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Life Sciences in the UK Healthcare System

From *nice to have* to ***strategic imperative***

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July 2026

For many people working across the NHS, the pressure is relentless. Waiting lists remain high, emergency departments are under strain, and for many patients even securing a GP appointment can be difficult. Day to day, the priority is clear - manage demand, treat patients, and support an overstretched workforce.

In such an environment, life sciences and innovation can feel distant from front-line realities. Understandably, they can be perceived as something that happens elsewhere - research led by academic centres, pilots that never quite scale, or technology that is interesting but peripheral to the pressing business of delivering care.

Whilst this perception is understandable, it's no longer sustainable.

The central argument of this paper is simple: the UK health system cannot meet current and future demand through operational improvement alone. Life sciences must become part of core health and care delivery. This is not because it is fashionable, but because it is increasingly one of the most practical ways to improve outcomes, reduce avoidable demand, attract investment, and strengthen the long-term sustainability of the NHS and wider care system.

The required mindset shift is practical rather than rhetorical. The question is not whether life sciences and innovation are desirable activities. It is whether the UK health system can deliver better outcomes, improve productivity and meet future demand if it remains a passive recipient of innovation, rather than an active partner in its development, evaluation and adoption.

What *life sciences* mean in a healthcare context

There is often a perception that life sciences are something that happens at a distance from everyday healthcare - the domain of global pharmaceutical companies, state-of-the-art biotechnology, ground-breaking cancer research or major academic medical centres. Whilst those are undeniably important parts of the life sciences ecosystem, they only represent part of the picture.

Less visible, but equally important, are the roles life sciences play in the day-to-day reality of healthcare delivery. They influence how patients access clinical trials, how clinicians adopt new diagnostics and treatments, how healthcare organisations work with universities and industry partners, how evidence is generated in real-world settings, and how innovations move from concept to routine care. Since the nineteenth century, advances in fields such as microbiology, vaccination, genetics, diagnostics and pharmaceuticals have fundamentally shaped how healthcare is delivered.

At their best, life sciences aren't confined to laboratories, research institutes or boardrooms, but are present at the front line of healthcare delivery - some examples of where this works well:

Life Sciences can be defined as the application of research, innovation and technology to improve human health, spanning drug discovery, diagnostics, treatments, MedTech, digital health and the adoption of innovation into clinical practice. The King's fund – Wickens C, Charles A. Life sciences explained. London: The King's Fund; 2025

Context	*Life sciences involvement*	*Why it matters*
Clinical research and trials	Embedding research into routine care, so patients can access innovative therapies and clinicians can generate evidence in real-world settings	*Improves access to new treatments and strengthens the evidence base for better care*
Academic partnerships	Working with universities and research institutes to translate discovery into practical improvements in diagnosis, treatment and service delivery	*Connects scientific expertise with real clinical and operational need – 'bench to bedside'*
Industry collaboration	Partnering with pharmaceutical, MedTech and digital health organisations to test, evaluate and adopt innovations safely and effectively	*Supports faster adoption of useful innovations while managing clinical, commercial and governance risk*
Innovation districts and clusters	Creating places where NHS organisations, universities, local government and industry share infrastructure, workforce, research and investment priorities	*Builds regional capability and makes innovation easier to coordinate and scale*
Digital, AI, data and genomics	Using data-driven tools to support earlier diagnosis, risk stratification, precision medicine and more personalised care	*Helps shift the system from reactive treatment towards earlier, more targeted intervention*
Implementation and adoption	Turning pilots, evidence and partnerships into repeatable pathways, operating models and measurable benefits	*Ensures innovation is experienced as better care, not extra work*

Life sciences as a clinical outcomes catalyst

When life sciences are embedded effectively into health systems, they not only generate research output, but improve conditions for care – promoting safer, earlier, more targeted and more effective treatment.

the evidence shows:

Lower mortality rate

Research activity is associated with better survival, not just academic output - NIHR found that mortality odds for research-active NHS trusts are 5% lower ⬗

Performance improvement

A focused review found that most clinical studies reported improvements in healthcare performance linked to clinician and organisational involvement in research ★

Better CQC rating

The NIHR also found that research-active GP practices score 1.5x higher on Care Quality Commission rating and have better patient outcomes ⬗

Why does this matter? The strength of this evidence re-positions research and innovation from something "extra" into something that directly supports core care delivery. The practical implications are significant:

- Earlier diