September 2025, the company announced that <u>IND-enabling studies</u>⁶⁷ have been completed and NRG5051 is expected to enter first-in-human clinical studies in early 2026.

Nucleome

Nucleome, a company developing advanced genomics and 3D genome mapping platforms to decode non-coding "dark" regions of the genome, announced that its high-resolution genetic mapping <u>has</u> <u>identified a novel disease target for rheumatoid arthritis</u>⁶⁸ (RA). Using its proprietary machine learning and 3D genome technology, Nucleome pinpointed NTP-464 as a key gene linked to an RA-associated genetic variant. When researchers activated NTP-464 in a preclinical arthritis model, disease severity was reduced. These findings demonstrate how Nucleome's platform has the potential to move beyond traditional genetic studies to uncover how specific variants cause disease and identify new therapeutic targets for treatment.



OMass Therapeutics

OMass Therapeutics, a company developing small molecule drugs against well-validated but previously intractable or inadequately drugged complex protein targets announced positive pre-clinical data⁶⁹ for its MC2 receptor antagonist, OMS1620. The drug is designed to block excessive signalling of adrenocorticotrophic hormone (ACTH), a hormone that stimulates the adrenal glands, in conditions such as congenital adrenal hyperplasia (CAH). The pre-clinical data suggest potential for a best-in-class therapy that could help normalise hormone levels while reducing the need for high steroid doses.



Perspectum

Perspectum, a digital diagnostics company specialising in advanced imaging for liver and metabolic diseases, has announced⁷⁰ new research showing the predictive value of its MRI-based technology. Published in Nature Medicine, the large-scale UK Biobank study of more than 28,000 participants found that Perspectum's cT1 biomarker, derived from its LiverMultiScan platform, can identify people at increased risk of future heart and liver complications years before symptoms appear. The results highlight the potential of digital, non-invasive diagnostics to detect disease earlier, reduce the need for liver biopsies and support a more preventative approach to healthcare.

PhoreMost

PhoreMost, a company specialising in next-generation phenotypic screening and target discovery, announced in June 2024 that it has triggered the second milestone in its multi-project collaboration with Boehringer Ingelheim. Under this alliance, PhoreMost, leveraging its SITESEEKER screening platform, successfully identified and validated novel targets⁷¹ in a disease area of interest to Boehringer (notably retinal health). This accomplishment strengthens validation of PhoreMost's platform in uncovering new biology and supports progression of these targets toward first-in-class therapeutic development.



STORM Therapeutics

STORM Therapeutics is a company developing first-in-class therapies that target RNA-modifying enzymes to reprogramme cancer cell biology and immune response, announced that the first patient has been dosed in a Phase 1b/2 clinical study⁷² evaluating STC-15, its lead METTL3 inhibitor, in combination with LOQTORZI (toripalimab), a PD-1 immune checkpoint inhibitor developed by Coherus BioSciences and Junshi Biosciences. This trial is an important step in advancing RNA epigenetic modulation as a novel approach to cancer treatment, with the potential to enhance anti-tumour immune activity, overcome resistance to immunotherapy, and deliver more durable responses across a range of solid tumours.

Quell Therapeutics

Quell Therapeutics, a company engineering regulatory T cell therapies to restore immune balance in autoimmune, inflammatory, and transplant settings, has advanced QEL-001, its autologous CAR-Treg cell therapy, into the efficacy cohort of its Phase 1/2 LIBERATE trial73 after completing the initial safety stage. The therapy showed safety and durable engraftment with persistence in the liver graft for up to six months, allowing the trial to progress to testing tolerance after withdrawal of immunosuppressive drugs. Under its collaboration with AstraZeneca, the company announced74 in 2024 that AstraZeneca had selected a lead candidate from its Type 1 Diabetes CAR-Treg cell therapy programme and triggered a milestone payment. In 2025, it announced75 that AstraZeneca had selected a lead candidate from its inflammatory bowel disease programme and exercised its option to license the therapy for further development.

Resolution Therapeutics

Resolution Therapeutics, a company developing macrophage cell therapies that harness engineered, patient-derived macrophages to repair chronic liver damage and potentially eliminate the need for liver transplants, announced that it has dosed the first patient in its Phase 1/2 EMERALD trial of RTX001 in patients with end-stage liver disease. This first-in-human administration of an engineered regenerative macrophage therapy marks a key step in evaluating RTX001's potential to stabilise liver disease or reduce the need for transplantation in a condition where few therapeutic options exist.



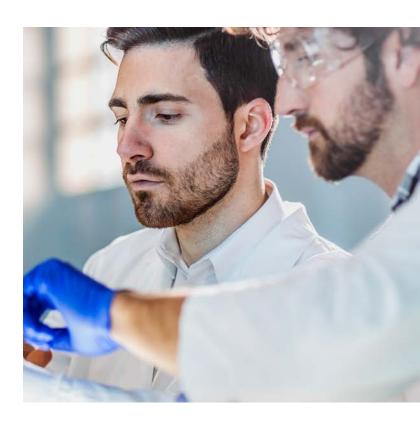


Sitryx

Sitryx, a company developing small molecule drugs that modulate immune cell metabolism to reverse inflammation and tissue damage, with a pipeline of disease-modifying therapies for chronic autoimmune and inflammatory diseases, announced in January 2024 that its collaboration partner Lilly commenced a Phase 1 first-in-human study⁷⁷ of Sitryx's compound SIT-011 for chronic autoimmune and inflammatory diseases.

SpyBiotec

SpyBiotech, a company developing a novel vaccine platform technology that can target infectious diseases, cancer, and chronic diseases, announced the completion of enrolment in its Phase 1 trial of SPYVLP01, a vaccine candidate targeting human cytomegalovirus (HCMV) using its Hepatitis B virus-like-particle platform (VLP) technology. This milestone brings SPYVLP01 closer to showing whether SpyBiotech's VLP approach can produce a safe and effective HCMV vaccine. This is an important early step toward an HCMV vaccine, an area where no approved option currently exists.





Ultromics

Ultromics, an AI echocardiography company reported results from a study⁷⁹ of nearly 10,000 patients showing that EchoGo Amyloidosis, a software-only tool that facilitates detection of cardiac amyloidosis from routine echocardiograms, significantly improves detection of the condition, underscoring its potential to shorten time to diagnosis and enable earlier referral for treatment.

Regulatory and product milestones

Several companies achieved important regulatory clearances and launched innovative products, highlighting their ability to turn world-leading research into commercial products which benefit patients and researchers.



bit.bio

bit.bio, a synthetic biology company coding human cells for novel cures, <u>launched ioAstrocytes in</u> <u>June 2024</u>⁸⁰, adding human astrocytes to its ioCells CNS toolkit. These induced pluripotent stem cell-derived ("iPSC-derived") cells are functional and reproducible, offering researchers a consistent source of astrocytes for co-culture with other brain cell types. By removing variability and long differentiation timelines, ioAstrocytes make it easier to build standardised brain models. This enables more reliable studies of neuroinflammation, neuronal interactions and disease mechanisms, and accelerates drug discovery in neuroscience.

Brainomix

Brainomix, an AI-powered diagnostic imaging company focused on stroke and lung disease, has received FDA clearance for e-Lung⁸¹, its CT-based software that quantifies lung disease features relevant to interstitial lung disease (ILD), including idiopathic pulmonary fibrosis. This is the company's first FDA clearance in lung imaging. The approval opens the US market for e-Lung and extends Brainomix beyond stroke into respiratory care, enabling more consistent, quantitative biomarkers that can support patient stratification and clinical trials in ILD.





CMR Surgical

CMR Surgical, a surgical robotics company, has received FDA approval⁸² via the de novo pathway for the Versius surgical system for cholecystectomy (gall bladder removal), its first US indication. This authorisation allows CMR to offer hospitals a modular robotic option in laparoscopic surgery, potentially broadening access to robotic procedures. In February 2025, the company announced that its Versius robot had been used in over 30,000 surgical cases globally⁸³, across urology, general surgery, gynaecology and thoracic surgery.

CN Bio

CN Bio, a life sciences tools company developing organ-on-a-chip systems, has launched the PhysioMimix Bioavailability Assay Kit⁸⁴: Human 18, designed for its multi-organ platform to profile human oral drug bioavailability earlier in development. The kit aims to improve early pharmacokinetic (PK) decision-making by helping teams select stronger candidates, better inform in vivo study design, and reduce reliance on animal testing, a key global regulatory objective.



Huma

Huma, a digital health company with a disease-agnostic software-as-a-medical-device (SaMD) platform, announced the <u>launch of its Huma</u> Cloud Platform with GenAI integrations in July 2024⁸⁵, designed to reduce development time for digital health projects from years to days. In August 2024, Huma <u>secured Class C</u> certification for its SaMD platform in India⁸⁶. In April 2025, the platform <u>received Class II</u> medical device certification from Health Canada⁸⁷, enabling regulated usage for remote patient monitoring across diverse populations and AI-based functions.



ONI Bio

ONI Bio, a life sciences tools company specialising in super-resolution microscopy, has launched the Aplo Scope⁸⁸, a single-molecule super-resolution microscope for measuring molecular interactions within cells and tissues. By providing ready-to-use single-molecule capabilities, Aplo Scope can help laboratories quantify interactions and heterogeneity without bespoke setups, supporting applications from drug discovery to spatial biology.

Ori Biotech

Ori Biotech, a cell and gene therapy manufacturing technology company, has <u>unveiled its IRO platform</u> <u>at ISCT 2024</u>⁸⁹, describing it as a next-generation system designed to address key manufacturing challenges. The platform is intended to standardise and scale autologous cell and gene therapy (CGT) manufacturing, an area where bottlenecks continue to limit throughput, cost efficiency, and ultimately patient access. In early 2025, the company announced that it has <u>begun delivering its IRO</u> <u>biomanufacturing system</u>⁹⁰ to CDMOs and a global pharmaceutical company. In September 2025, the company announced its IRO platform received <u>Advanced Manufacturing Technology designation from</u> the FDA⁹¹.



Purespring Therapeutics

Purespring Therapeutics, a company developing gene therapies for kidney diseases, advanced its lead programme PS-002 for primary IgA nephropathy (IgAN) through a series of regulatory milestones in 2025.

In April, PS-002 was granted orphan drug designation by the European Medicines Agency (EMA)⁹², providing development incentives for this rare kidney disease. In July, the US FDA cleared Purespring's Investigational New Drug (IND) application⁹³, enabling initiation of a Phase I/II trial. In September, the company also received Clinical Trial Application (CTA) approval in the UK⁹⁴, with the first patient expected to be enrolled before the end of 2025.



Refeyn

Refeyn, a company developing mass photometry instruments for single-molecule bioanalysis, announced in May 2025 that it had reached 500 installations worldwide95. According to the company's announcement, the systems are now used in more than 30 countries and have been cited in over 1,000 scientific publications. These publications illustrate the breadth of applications of Refeyn's mass photometry and macro mass photometry platforms in the label-free characterisation of biomolecules and viral particles in solution in their native state, including protein analysis, bispecific antibody byproducts and aggregates, lipid nanoparticles, direct measurement of mRNA length, and quantification of adenoassociated virus (AAV) vector capsids.

Touchlight

Touchlight, a synthetic DNA manufacturer using enzymatic doggybone DNA (dbDNA) technology, has reported receiving a world-first MHRA GMP licence⁹⁶ for its dbDNA manufacturing facility, including a Manufacturer's Authorisation for Investigational Medicinal Products (MIA(IMP)), with reported capacity of more than 8 kg per year across 11 suites. This regulatory milestone expands UK capacity for enzymatically produced DNA used in viral vectors, mRNA, genome editing and DNA vaccines, helping to ease upstream supply constraints for advanced therapies.



Ultromics

Ultromics has <u>obtained FDA Breakthrough</u>
<u>Device clearance</u>⁹⁷ for EchoGo Amyloidosis and was enrolled in the FDA Total Product Lifecycle Advisory Programme pilot.

This makes EchoGo Amyloidosis the first commercially available AI-based tool capable of detecting cardiac amyloidosis using just a single standard echocardiographic clip.

Strategic partnerships and collaborations

Future 50 companies entered into a series of collaborations with large pharma and medical device corporates, representing important third-party validation to their research efforts and highlighting the UK's critical role as the engine of global life sciences R&D.



Alchemab Therapeutics

Alchemab Therapeutics entered into a collaboration with Lilly⁹⁸ in January 2025 to develop novel amyotrophic lateral sclerosis (ALS) therapies. Building on this agreement, in March 2025, Alchemab entered into a licensing agreement with Lilly for ATLX-1282⁹⁹, Alchemab's first-in-class IND-ready programme for amyotrophic lateral sclerosis (ALS) and other neurodegenerative conditions, representing an important endorsement to the company's unique approach to drug discovery.

AviadoBio

AviadoBio entered into an exclusive option and licence agreement with Astellas¹⁰⁰ in October 2024 for AVB-101 targeting frontotemporal dementia and other indications. The deal puts a global pharma partner behind AviadoBio's lead programme, strengthening its path to late-stage development and potential commercialisation.





bit.bio

bit.bio announced the first project in a multiyear collaboration¹⁰¹ with The Michael J. Fox Foundation in March 2024 to generate human cell products for Parkinson's research and drug discovery. The partnership broadens the adoption of bit.bio's platform in neurodegeneration and anchors it with a prominent funder in Parkinson's research.

Brainomix

Brainomix launched a strategic partnership with Boehringer Ingelheim¹⁰² in July 2024 to support drug development in fibrosing lung disease; in February 2025 it partnered with Medtronic¹⁰³ to enhance stroke care across Western Europe; and in June 2025 it formed a US partnership with 3DR Labs¹⁰⁴ to advance stroke care using Brainomix 360 Stroke. Together these collaborations embed Brainomix's AI across pharma and care delivery, expanding clinical reach and commercial routes.



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CN Bio

CN Bio announced a partnership with Altis Biosystems¹⁰⁵ in January 2024 to integrate Altis' RepliGut model with CN Bio's PhysioMimix Liver-on-a-chip to create a dual Gut/Liver model for advanced ADME* studies. The integration improves in-vitro-to-in-vivo translatability for oral bioavailability, reinforcing CN Bio's position in predictive preclinical testing.

*Absorption, distribution, metabolism and excretion studies—a standard part of early drug testing that looks at how a medicine is processed in the body

Huma

Huma, a digital health company powering companion apps and remote patient monitoring, launched an innovative bladder-cancer treatment companion app¹⁰⁶ with Merck KGaA in the UK in April 2024, and in January 2025 announced a strategic collaboration with Pfizer¹⁰⁷ to launch the Huma Cloud Platform for haemophilia in the US. These alliances expand Huma's regulated platform across oncology and rare-disease care, deepening its footprint with global pharma.

Mestag Therapeutics

Mestag Therapeutics, a biotech harnessing fibroblast-immune interactions, entered a licence and research collaboration with MSD¹⁰⁸ (Merck & Co., Inc.) in October 2024 to deploy its Reversing Activated Fibroblast Technology (RAFT) platform to identify novel inflammatory-disease targets. Separately, under its multi-year target discovery collaboration with Johnson & Johnson announced in 2021, Mestag disclosed in December 2024 that J&J has exclusively licensed 109 a novel, undisclosed target identified using RAFT. Both agreements represent strong third-party validation of Mestag's discovery engine and highlight its potential to translate novel targets into therapeutic programmes.





MiNA Therapeutics

MiNA Therapeutics, a company pioneering small-activating RNA (RNAa) medicines, announced a research collaboration¹¹⁰ with an exclusive licensing option with Nippon Shinyaku in April 2024 to discover and develop RNAa therapeutic candidates for rare neurodegenerative diseases. The partnership extends MiNA's RNAa platform into central nervous system (CNS) indications with a commercial path via a Japanese pharma partner.

Nucleome

Nucleome announced a strategic collaboration with Johnson & Johnson¹¹¹ in October 2024 to investigate the genetic factors underlying autoimmune diseases. Through this partnership, Nucleome will use its proprietary technology to identify the specific genes and biological pathways that link genetic variation to disease, with the aim of accelerating the discovery of new treatment targets.





OMass Therapeutics

OMass Therapeutics announced in September 2025 that it had entered into an exclusive collaboration and licence agreement with Genentech¹¹² (a member of the Roche Group) for its preclinical oral programme in inflammatory bowel disease (IBD). Genentech will take the programme forward into clinical development and commercialisation, providing external validation of OMass's discovery approach and a pathway to advance a novel mechanism in a condition with limited treatment options.



Ori Biotech

Ori Biotech agreed a collaboration with Fresenius Kabi¹¹³ in December 2024 to integrate its IRO platform with the Cue and Lovo processing systems, enabling closed, scalable CGT manufacturing workflows. The company also partnered with MaxCyte¹¹⁴ to combine its IRO system with MaxCyte's ExPERT/Flow Electroporation platform to boost gene-edited T cell yield and shorten manufacturing timelines. Demonstrated integration with established systems and new collaborations aimed at optimising gene-edited cell therapy manufacturing strengthen Ori Biotech's positioning as a flexible backbone for end-to-end CGT production.

Peptone

Peptone, a company leveraging machine learning and biophysics expertise to develop therapeutics targeting intrinsically disordered proteins (IDPs), established a strategic partnership with Evotec¹¹⁵ in May 2025 to scale IDP-targeted drug discovery, and in June 2025 unveiled PepTron-o with NVIDIA¹¹⁶, an ensemble-first structure-prediction approach for disordered proteins. Together these moves combine industrial discovery capacity with cutting-edge AI modelling, accelerating Peptone's IDP pipeline.



Proximie

Proximie, a surgical-intelligence platform connecting operating rooms, <u>partnered with Distalmotion</u>¹¹⁷ in January 2024 to support global deployment of the Dexter robotic surgery platform; in July 2025 it <u>signed a US partnership with HistoSonics</u>¹¹⁸ to enhance adoption of the Edison system for liver tumours; and in July 2025 it <u>partnered with Imperative Care</u>¹¹⁹ to support the Telos robotic-assisted thrombectomy platform. These collaborations extend Proximie's platform across leading medtech ecosystems, deepening integration into surgical workflows and data capture.



Synthace

Synthace, the digital experiment-design platform for life-science R&D, and SPT Labtech announced a collaboration in September 2024¹²⁰ to make Design of Experiments more accessible by linking Synthace's DOE automation to SPT Labtech's dragonfly discovery dispenser. The collaboration streamlines assay optimisation and shortens discovery cycles, expanding Synthace's role inside automated labs.

Touchlight

Touchlight has signed a non-exclusive <u>licence agreement with GlaxoSmithKline</u>¹²¹ (GSK) for use of its proprietary enzymatic doggybone DNA (dbDNA) technology in mRNA-based product development. The deal enables GSK to access rapid, scalable GMP-grade DNA production for mRNA vaccine manufacturing: a faster and potentially more efficient alternative to traditional plasmid methods. This partnership marks an important validation of Touchlight's platform by a global biopharmaceutical company with a major vaccines business. By enabling accelerated production of high-purity DNA templates, it could significantly speed up manufacture of multivalent mRNA vaccines and help de-risk supply chains for vaccines targeting seasonal epidemics and pandemic threats.



Ultromics

Ultromics entered into a partnership with Pfizer¹²² in January 2024 to expedite validation and FDA clearance of its EchoGo algorithm for earlier detection of cardiac amyloidosis. The backing of a global biopharma partner supports regulatory progress and clinical adoption in a hard-to-diagnose cardiovascular condition.

Fundraising:

Between 31 October 2023 and 2 September 2025, companies within the Future50 sample raised an aggregate of around £970 million across 21 deals in total, based on data from Pitchbook and company press releases. Half of the deals were Series B/Series B extensions, with two Series A, one Series A extension, two Series C, one Series D, and a five unspecified series of raises. The median deal size was £40m.

Figure 2

Funds raised by deal, by series (£m) (Oct '23–Sept '25)



Source: Pitchbook and company press releases

Future 50 survey results

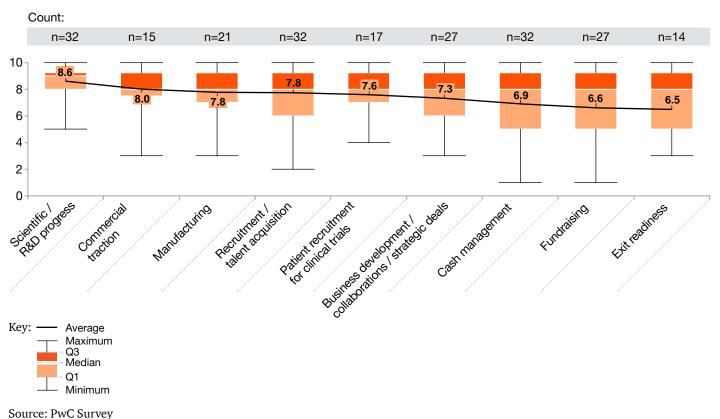
We surveyed the Future50 companies to hear how they have been progressing, get their perspectives on the opportunities and challenges, areas they are most optimistic about, and what they would perceive as most impactful in terms of public policy support for the sector.

Question 1: Areas of company progress

We started out by asking each of the Future50 companies surveyed about areas of their business where they have experienced the most success and faced the most challenges.

Figure 3

'Thinking about the key elements that impact your business growth, for the following nine areas, could you indicate which areas are you seeing the most success in, and which areas are proving to be most challenging? Where 10 is very successful and 1 is very challenging.



Scientific / R&D progress

Echoing the broad range of milestones disclosed in the public domain as shown in the section Clinical / research advancements, companies were unanimous in reporting scientific / R&D progress (n=32) as the number one area where their businesses were most successful, continuing the theme identified from the original UK Life Sciences Future50 report, with company successes in breakthrough science remaining a key UK strength and globally leading indicator.

From NodThera's first clinical proof of brain-penetrant NLRP3 inhibition in Parkinson's disease signalling the potential for a new disease-modifying strategy, to Greywolf's expansion of its ERAP biology platform beyond oncology into autoimmunity to target the root cause of autoimmune disease and AviadoBio's first direct gene therapy delivery into deep brain regions, as well as the suite of other company developments in he section Clinical / research advancements, it is clear why this was the highest scoring area.

Commercial traction

Whilst not relevant for many development-stage companies in the sample (hence the lower respondent sample of n=15 for this question), commercial traction ranked as the second highest scoring area.

As shown in the section Regulatory and product milestones, there were numerous new product launches within the Future50 cohort, from bit.bio's launch of ioAstrocytes, which facilitates the creation of standardised human brain cell models, to ONI Bio's Aplo Scope, which unlocks single-molecule imaging for spatial biology, and Ori Biotech's IRO platform, which streamlines and standardises cell and gene therapy

manufacturing. These developments, together with the many other advances highlighted in the section Regulatory and product milestones demonstrate Future50 companies' continued delivery of technologies with transformative potential, spanning applications from drug discovery to the manufacturing of advanced therapies.

Manufacturing

The topic of manufacturing covered activities from the clinical-stage manufacture of investigational therapies for trials to the pilot- or commercial-scale production of products such as research tools or medical devices. Ultimately, this area also received a high score across survey respondents, with reports of strong progress.

Manufacturing for clinical trials will often come with challenges, particularly in advanced therapeutics where there is a need to balance consistent quality, regulatory compliance, and scalability in highly complex, individualised processes. Many respondents reported working effectively with UK or international CDMOs to secure GMP-grade materials, or de-risk manufacturing scale-up. Indeed, the UK continues to benefit from a specialised CDMO base, spanning viral-vector, plasmid, microbial, and biologics capabilities, that has expanded in recent years. Notable examples include Pharmaron's ongoing Liverpool expansion¹²³ supported by the UK Government's Life Sciences Innovation Manufacturing Fund, and Lonza's planned relocation and expansion of its UK biologics site 124 to Thames Valley Park near Reading, supported by a £30 million government grant.

Recruitment / Talent acquisition

When discussing talent acquisition, the survey respondents unanimously emphasised the strong scientific talent pool in the UK, reporting that they found it easy to attract and retain scientific talent. For Senior Executive recruitment, responses were more mixed, with many companies noting success in attracting C-suite executives, albeit some also referenced difficulties in finding the right level of experience, whether in terms of scientific experience for a Chief Scientific Officer / Chief Medical officer in a particular niche, or the CEO and CFO experienced in scaling an organisation to its next phase of development and preparing it for a strategic transaction or an IPO. Challenges around recruiting from outside the UK were noted in some instances, whether in the context of having to compete with the compensation levels of US biotechs or the additional complexities of visa sponsorships introducing complexities to hiring from Europe.

Patient recruitment for clinical trials

Challenges around patient recruitment were recognised by some survey respondents. Pressures on the NHS, including access to research staff, navigating complex protocols, as well as recent strikes and cyberattacks were noted as contributing factors to delays.

Despite these hurdles, many companies expressed confidence in how they had managed to mitigate the impact. In particular, respondents pointed to the importance of building strong relationships with key hospitals and leading physicians. In the UK, this typically involves working with NHS centres of excellence and experienced Principal Investigators, whose early involvement in trial design and patient engagement is seen as critical to overcoming recruitment hurdles.

Box 10: Clinical trial statistics

Statistics published by the <u>ABPI in its 2024 report</u>¹²⁵ on clinical trials echo these challenges with clinical trial recruitment:

- Between 20% and 30% of industry trials in the UK didn't recruit the agreed number of participants within the planned timeframe in 2024 according to the <u>ABPI's report</u>¹²⁶.
- The ABPI also reported ¹²⁷ that in 2023, 74% of the UK clinical research workforce reported that it had become more difficult to deliver studies over the prior 18 months, citing NHS pressures, staff vacancies, and lack of protected research time.

The policy paper published in August 2025¹²⁸ by the Department of Health & Social Care outlines a series of steps taken to address these:

- The National Institute for Health and Care Research (NIHR)'s Be Part of Research registry has surpassed one million registered volunteers¹²⁹ as of March 2025, with a national campaign launched in June 2025 to reach two million by March 2026. The registry links with NHS data to help match patients with suitable studies more quickly, broadening participation and improving recruitment efficiency.
- The roll-out of the <u>NHS Research Secure Data</u>
 <u>Environment (RSDE)</u>¹³⁰ network has expanded safe access to de-identified health data for researchers, supporting faster identification of eligible participants and enabling more inclusive recruitment approaches.

Business development / collaborations

On average, business development / strategic collaborations scored relatively lower compared with some of the other areas assessed in Question 1. However, this appears to reflect a more mixed view on progress with 19 out of 27 respondents scoring between 7 to 10, with lower scores reflecting the need to develop more data to support meaningful discussions or seeing this area as lower priority at the time.

Ultimately, as shown in the section Strategic partnerships / collaborations, the volume and calibre of partnership activity across the Future50 cohort underscore that UK life sciences companies continue to attract significant interest from large global companies. From Alchemab's agreements with Lilly, to Mestag's partnerships with MSD and Johnson & Johnson, OMass' collaboration and licence agreement with Genentech and Touchlight's licensing deal with GSK as well as the many other collaborations listed previously, companies in the Future50 are continuing to validate their technologies and extend their impact through partnerships which can support non-dilutive funding, accelerate clinical development, and expand the global reach of their innovations.

Cash management and fundraising

Unsurprisingly, cash management and fundraising were among the lower-scoring areas, reflecting the difficult early-stage fundraising environment of recent years.

Importantly, many of the Future 50 survey respondents citing challenges in these areas also reported successfully navigating these, managing to extend cash runways without a meaningful reduction

in activities, or through pragmatic prioritisation of their pipeline. A number of interviewees explained that while managing runway at times came with difficult decisions, they were overall proud of how they handled these hurdles, demonstrating agility, discipline, and taking proactive measures to bolster financial resilience.

A number of the companies were successful in closing new funding rounds, receiving support from existing investors and / or attracting new investors, as shown in Figure 2. In the survey responses, commentary on fundraising reflected mixed experiences, with signs for optimism as well as continued challenges equally noted by the interviewees. Some interviewees referenced impressions of an improving fundraising environment and provided examples of inbound interest facilitating new raises relative to the experience of prior years. Others shared perspectives on a continuingly muted environment, lengthy processes, challenges around valuation, or having to scale down expectations in terms of quantum raised.

Indeed, the BIA's financing reports¹³¹ show that following the peak of 2021, UK biotech venture capital funding fell back significantly in 2022–2023 as global markets reset. Momentum returned in 2024, when £2.3 billion was secured, a 79% uplift on 2023, though the BIA cautioned that much of this was concentrated in a handful of large rounds. The strong start to 2025 has reinforced this pattern: by midyear, UK biotech companies had already raised £1.23 billion in VC, almost matching the total for all of 2023. Encouragingly, if annualised, this pace puts the sector on track to surpass 2024's total in terms of VC funding raised.

Figure 4

Total venture capital raised (BIA) (£b)



Source: BIA data as published on biotechfinance.org

Looking at the 15 largest VC deals over 2024–H1 2025, as reported by the BIA, there is clear concentration, with these deals representing over 50% of the total funds raised over the period. The breadth of fields represented by these companies is remarkably diverse, ranging from cancer, metabolic and neuropsychiatric therapeutics to neuromodulation and next-generation protein manufacturing. The dominance of Series A and Series B rounds continues to illustrate the UK's strength in early-stage financing, but also its relative weakness in attracting later-stage scale up capital, an area the Mansion House reforms aim to address.

Table 1BIA Finance report: Top 15 VC deals over 2024–H1 2025

Company	Brief	Deal size £m	Date	Round
Isomorphic Labs	AI/AlphaFold-based platform for de novo drug design	£448.9	Mar-25	N/A
Verdiva Bio	Oral & injectable GLP-1 agonists and amylin agonists	£327.2	Jan-25	Series A
Ottimo Pharma	Bispec. / dual-target antibodies for cancer immunotherapy	£110.5	Dec-24	Series A
Draig Therapeutics	Precision neuromodulators for neuropsych. disorders	£107.0	Jun-25	Seed / Ser. A
Pheon Therapeutics	Next-gen antibody-drug conjugates targeting solid tumors	£95.7	May-24	Series B
CellCentric	Small-molecule epigenetic modulator for oncology	£90.3	May-25	Series C
Myricx Bio	Novel ADC payloads (NMT inhibitors) for cancer	£89.8	Jul-24	Series A
Purespring Therapeutics	Podocyte-targeted gene therapy for kidney disease	£80.0	Oct-24	Series B
Amber Therapeutics	Closed-loop neuromodulation for urinary / bladder control	£78.7	Jun-24	Series A
F2G	Novel antifungals for invasive fungal infections	£76.4	Sep-24	Series H
ViceBio	Molecular Clamp vaccine tech for respiratory viruses	£76.0	Sep-24	Series B
SynOx	mAb for macrophage-driven rare tumours and inflammation	£72.6	Apr-24	Series B
Resolution Therapeutics	Regenerative macrophage therapy for fibrosis/inflammation	£63.5	Oct-24	Series B
Maxion Therapeutics	"Knotbody" proteins targeting ion channels / GPCRs	£58.0	Mar-25	Series A
Nuclera	Rapid protein prototyping solutions via digital microfluidics	£57.0	Oct-24	Series C

Source: BIA UK Biotech Financing reports, 2024, Q1 2025, Q2 2025

Companies in the Future 50 cohort

Exit readiness

Exit readiness, perhaps unsurprisingly, was not top of the list in terms of company priorities and hence received a lower score in terms of progress made in that area. Reflecting the stage of development of the respondents within the Future50 sample, companies remain focused on working towards key value inflection points—whether in terms of clinical data in therapeutics or commercial traction within life sciences tools, tech bio, or medical devices.

While for early-stage businesses, exit-readiness may appear to be a longer-term milestone, early engagement with potential acquirers can provide real strategic value. Conversations with pharma or larger industry players can offer valuable insight into the

types of data they consider critical to derisking an asset. In turn, this can help management teams refine development plans and align milestones with future partnering or acquisition dynamics.

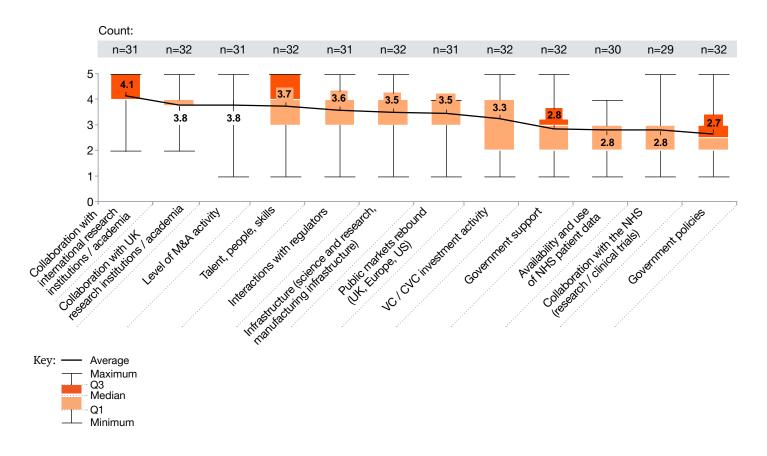
Approaches to exit readiness vary, particularly in the early-stage life sciences sector where near-term priorities often centre on achieving key de-risking milestones. While companies that invest in readiness measures—such as aligning financials with public-market expectations—may be better positioned to respond when market opportunities arise, the appropriate level of preparation will depend on each company's circumstances and pace of execution.



Question 2: Areas of optimism for the sector

We also explored what aspects of the life sciences ecosystem the Future 50 companies are most optimistic about, both from a UK and from an international perspective, including their outlook for the financing and the M&A environment. Respondents were asked to rate their level of optimism by area on a scale of 1–5.

Figure 5'On a scale of 1-5, how optimistic do you feel about the following aspects of the UK life sciences sector?'



Source: PwC Survey

Box 11: SpyBiotech

SpyBiotech, a company developing novel vaccine platform technologies, announced 132 in May 2024 that it has entered into a sponsored research agreement with the University of Oxford to develop a vaccine against Epstein-Barr virus (EBV). The collaboration will utilise SpyBiotech's proprietary SPYVLP vaccine platform, which is based on a protein "superglue" technology that binds antigens to vaccine delivery platforms in a way that minimises delivery risk and enhances immunogenicity and efficacy. Under the agreement, SpyBiotech will provide Oxford researchers with access to the SPYVLP platform, while the Oxford team will advance the programme towards a Phase 1 clinical trial to be conducted through the University. This partnership aims to address the significant unmet need for an effective EBV vaccine and demonstrates the potential of SpyBiotech's technology to enable safe, potent and scalable vaccine development.

Collaboration with international and UK research institutions and academia

The highest scoring two questions in terms of areas of optimism pertained to collaborations with research institutions and academia—both within the UK and internationally. This optimism around collaboration opportunities within the UK's academic research network reflects the fact that many Future50 companies are spinouts from, or maintain strong links with, leading UK academic institutions such as the Universities of Oxford, Cambridge, Edinburgh, Manchester, Bristol, Dundee, and Warwick, along with Imperial College London, King's College London, and University College London, as well as renowned research organisations including the Wellcome Sanger Institute, Babraham Institute, and Cancer Research UK.

The respondents were optimistic about their ability to collaborate with both key UK institutions such as Cancer Research UK, the Sanger Institute, the Institute of Cancer Research, the UK Biobank, as well as global research institutions and academia.



Box 12: Peptone

Peptone, a company leveraging machine learning and biophysics expertise to develop therapeutics targeting intrinsically disordered proteins (IDPs), announced a collaborative research agreement with the **Institute** of Oncology Research in Switzerland (Bellinzona)¹³³. The partnership combines Peptone's expertise in biophysics, machine learning, and HDX-MS technology with IOR's understanding of prostate cancer biology to uncover novel therapeutic targets. The collaboration brings together complementary scientific strengths to advance drug discovery against complex and previously untreatable cancer targets.

As demonstrated by the survey responses, collaborations with international academic and research institutions continue to be a cornerstone of UK life sciences innovation. Companies emphasised the importance of these partnerships, including with top-tier global organisations such as The University of Texas MD Anderson Cancer Centre, the Memorial Sloan Kettering Cancer Centre, the Bill and Melinda Gates Foundation, the Mayo Clinic or the Institute of Oncology Research in Switzerland. From the perspective of the Future50 survey respondents, the UK's reputation as a life sciences powerhouse remains intact, with its strong academic ecosystem providing the solid foundation for these international partnerships, reaffirming the country's position as a leader in global life sciences.

M&A activity

The level of M&A activity, including licensing and collaboration deals, was one of the areas respondents were most optimistic about. Indeed with many major drug patents set to expire over the coming years—the "patent cliff," which will see blockbuster drug revenues fall as generics and biosimilars enter the market—large pharmaceutical companies are under increasing pressure to replenish their pipelines. M&A activity over 2024—2025 highlights the draw of the UK's highly innovative life sciences ecosystem in terms of generating M&A interest from global organisations.

Box 13: Kynos

Of the Future50 sample, Kynos, the developer of first-in-class small molecule KMO* inhibitors, was acquired in 2024. Kynos was founded by Professors Damian Mole and Scott Webster at the University of Edinburgh. Kynos' programmes were based on academic work of Professor Mole on the KMO target and built on a prior collaboration between the University and GSK, led at the University by Kynos' founders, which identified and optimised small molecule inhibitors of KMO. The company has been backed by investment from Epidarex Capital, IP Group and Scottish Enterprise. In October 2024, the company announced that it has been acquired by clinical stage biopharmaceutical company Dr. Falk Pharma GmbH, which will continue to develop Kynos' KMO inflammation inhibitors for the treatment of acute pancreatitis.

*The kynurenine 3-monooxygenase (KMO) enzyme is important in inflammation, immunity and metabolism.



Box 14: ieso

Of the Future 50 cohort, ieso's UK operations were <u>acquired</u>¹³⁵ in 2025. Ieso is a digital healthcare company developing new digital therapy products to deliver clinical-grade care at scale, backed by investors including Molten Ventures and IP Group. The Swedish digital therapy company Mindler acquired ieso's UK operations, which provides mental health services to the NHS, with its online cognitive behavioural therapy services available to more than 20 million adults in the UK. The existing NHS contracts held by ieso Digital Health UK (covering several integrated care systems and a national contract in Scotland) will continue under the new ownership structure.

Data from S&P CapitalIQ* suggests broadly similar levels of M&A activity relative to 2024 in terms of deal volume (2025 YTD annualised). In terms of deal value, 2025 figures are heavily impacted by Verona Pharma's acquisition by MSD (a subsidiary of Merck &Co.). Within the subset of deals where transaction values were available, deal value showed significant concentration, with the top 3 largest deals accounting for 72% and 88% of total deal value in 2024 and YTD 2025 respectively.

Table 2:

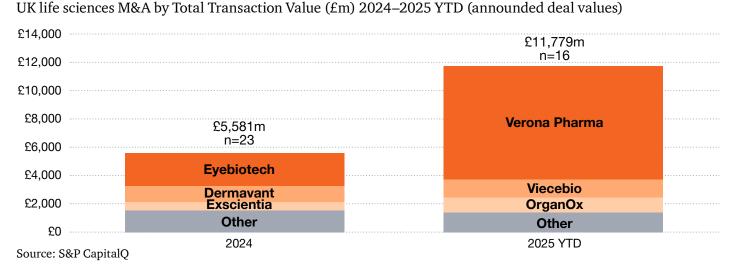
Period	2024	2025 YTD	
Deal volume (#)	73	50	
of which: Deal value announced			
Deal volume (#)	23	16	
Deal value (£m)	£5,581	£11,779	
of which:			
First largest deal	Eyebiotech £2,360	Verona £8,078	
Second largest deal	Dermavant £1,125	Vicebio £1,185	
Third largest deal	Exscientia £560	OrganOx £1,108	
3 largest as % of total deal value	72%	88%	
Other	£1,536	£1,409	

Source: S&P CapitalQ

^{*}Data from S&P CapitalIQ. All transactions announced date: 1 January 2023 – 26 September 2025. Transaction type: M&A. Primary industry classification: Pharmaceuticals, Biotechnology and Life Sciences, Healthcare Equipment, Healthcare Supplies, Healthcare Technology. Primary location of Target: UK. Percentage sought: greater than 50%. Transaction status: announced or closed.

Figure 6

LIV life estimates M9 A by Total Transaction Value (Cm) 2024, 2025 VTD (announded deal value)



A number of large transactions over 2024–2025, such as Merck's acquisition of Eyebiotech and Verona Pharma, or Sanofi's acquisition of Vicebio, demonstrate that global pharmaceutical companies continue to look to the UK-based life sciences ecosystem to strengthen their R&D pipelines.

Table 3Top 10 deals by Total Transaction Value (£m)

2024			2025 YTD		
Target	Buyer	Deal Value (£m)	Target	Buyer	Deal Value (£m)
1 Eyebiotech	Merck & Co.	£2,360	2 Verona Pharma	MSD (Merck & Co.)	£8,078
Dermavant Sciences	Organon & Co.	£1,125	3 Vicebio Limited	Sanofi	£1,185
Exscientia	Recursion Pharmaceuticals	£560	4 OrganOx Limited	Terumo	£1,108
Med. device components business (Johnson Matthey)	Montagu Private Equity LLP	£550	Life Molecular Imaging	Lantheus Radiopharmaceuticals	£642
Vectura	Molex Asia Holdings	£298	Alliance Pharma	Baring AM, Rothschild, DBAY	£352
Benchmark Genetics	Novo Holdings	£260	Beckley Psytech	Atai Life Sciences	£179
Endomagnetics	Hologic, Inc.	£250	Oxford Instruments NanoScience	Quantum Design International	£63
Intelligent Ultrasound	Surgical Science Sweden	£43	Antev Limited	Medicus Pharma	£56
Clin. AI business (Intelligent Ultrasound)	GE HealthCare Technologies	£41	Summit Veterinary Pharmaceuticals	Swedencare	£45
Lumeon	Health Catalyst	£36	Roquefort Therapeutics	Coiled Therapeutics	£30

Source: S&P CapitalQ

1 EyeBio is a UK-based ophthalmology biotech, founded in 2021 and headquartered in London. The company was co-founded by SV Health Investors, led by Dame Kate Bingham, who served as Chair of the Board, alongside scientific co-founders David Guyer and Tony Adamis—both veterans of the eye disease field, with Adamis helping pioneer VEGF-targeted therapies and Guyer bringing leadership experience from Eyetech and Iveric Bio. EyeBio's lead programme, Restoret, is a novel tetravalent, tri-specific antibody designed to restore the blood-retinal barrier by modulating the Wnt signaling pathway, offering a new mechanism beyond standard anti-VEGF strategies. In early trials (Phase 1b/2a), Restoret showed positive signals in patients with diabetic macular oedema and wet age-related macular degeneration, positioning it for pivotal studies. In May 2024, Merck announced the acquisition of EyeBio¹³⁶ for \$1.3 billion upfront plus up to \$1.7 billion in milestones.

2 Verona Pharma is an excellent example of British Biotech success, with its \$10 billion acquisition by Merck¹³⁷ in July 2025. Whilst chronic obstructive pulmonary disease (COPD) remains a significant global health burden, there have been limited changes in the standard of care over the last few decades. Verona Pharma's lead product, Ohtuvayre, became the first new class of inhaled therapy for COPD in over 20 years. Ohtuvayre achieves its bronchodilator and anti-inflammatory effects via the selective, dual inhibition of phosphodiesterase (PDE)3 and PE4, which has long been considered a promising mechanism but was abandoned by competitors due to challenges of systemic toxicity. Verona developed an inhaled formulation which minimises systemic exposure and delivers the drug to the lungs effectively, offering a treatment option for patients who remain symptomatic post-bronchodilation.

3 Vicebio is a UK-based biotech, headquartered in London, and founded by Medicxi in 2021 to develop next-generation vaccines for respiratory viruses using proprietary Molecular Clamp technology, discovered at the University of Queensland. The lead candidate, VXB-241, is a bivalent RSV / hMPV vaccine designed using Molecular Clamp technology. By locking viral surface proteins in their pre-fusion state—the form most visible to the immune system during natural infection—the Molecular Clamp design aims to elicit a stronger and more protective immune response, making the vaccine potentially more effective than conventional approaches. This technology also allows formulation of fully liquid multivalent vaccines that can be stored at standard refrigerator temperatures (2-8 °C), avoiding freezing or lyophilisation and simplifying manufacturing and distribution. In exploratory Phase 1 trials in older adults, VXB-241 has demonstrated a favourable safety and tolerability profile, supporting further development. In July 2025, Sanofi announced the acquisition of Vicebio 138 for \$1.15 billion upfront plus up to \$450 million in milestone payments.

4 OrganOx was founded in 2008 as an Oxford University spin-out, by engineering professor Constantin Coussios and transplant surgeon professor Peter Friend. Originating from Oxford's Institute of Biomedical Engineering and the Nuffield Department of Surgical Sciences, the company is pioneering advances in organ preservation technology. Its signature technology is metra, a normothermic machine perfusion (NMP) platform for donor livers that maintains organs in a warm, metabolically active, physiologic state outside the body (rather than standard cold-storage). OrganOx's approach enables continuous delivery of oxygen, nutrients, medications and monitoring of key biomarkers, giving transplant teams a real-time functional assessment of

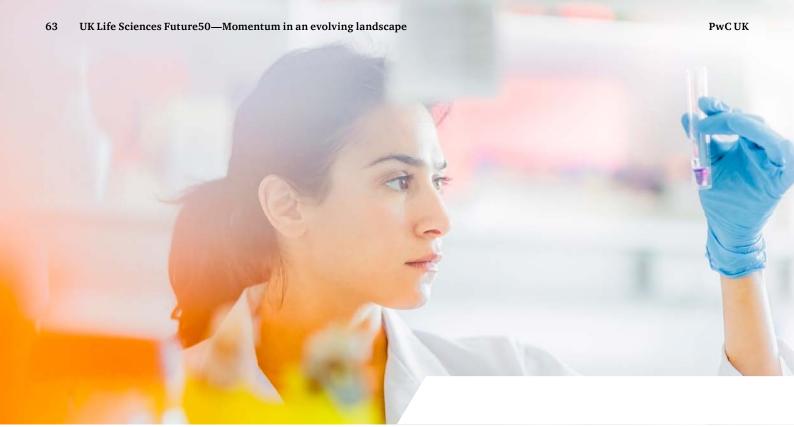
the organ's viability with the potential to significantly improve transplant outcomes. With over 6,000 liver transplants supported globally, OrganOx became an example of UK university innovation translating into commercial success. In August 2025, it was announced that Japan's Terumo Corporation wouldacquire OrganOx¹³⁹ for \$1.5 billion, making it one of the largest exits of an Oxford University spinout.

Whilst not included in the UK deal volume figures in Table 2, the US obesity biotech Metsera, which has generated a lot of interest from pharmaceutical companies, has strong links to science pioneered in the UK, specifically the research of Professor Stephen Bloom¹⁴⁰ at Imperial College London. Professor Bloom's research demonstrated that certain gut hormones modulate appetite and energy balance through key appetite-regulating pathways in the brain, influencing gastric emptying and insulin dynamics relevant to obesity and type 2 diabetes. Building on this work, Imperial College spin-out Zihipp was formed to develop peptide-based therapies targeting obesity and diabetes. In 2023, New York-based Metsera acquired Zihipp, obtaining its proprietary library of more than 20,000 gut hormone peptides and associated intellectual property. These assets became the foundation of Metsera's platform, designed to engineer next-generation incretin and amylin combination therapies for metabolic disease.

Talent, people, skills

Echoing the comments under question 1, respondents gave a relatively high score to "Talent, people, skills", expressing optimism in terms of the UK's scientific talent pool and its ability to attract global talent. Whilst finding talent, people and skills at the C-suite level was considered most challenging, with some respondents expressing concerns that changes to Capital Gains Tax will create additional strain on UK companies' abilities to offer competitive compensation packages. Survey respondents highlighted that for companies where the science and investor base is strong, there is sufficient pull to attract global talent. Survey respondents also underscored the importance of ensuring the UK retains its ability to attract worldclass talent to its life sciences sector, emphasising the importance of streamlined immigration policies to facilitate the seamless mobility of skilled professionals between the UK and Europe. Such initiatives would ensure that innovative life sciences companies can tap into a truly global talent pool, reinforcing the country's position as a leading life sciences hub.





Additionally, respondents cautioned against complacency, noting that the UK's academic excellence and inherent advantages must be actively promoted, with policies designed to attract international students to UK institutions, thereby keeping the nation at the forefront of scientific innovation. Recent changes in policy have resulted in a reduction in international student visa applications, which translates into a decline in enrolment in taught post-graduate courses, impacting universities' finances. However, it is reassuring to see that entrants into research post-graduate courses, which are most likely to feed the talent pipeline for the respondents, increased the between the 22/23 and 23/24 academic years.

Respondents' views on the importance of attracting world-class talent to UK institutions, is echoed in the recent announcement of the Global Talent Fund 142. The Global Talent Fund is a £54m fund from the Department for Science, Innovation and Technology (DSIT), administered by UKRI that will be given to 12 UK institutions to fund the research and relocation costs of top researchers across eight areas, including life sciences. The stated aim of the fund is to enable the movement of global talent and bolster the UK's research base, positioning it at the forefront of international collaboration and innovation.

Interactions with the MHRA: polarising experiences

Responses regarding the MHRA showed a polarised experience among respondents. Some companies cited overwhelmingly positive experiences, commending the MHRA for its flexibility, timely responses, professionalism and thoroughness, and noted a reduction in review times due to additional hiring. Other responses were less positive, voicing concerns around the reduced talent pool, exacerbated by Brexit, slowing regulatory review times and decisionmaking. Some respondents pointed to the MHRA's processes for clinical trial authorisations and protocol amendments as a continued pinch point. While these reviews are a critical safeguard for patient safety, some companies felt that, in practice, the timelines may create a bottleneck relative to peer regulators. Australia, Spain, Canada, New Zealand, and the Netherlands were most commonly cited as alternative trial locations considered by the respondents.

Published performance data shows that the MHRA has made substantial progress in addressing these concerns. Recent MHRA data 143 shows that the agency is now consistently meeting statutory review timelines for clinical trial assessments. Between September 2023 and October 2024, the average time

to assess an initial Clinical Trial Authorisation (CTA) application was 28 days, within the statutory 30-day target. Similarly, amendments to trial protocols were assessed in an average of 29 days, comfortably under the 35-day requirement. In October 2024 alone, the MHRA assessed 74 initial CTA applications and 356 amendments, achieving a 100% compliance rate with statutory deadlines. According to the ABPI's 2024 report 144, these improvements reflect operational reforms, including triaging applications, redeploying staff, and expanding the assessor pool, which helped resolve the backlog that had been delaying reviews earlier in 2023.

IPO outlook / public markets rebound

In line with recent market conditions, respondents' outlook was less bullish on the public markets. This is reflected in statistics published in the BIA's Q2 2025 UK biotech financing report¹⁴⁵ which showed Q2 2025 as the twelfth consecutive quarter without a biotech listing in the UK, reflecting persistent challenges in public markets both in the UK and globally. According to the BIA's report, follow-on financings also hit a 5-year low in 2025, with Q2 2025 marking the fifth consecutive quarter of declining public follow-on activity.

VC / CVC activity

Survey respondents expressed a relatively subdued outlook in terms of Venture Capital / Corporate Venture Capital financing activity, reflecting the challenging financing conditions of early-stage businesses across sectors and geographies in recent years.

This echoes some of the themes presented in Pitchbook's Q2 2025 VC Valuations Report¹⁴⁶ which shows subdued deal activity across multiple sectors in Europe (not just life sciences), extending the value-over-volume pattern that has characterised the market since 2023.

Overall, fewer deals are being completed, but investors are concentrating capital into perceived category leaders, particularly within AI. According to the same Pitchbook report, in the UK and Ireland, valuations strengthened across every stage, with the steepest gains recorded in later stage rounds.

Overall, the market displays a blend of cautious optimism: later-stage valuations appear to be rebounding, but fundraising at the pre-proof-of-concept stage remains constrained as investors prioritise proven scale and revenue traction.

Availability and use of NHS data

The potential of NHS data to drive innovation in life sciences was seen as an untapped resource among respondents. The UK's healthcare system holds an unparalleled trove of patient data, with vast potential for its utilisation. Companies recognise that NHS data offers a competitive advantage in clinical research, particularly in precision medicine, drug discovery and diagnosis. In comparison to the US healthcare system, which struggles with data fragmentation, the UK's centralised system could provide a distinct advantage if fully optimised. The NHS could become a world-leading platform for clinical trials and patient recruitment, enabled by streamlined data access and collaboration with the private sector. Respondents highlighted the need for a more unified approach to data sharing that ensures patient privacy and ethical compliance, while unlocking the benefits of personalised medicine, faster diagnosis, and more preventative healthcare for patients.

Collaboration with the NHS

Many respondents see immense potential for collaboration with the NHS, although partnering is not without its challenges. Nevertheless, the NHS with its extensive patient population and research expertise, is considered by many to be an underutilised asset for clinical trials and innovative healthcare solutions. Several companies point to successful collaborations within the NHS, particularly in areas where the NHS has demonstrated forward-thinking approaches, such as the use of advanced imaging technology and digital diagnostics.

Box 15: CMR Surgical

In December 2024, the All-Wales National Robotic Assisted Programme, a partnership between CMR Surgical, NHS Wales and Life Sciences Hub Wales, announced the milestone of <u>surpassing 500 robotic assisted surgical cases</u>¹⁴⁷ using CMR's Versius robot. The programme is enabling patients to benefit from minimally invasive keyhole surgery, supporting quicker recovery and lower infection risk, while broadening access to robotic-assisted procedures across multiple surgical specialties. For CMR Surgical, the rollout provides real-world utilisation data from a coordinated national health system, while for the NHS it builds workforce capability and embeds innovation at scale to improve patient care.

Areas for improvement mentioned primarily related to the slow pace of adopting new technologies within the NHS and the complex, siloed nature of the system.

Respondents' observations echoed those of the formal report of the Innovation Ecosystem Programme (IEP) 148, an initiative commissioned by the Chief Executive of NHS England to strengthen collaboration between the NHS, industry, academia, and regulators and to create a more coherent system for developing, testing, and adopting healthcare innovations. The IEP recognises that the NHS already performs well in early-stage research and development, real-world testing, and initial site adoption—with standout success in national programmes such as cancer genomics—and that many local "pockets of excellence" already demonstrate how innovation can be successfully embedded. However, the programme identifies persistent barriers, including poor alignment between national and local systems, siloed structures, cultural resistance to change, complex data governance, fragmented procurement processes, and a lack of time, skills, and incentives for NHS staff to adopt innovation.

Box 16: Brainomix

Royal Papworth Hospital NHS Foundation Trust introduced the Brainomix e-Stroke AI software 149 in October 2024 to assist clinicians in interpreting CT scans for stroke diagnosis in real time. The system is designed to accelerate diagnosis and decision-making, particularly in hospitals without specialist radiologists, which could help more patients access timely stroke treatments. The collaboration equips Royal Papworth with advanced tools to enhance stroke care and provides Brainomix with an opportunity to generate clinical evidence from routine use within the NHS, supporting the broader adoption of its technology.



To address these, it recommends a coordinated reform package: integrating innovation into NHS core business; aligning priorities and funding around key healthcare shifts like digitalisation, prevention, and home care; simplifying governance and procurement; strengthening data infrastructure; and embedding innovation skills, protected time, and leadership development across the workforce. The IEP also calls for clearer accountability, joint NHS—industry partnerships to share value, and long-term consistency in delivery, underpinned by cross-sector collaboration through the Accelerated Access Collaborative and Health Innovation Networks.

The 10-Year Health Plan¹⁵⁰ reflects these priorities and commits to embedding innovation as a core part of health service delivery. The plan outlines the aim to improve NHS procurement, with new technologies to be purchased through a single national process and distributed via an internal NHS marketplace. The plan also targets eliminating unnecessary bureaucracy and duplication in how innovations are adopted and scaled. By 2026, a new "innovator passport" is expected to ensure that once a technology has been rigorously assessed by one NHS organisation, it can be adopted elsewhere without repeated evaluations, promoting faster and more consistent access across the system.

Respondents also emphasised the need for NHS staff to have dedicated time and resources for research and clinical trials which is protected in practice, noting that such activity is often undertaken in addition to their clinical workload. This lack of protected research

capacity in practice, combined with a declining number of clinical researchers across the NHS, was viewed as a key constraint on the UK's ability to deliver trials efficiently and at scale.

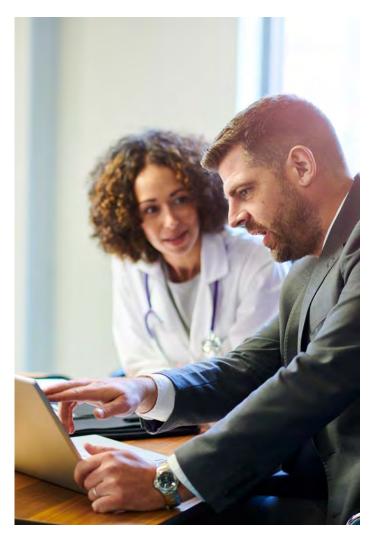
Indeed, a report published by the Medical Research Council¹⁵¹ showed that the number of medically trained research staff fell by 6% between 2012 and 2022, with a 24% reduction at senior lecturer level, and that the proportion of clinical academics among all consultants has nearly halved over 2012-2022, from 5% to 3%. The report also warned of data suggesting a further decline in NHS research capacity due to an ageing research workforce. The report explains that over 2022–2023, the number of people aged 66 years and older have exceeded those in the < 36-year-old cohort by 72.5 FTE in 2022 and 43.9 FTE in 2023. Furthermore, the report referenced a 2024 survey where only 50% of trainees were reported to be confident in continuing a research career. The report calls for urgent reforms, including the creation of a national "Research Clinician Track"—a structured five-phase career pathway spanning from early research exposure at undergraduate level through to independent clinical research leadership—designed to provide clearer progression, greater flexibility, and stronger retention of research-active clinicians. The report also recommends creating at least 40 new tenured posts per year and developing a transparent national salary progression framework for clinically qualified researchers, allowing flexibility to combine core university roles with broader clinical or industry activities.

Government support / Government policies

Government policies / government support received lower scores in the survey. Although, Innovate UK—the national innovation agency that provides funding and support for business-led R&D—frequently cited as a positive example, was seen as an important driver of collaboration and innovation across the sector.

Some respondents spoke positively about schemes such as the Enterprise Investment Scheme (EIS) and Enterprise Management Incentives (EMI). These initiatives are viewed as critical in de-risking investments and attracting both capital and talent to early-stage companies. The EIS provides individual investors with significant tax reliefs, incentivising investment in innovative, high-growth sectors, while the EMI offers tax-advantaged share options that help start-ups recruit and retain key personnel without incurring substantial immediate cash outlays. However, some respondents noted a concern that the EMI requirement for options to be "capable of exercise" within ten years—or risk losing their taxadvantaged status—can misalign with long industrial or clinical development cycles. In sectors such as life sciences, where it often takes more than a decade to translate early research into commercial outcomes, the ten-year window may expire before a meaningful exit occurs, weakening the long-term retention effect of the incentive.

However, beyond this, the discussion often centred on concerns around the potential erosion of R&D tax credits which many respondents stressed was an important resource for early-stage life sciences businesses. This was echoed in the survey participants'



response to Question 3 (discussed in the following section) where the topic of R&D tax credits was ranked as the number one public policy priority.

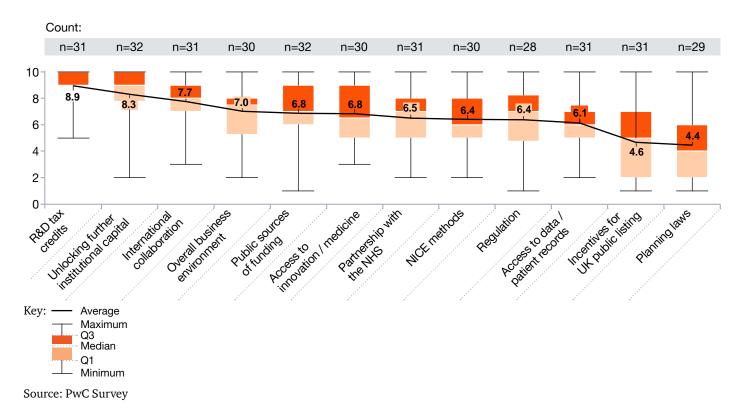
Many participants acknowledged that a series of UK governments have shown commitment to the life sciences sector, noting the various national strategies and the recognition of the industry as a pillar of the UK economy. Nonetheless, there was a shared sense that this recognition needs to be matched by practical follow-through of "translating words into action."

Question 3: Policy priorities

Over the years, the Life Sciences sector has been at the heart of successive UK government strategies, all united by the key tenet that the sector is critical in supporting the nation's economic growth, prosperity, health and wellbeing. Consistently, it has been emphasised that the sector requires a policy landscape that is supportive both financially and operationally across the ecosystem. To encourage and support the development and the use of the Life Sciences innovation that the UK is so famous for. We asked the Future50 companies which public policy levers they consider to be most important for unlocking growth in the UK life sciences industry.

Figure 7

'On a scale of 1–10, how important are the following public policy levers to unlocking growth in the UK life sciences industry?'



Two areas stood out in the responses as the unambiguous top areas of focus: R&D tax credits and unlocking further institutional capital (e.g. pension fund allocations to life sciences investments). These were the highest priorities echoed in most interviews and reflected in the scoring.

R&D tax credits

Respondents largely agreed that government policies related to R&D tax credits have played a crucial role in fostering innovation within the UK life sciences sector. Maintaining a favourable R&D tax credit scheme was considered to be of utmost importance uniformly amongst respondents. Concerns were voiced over the potential erosion of these credits and the need for clarity on new rules. R&D tax credits are a critical resource for small companies, and we received a clear message from the interviews that any reduction or uncertainty in this area would inevitably impact the sector's growth.

Companies expressed the view that R&D tax credits give the UK a competitive edge over other markets. Indeed, compared with many international counterparts, the UK regime is considered supportive, and one of the few that enables companies to claim repayable credits immediately as well as the ability to recognise that value above the tax line.

In the UK, eligible companies may access a cash benefit of 15.0% to 16.2% under the merged scheme for large businesses and a 27.0% cash benefit for loss-making R&D-intensive SMEs. By contrast, while countries like Germany and the US also offer R&D incentives, their structures are often narrower in scope or less financially rewarding. Germany, for instance, offers a 25% credit capped at €1 million of eligible costs per company per year and US credits are generally non-refundable.

The UK's favourable R&D regimes, along with the patent box and capital incentives, are important elements of the UK's early stage ecosystem. It's worth noting that recent UK reforms have tightened compliance (e.g. pre-notification requirements, mandatory documentation) so many companies are moving to a more proactive and real time approach to collating information to support their R&D tax credit claims.

Unlocking institutional capital

Unlocking further institutional capital to fill the persistent funding gap was also universally dominant in responses. The Mansion House reforms were recognised as a positive step, with respondents emphasising the importance of accelerating initiatives which allow for long-term patient capital to flow more effectively into scaling innovative UK businesses.

Survey respondents also highlighted the significant role British Patient Capital and the British Business Bank play in addressing the funding gap for scaling early-stage businesses. There was also significant support for the proposal to expand BPC's capacity to lead rounds or deploy larger investments which could lead to a greater impact on closing the funding gap; points which were echoed in the new £4.0 billion Industrial Strategy Growth Capital initiative 152 of the British Business Bank announced in June 2025.

The developments summarised in Section 3, including the Mansion House Accord 153 announced in May 2025, which doubled the ambition of the 2023 Compact, and the expansion of the British Business Bank's remit with an additional £6.6 billion in funding demonstrate a strong policy and industry commitment to mobilising long-term institutional capital for UK private asset classes. The Accord's 17 signatories— Aegon UK, Aon, Aviva, Legal & General, LifeSight, M&G, Mercer, NatWest Cushon, Nest, now: pensions, Phoenix Group, Royal London, Smart Pension, The People's Pension, SEI, TPT Retirement Solutions, and USS—collectively represent around 90% of active DC savers and have pledged to invest 10% of their default pension funds in private market assets (defined 154 to include property, infrastructure, private credit, private equity, venture capital) by 2030, with at least 5% in UK-based opportunities.

The ABI's "Year one progress update" 155 on the Mansion House Compact published in 2024 estimated around 0.36% held in unlisted equities within DC default funds as of February 2024. The report also noted that signatories encouraged broadening the Compact's focus to investment in a range of private asset classes, including infrastructure and real estate, rather than emphasising primarily private equity and venture capital. This was indeed reflected in the Mansion House Accord (2025)¹⁵⁶ which referenced a broader range of private asset classes including real estate and infrastructure as well as private equity. Indeed, the Pension Policy Institute's 2025 report¹⁵⁷ noted that signatories are indeed responding positively but cautiously to the reforms. The push for diversification into a broad range of private asset classes including real estate and infrastructure is understandable, but there is an important case to be made for ensuring venture capital is not marginalised in private asset class allocations.

Evidence from the <u>British Business Bank's 2024</u> analysis¹⁵⁸ of 240 UK venture funds showed that life sciences remains one of the more resilient and better-performing segments of UK venture capital. Life sciences funds delivered a pooled realised return (DPI) of 1.14, exceeding the broader market's 1.02, with median DPI 0.87 vs. 0.73—indicating relatively stronger realised outcomes even amid valuation resets. The report found that UK VC returns overall are now comparable to US and European benchmarks, underscoring the international competitiveness of the domestic asset class. Crucially, the report highlighted that pension funds remain under-exposed to this opportunity despite the strength of returns, calling for greater institutional participation.

These findings support the rationale for maintaining a dedicated venture allocation in private market strategies and reinforces that venture capital represents a strategic channel for UK pensions to align long-term returns with national innovation and productivity goals.

Complementing the Mansion House reforms, the Long-term Investment for Technology and Science (LIFTS) initiative provides a practical mechanism to channel newly mobilised institutional capital into the UK's innovation economy. Announced by HM Treasury and the British Business Bank in November 2023¹⁵⁹, LIFTS was designed to catalyse large-scale, government-anchored investment vehicles that co-invest alongside pensions and insurers in highgrowth technology and science businesses.

The first operational LIFTS vehicle, the <u>Schroders</u> <u>Capital UK Innovation Long-Term Asset Fund</u>¹⁶⁰ (LTAF), was launched in late 2024 following a £250 million cornerstone commitment from the British Business Bank and matched institutional investment from leading UK pension providers. The £500 million fund is focused on scaling innovative UK businesses across venture, growth equity, and technology-intensive sectors, with a significant allocation to life sciences. The LTAF represents the first tangible example of government and institutional collaboration under LIFTS and provides a scalable model for future long-term asset funds targeting UK innovation.

Box 17: Schroders UK Innovation LTAF and Draig Therapeutics

In mid-2025, Schroders Capital announced the first investment from its UK Innovation LTAF: participation in Draig Therapeutics' \$140 million Series A financing 161. Based on the foundational work of Professors John Atack and Simon Ward at Cardiff University, Draig Therapeutics is developing novel small molecules that rebalance excitatory and inhibitory neurotransmission via allosteric modulation of AMPA and GABA_A receptors, aiming to offer a differentiated path to treating neuropsychiatric conditions such as major depressive disorder by precisely restoring neural circuit balance without the toxicity or narrow therapeutic window of earlier drug candidates.

International collaborations

As highlighted throughout this report, many of the Future50 companies maintain active collaborations with international research organisations and academic partners. For these businesses, the ability to operate seamlessly across borders is critical to their success and competitiveness—a point reflected in the high priority they assigned to this area in the survey. Respondents emphasised that life sciences is inherently a global industry, where innovation relies on open scientific exchange, access to international talent, and the freedom to collaborate across markets and disciplines. Ensuring that such cross-border collaboration remains frictionless is therefore essential to sustaining the UK's position in the global life sciences ecosystem.

Institutions like UK Research and Innovation (UKRI) play a key role in funding, coordinating, and internationalising the UK's research ecosystem. UKRI is the UK's main research funding agency, responsible for allocating grants, supporting innovation, and fostering international collaboration across academia and industry. It played a key role in facilitating the UK's re-association with Horizon Europe, the EU's €95.5 billion research and innovation programme¹⁶². Horizon Europe funds multinational R&D partnerships and provides access to leading networks and infrastructure—making UK association vital for global competitiveness. To support re-entry, UKRI administered the £1 billion Horizon Europe Guarantee¹⁶³, enabling UK researchers to continue participating during negotiations, and advised government on aligning domestic funding rules with EU frameworks. Since association was confirmed in September 2023, UKRI has guided universities and businesses through the transition to direct EU funding, helping to re-establish the UK as a full partner in Europe's research ecosystem.

Box 18: Macomics

Macomics, a company developing macrophagetargeted cancer therapies, announced two collaborations with renowned European cancer research institutes in 2024. In May 2024, the company partnered with IFOM, the AIRC Institute of Molecular Oncology in Italy¹⁶⁴ (Milan), to study macrophagetumour interactions using advanced tumoroid models and T-cell biology expertise. In June 2024, Macomics announced a collaboration with the Institute of Oncology Research in Switzerland (Bellinzona) (IOR)¹⁶⁵ to investigate macrophage-targeted approaches in prostate cancer using IOR's specialised disease models. These strategic collaborations are valuable because they combine Macomics' macrophage discovery platform with world-leading academic capabilities, strengthening its translational research and accelerating the development of more effective cancer treatments.



The Life Sciences Sector Plan 166 recognises life sciences as a global industry and outlines a series of proposed measures to strengthen the UK's position through deeper international collaboration and trade. To support cross-border partnerships, the government aims to implement a new Trade Strategy from summer 2025, renew relationships with key partners such as the US and EU, and prioritise engagement with high-growth markets. The plan also includes adapting export promotion and finance tools to the specific needs of the life sciences sector, alongside targeted efforts to address market access barriers and highlight UK innovations with export potential, particularly technologies demonstrated within the NHS. Finally, the government has indicated an intention to work with international partners to enhance supply chain resilience, including through initiatives such as the European Critical Medicines Alliance and the UK Supply Chain Centre, with the goal of maintaining secure and sustainable access to essential medical goods.

Overall business environment

The overall business environment captures many of the areas covered by specific policies discussed elsewhere in this Report, from finance and tax, to regulation and skills and talent, as well as the general ease of doing business in the UK. Unsurprisingly then, policy levers relating to overall business environment were considered important by many of the survey respondents, offering meaningful opportunities to strengthen the UK life science ecosystem. Priorities we heard from survey respondents included removing the additional friction that Brexit has introduced when doing business in Europe, including shipping, VAT and supply chain challenges. Respondents also highlighted the potential benefit of policies to address the impact of the inflationary environment, which has been placing additional pressure on cash management, and therefore their ability to invest in growth and



innovation. In addition to comments on the impact of personal tax policy changes on attracting executives, respondents highlighted that personal tax policies such as entrepreneurs' relief impact how attractive the UK is for founders.

Public sources of funding

Under the topic of public sources of funding, Innovate UK grants were recognised as a key asset and source of funding for companies. This model of public funding has become an important part of the UK innovation ecosystem, underscoring the government's role in fostering technological advancement and economic growth.

Box 19: Touchlight

Touchlight, a company specialising in enzymatic DNA production through its proprietary doggybone DNA (dbDNA) technology, secured a LSIMF grant in March 2023167 to support its £14 million scale-up DNA manufacturing programme. The facility was completed in 2023. Today it operates as a fully functioning **GMP-licensed DNA** manufacturing facility in Hampton, London, with 11 suites and a production capacity of over 8 kg per year 168. Under the newly acquired MHRA license, Touchlight has begun manufacturing GMP API material.

The <u>Biomedical Catalyst</u>¹⁶⁹ (BMC) is a flagship initiative within Innovate UK, launched in 2012 as part of the UK Government's Industrial Strategy to accelerate innovation in the life sciences sector. Jointly delivered by Innovate UK and the Medical Research Council, the programme provides targeted funding for translational research supporting projects that move biomedical discoveries from early-stage proof-of-concept through to clinical development and commercialisation. It bridges a critical gap in the innovation pipeline by co-funding both academically led and industry-led research, helping to de-risk technologies and attract private investment into promising health innovations.

The <u>Life Sciences Innovative Manufacturing Fund (LSIMF)</u> was also recognised as an important source of public funding. Launched in 2023, the LSIMF supports companies investing in cutting-edge life sciences manufacturing projects including vaccines, biotherapeutics, diagnostics, and medtech. It provides capital grants to help establish, expand, or modernise UK-based manufacturing facilities, boosting domestic capability and supply chain resilience. The fund aims to attract high-value R&D and production investment to the UK, strengthening the country's position as a global leader in life sciences innovation and manufacturing.



Commercial environment

Given the stage of development of the Future 50 companies, policies relating to the UK's commercial model were not front of mind for most survey respondents. Topics such as access to innovation including whether NHS pricing mechanisms adequately recognise and reward the value of innovation—and the methods used by NICE to assess cost-effectiveness tended to score around the middle of the range. In contrast, these issues were major points of contention among the larger pharmaceutical companies we interviewed, whose perspectives are explored in more detail later in the report. While pricing and reimbursement considerations are understandably less immediate for early-stage businesses, they are critical for established corporates whose commercial decisions in turn shape the wider ecosystem. The investment choices of such companies, both domestic and international, have a halo effect that extends far beyond the company campus: driving growth, attracting talent, and stimulating further investment across science parks and the UK life sciences sector as a whole.

Incentives for UK listing

Public policy incentives for UK public listing were ranked as one of the lowest priorities. There was a recognition among survey respondents that UK public markets are less attractive than their US counterparts, with most companies targeting an eventual NASDAQ listing (dependent of course on public market conditions globally).

Some respondents described a structural imbalance between the two ecosystems: the US offers deeper pools of capital, stronger capital markets teams, greater investor understanding of risk and opportunity, and notably <u>higher valuations</u>¹⁷¹.



Nevertheless, respondents emphasised the importance of enabling innovative businesses to build, grow, and scale from within the UK, developing talent and capabilities domestically so that global revenues ultimately return to the UK economy.

Planning laws

Similarly, the topic of planning laws received a low score in terms of priorities which makes sense given the scale of the companies in the sample. Among a cohort dominated by early-stage life sciences companies, planning laws may indeed be seen as a distant concern. The impact of planning constraints typically becomes more pronounced as companies transition from laboratory or pilot operations to full-scale production. Notably, the few companies in the survey that had explored or undertaken manufacturing expansion reported no significant issues with planning processes. This may partly explain why planning laws received a low priority score overall: for the few respondents where this was a relevant topic, their experiences were neutral or positive, while for most of the other respondents, this topic is peripheral to immediate business concerns.



Perspectives from interviews with large corporates

We spoke with the senior UK executives of five large pharmaceutical and medical device companies to gather their insights on two key points: (i) the main strengths that they believe make the UK attractive for life sciences investment, and (ii) the areas that need further attention to enhance the UK's position as a global investment destination in life sciences.

Key strengths for the UK to build on—corporate perspectives

Strong academic and research base

Interview participants consistently praised the UK's academic excellence and robust research ecosystem, pointing to institutions like Cancer Research UK, the Institute of Cancer Research, the Francis Crick Institute, major teaching hospitals as well as world-leading genomic and population health resources such as Genomics England and the UK Biobank. From cancer research to immunology and advanced therapy medicinal products, many breakthrough innovations and medicines have emerged from science pioneered at UK academic and research institutions.

Interviewees also emphasised that the UK's rich network of key opinion leaders and specialised centres fostering cutting-edge R&D, forming a strong foundation that continues to attract major global pharmaceutical and medical device companies—albeit as one consideration within a broader set of multifactorial decisions.

Examples mentioned included:

- The National Amyloidosis Centre, UCL academic research unit and NHS national referral service, based at the Royal Free Hospital in Hampstead, that delivers world-leading clinical care and cutting-edge research in amyloidosis,
- The NIHR Southampton Biomedical Research Centre, a partnership between the University of Southampton and University Hospital Southampton that drives cutting-edge translational research to turn scientific discoveries into new treatments across areas like respiratory diseases and allergy, immunology and infection, nutrition, perioperative and critical care.
- The Scottish Centre for Respiratory Research at the University of Dundee is a specialised hub advancing cutting-edge research and clinical trials in airway diseases such as COPD, asthma, and bronchiectasis.

Commercial clinical trials:

Industry voices described the UK as having significant potential to become a leading hub for commercial clinical trials. Some highlighted the UK's strong patient registries, well-established research hospitals like the Christie in Manchester, and internationally renowned centres of excellence such as Cancer Research UK, the Institute of Cancer Research and the Francis Crick Institute in oncology. The O'Shaughnessy Review was praised for highlighting important barriers and bottlenecks, such as lengthy startup times and fragmented local contracting, but also for offering a roadmap to reduce process complexity.

Interviewees note that Spain and other competitors are gaining ground by streamlining trials, so the UK must cultivate a compelling, unified proposition. When the UK aligns its academic prowess with an efficient clinical trials infrastructure, it creates a powerful draw for global studies.

The policy paper published in August 2025¹⁷³ by the Department of Health & Social Care provides a status update on commitments to achieve the recommendations of the O'Shaughnessy review. Commitments listed as completed include:

- The National Contract Value Review (NCVR)
 approach for late-phase commercial trials (Phase
 2b and above) was implemented across the UK in
 October 2023, covering acute, specialist and mental
 health trusts.
- 2. A pilot to extend NCVR to early-phase and advanced therapy medicinal product (ATMP) studies concluded successfully in 2024, after which NCVR became the standard costing methodology for these study types.
- 3. The MHRA introduced a notification scheme in October 2023 to uphold the 60-day approval standard for clinical trials.
- 4. Clinical Trials Delivery Accelerator established: A host organisation was appointed in February 2024 to lead the accelerator programme, providing systemwide learning and insights on faster study setup.
- 5. Common approach to contacting patients: Initial recommendations on data-enabled methods for contacting patients about research participation were delivered by April 2024. Further development is now embedded within UKCRD workstreams.

6. Streamlined study setup processes: A total of £15.75 million has been allocated over three years (from financial year 2024–25) to research-active NHS trusts to address set-up delays linked to pharmacy capacity. DHSC, through the HRA, is embedding the HRA's national technical assurance guidance for pharmacy and considering whether this guidance should become mandatory.

Real world evidence and UK data assets

Interviewees underscored the UK's potential to leverage world-class data assets such as the UK Biobank, Genomics England, and rich NHS patient registries such as the National Cancer Registration and Analysis Service, the Systemic Anti-Cancer Therapy dataset, the National Institute for Cardiovascular Outcomes Research, the UK Cystic Fibrosis Registry, and the UK Renal Registry, together with its strengths in AI/ Machine Learning. In addition, the emergence of integrated regional data assets such as the Greater Manchester Care Record demonstrates the potential of shared care records to contribute to population health research and real-world evidence.

Box 20: Our Future Health

These world-class foundations also provide the basis for the Our Future Health initiative, which is now building the UK's largest and most diverse health research cohort. By recruiting up to five million volunteers, linking genomic, lifestyle and longitudinal NHS health data, and securing consent for re-contact, Our Future Health has the potential to enable uniquely large-scale studies in prevention and early detection while creating an exceptional resource for accelerating clinical trial recruitment. Our Future Health has been embedded in the UK's new Industrial Strategy and the 10-Year Health Plan, with up to £354 million of government funding 174 to support its expansion.

By combining real-world data with machine learning, large companies including pharmaceutical and diagnostics firms can gain insights that accelerate drug discovery, help to develop diagnostic tests and pathways which lead to more preventative health, and reduce uncertainty in clinical trials to improve health technology assessments and ultimately patient outcomes. Participants also emphasised that unlocking this advantage requires clear frameworks for data-sharing, effective patient engagement, and closer coordination across NHS trusts to fully translate data-driven research into tangible outcomes. With a policy environment that demands greater employment of real-world evidence, NHS data represents an underutilised competitive advantage for the UK, which if used appropriately would lead to a more efficient healthcare system, with earlier intervention and preventative measures, and would attract greater levels of private investment.

Drivers of direct investment into the UK

Foundations driving UK competitiveness

From the interviews, it is clear that decisions made in global boardrooms on where to locate investment in areas such as R&D and manufacturing are complex and multifaceted. Companies consider a broad mix of factors, including areas where the UK demonstrates clear regional strengths such as the quality of the local science base, access to skilled talent and the strength of local academic and research institutions.

This perspective is echoed in the <u>ABPI's Pharmaceutical</u> <u>Industry Investment Competitiveness Framework</u>¹⁷⁵ published in September 2025 which also showed the UK demonstrating clear regional strengths across these dimensions. The report highlighted key UK strengths including:



- World-class science base and talent pipeline, with 16 of the world's top 100 universities for life sciences and medicine based in the UK and the country ranking 2nd globally for both research quality (as measured by the Nature Index 2025) and university reputation (as measured by the QS World University Rankings by Subject 2025). The UK also ranks ahead of comparator countries (including the US, Germany, France, Canada), with 8.7% of its graduates holding degrees in statistics, mathematics or natural sciences, supporting a deep pool of scientific capability.
- R&D funding environment, with the UK ranking 2nd for government spending on health R&D (as a share of GDP) and joint 3rd for charitable R&D funding;
- Vibrant biotech and innovation ecosystem, with the UK home to 1,579 biotech companies, ranking 3rd globally and 1st in Europe and with UK universities generating 399 pharmaceutical spinouts in 2024, the highest of any sector;
- Strong intellectual property protections, with the UK's data- and patent-based protections on par with comparator countries.



The commercial environment as a driver of global competitiveness

However, while the UK's research and innovation base remains a clear strength, interviewees consistently emphasised that the commercial environment—reflecting not only the UK's capacity to invest in R&D but also its willingness to invest in the products of innovation—is equally critical to attracting and sustaining global investment.

The ABPI's Pharmaceutical Industry Competitiveness Framework highlights that factors such as patient access, medicines spend, uptake of innovation, and pricing predictability are key determinants of investor confidence. Yet, according to the report, the UK invests only 9% of its healthcare expenditure on medicines, compared with 17% in Spain and 14% in Germany (and indeed ranking behind all comparator countries), and makes just 37% of new medicines fully available for their licensed indications, versus 90% in Germany. Uptake of new treatments remains

comparatively low, with the UK recording the second-lowest level of adoption among the G7 three years post-approval. Compounding these challenges, high and unpredictable clawback rates—rising to a minimum of 23.5% for newer medicines in 2025, compared with an EU4 average of 6.8%—have reduced predictability for pharmaceutical companies.

As corroborated by our interviews and reflected in the ABPI Competitiveness Framework, companies deciding where to place investment weigh not only the UK's scientific and R&D strengths, but also the commercial environment—including pricing, uptake, reimbursement, and predictability. These market conditions matter deeply: while a strong science base is essential, investors ultimately consider the full set of factors that influence the returns on their investment, particularly the stability and attractiveness of the commercial landscape.

Turning research into real-world impact through the NHS

- Multiple interviewees emphasised that embedding clinical trials within NHS care pathways strengthens the system's ability to adopt and diffuse new treatments once they are approved.
- When more trials are conducted within NHS hospitals, patients gain earlier access to cutting-edge therapies, and those innovations are tested in real-world conditions. This integration supports the NHS ambition to deliver "research as part of routine care," ensuring that participation in studies becomes a normal feature of patient pathways rather than an exception. Hospitals involved in research gain operational experience in running novel treatment protocols and develop clinical familiarity among staff. This collective experience in turn has the potential to lower barriers to adoption once products receive regulatory approval and reimbursement. Early exposure through trials enables clinicians to develop a deeper understanding of treatment benefits, safety profiles, and patient outcomes—insights that can drive implementation post-launch.
- The PwC–Bristol Myers Squibb Life Sciences 2030 report 176 highlights this potential explicitly, noting that embedding clinical research more deeply in NHS operations would "unlock the full potential of the NHS as an engine for innovative clinical research" with trials delivered in real-world contexts across Integrated Care Systems. It further observes that increasing clinical trial participation to 1.5 million people could yield significant efficiency and revenue gains for the NHS, while strengthening the UK's attractiveness for inward life-sciences investment.
- In this way, expanding the clinical research footprint within NHS
 hospitals serves two complementary purposes. It brings innovative
 treatments to patients sooner, and it builds the institutional
 capability, confidence, and infrastructure required for rapid and
 consistent adoption of new medicines once they reach the market.

Box 21: Brainomix and the HIOTV

Regional innovation networks play an important role in spreading innovations across NHS organisation. These networks operate at the interface between research-active hospitals, universities, and industry partners, identifying effective technologies and interventions, supporting evaluation, and building implementation capacity in NHS sites. An excellent example of this is Health Innovation Oxford and Thames Valley (HIOTV), part of the NHS's national network of Academic Health Science Networks (AHSNs), which played a key role177 in translating Brainomix's AI imaging technology from regional pilot to national adoption. In 2019, HIOTV developed and published guidance for timecritical thrombectomy, began supporting early use of AI imaging to enable faster, more consistent clinical decisions. In 2021, Brainomix was awarded the NHS AI in Health and Care Award, an initiative intended to accelerate uptake and evaluate impact of its 360 Stroke tool. HIOTV then began a large real-world evaluation across 25 hospitals and 80,000+ patients¹⁷⁸, building the evidence for the wider rollout. In 2024, the HOITV evaluation reported associations between AI use and >50% higher thrombectomy rates in some areas, with access times reduced by over an hour. HOITV reported that as of 2024, all 107 stroke units in England are now using AI brain imaging—up from just 5% in 2019.

Pricing and reimbursement: the missing link

- While deeper integration of research within the NHS could strengthen early adoption of innovation, sustained patient access ultimately depends on the broader regulatory and reimbursement environment. Turning promising trials into widely available treatments which benefit patients requires not only hospitals ready to implement new therapies, but also systems that value and pay for them in a consistent, timely way. In this sense, clinical implementation and commercial conditions are two sides of the same coin—both essential to ensuring that the UK's scientific and operational strengths translate into outcomes for patients, and an environment that is supportive of investment in the life sciences ecosystem by global companies.
- The UK has made meaningful strides recently in streamlining regulatory processes shaping the commercial environment. For example, the NICE-MHRA collaboration under the 10-Year Health Plan 179 introduced a joint information-sharing and coordination process that allows the two agencies to work in parallel. This arrangement was set up to enable parallel assessment of new medicines, allowing the MHRA to evaluate safety and efficacy for regulatory approval while NICE simultaneously appraises clinical and cost-effectiveness for NHS reimbursement. This coordinated approach aligns regulatory and value decisions, reducing the time between approval and patient access by an estimated three to six months. Indeed, in August 2025, NICE reported that over the year to date to March 2025 it achieved a 26% reduction 180 in the average time between MHRA regulatory approval and the publication of NICE technology appraisal guidance, and when companies engaged proactively to shorten timelines, NICE has published guidance on average 48 days after MHRA licence issuance.

While this example of regulatory coordination shows signs of progress, a fundamental issue remains regarding the UK's pricing and reimbursement environment. While the price of innovation should not be limitless, there must be a fair and sustainable return on investment, with the economic model working for industry, the health system and the economy. Yet, the current framework has become increasingly unpredictable, undermining the UK's competitiveness for life sciences investment. As corroborated in our interviews with large global pharmaceutical and medical device company representatives, and as shown in the ABPI's Competitiveness Framework. While the UK's science base and academic excellence are world-leading, these strengths alone are not enough to sustain, let alone grow, its position as a global life sciences leader. A world-class research base must be matched by a commercial environment that values and pays for innovation in a consistent and globally competitive way.

To achieve the ambitions of the UK's Industrial Strategy—and to deliver both growth and better health outcomes—there is a burning platform for the UK to focus on restoring predictability and sustainability in pricing and reimbursement.

06

Call to action

This report highlights just how much there is to celebrate across the UK life sciences sector.

Accelerating the UK Life Sciences Ecosystem

The Future50 represent a vibrant group of companies addressing major unmet needs in areas such as oncology, central nervous system diseases, inflammation and immunology as well as bottlenecks in life sciences research—pursuing innovations with the potential to deliver immense patient benefits and transform the research landscape and demonstrating the country's world-class innovation capabilities. Their progress illustrates why life sciences remain a strategic pillar for the UK economy with the potential to benefit communities worldwide.

The >£1.0 billion acquisitions of companies such as Verona Pharma, OrganOx or Vicebio highlight how the UK not only produces world-class science but also provides the environment—through its universities, translational research infrastructure, and investor base—for that science to mature into companies capable of attracting global strategic investment.

Whilst we are cognisant of the challenges that persist, this remains a sector of national importance and pride—one that continues to attract talent, investment, and international recognition. We have touched on some of the obstacles that must be addressed with urgency. From unlocking institutional capital to address the funding gap to creating a commercial environment which recognises the value of innovation, resolving these issues will be critical to sustaining momentum and ensuring that the UK realises its full potential in translating science into impact. One hopes that the refreshed Industrial Strategy will deliver the actions to help address some of these constraints and unlock the next phase of growth.

Above all, the science being incubated—and the tangible progress being made—remains deeply inspiring.

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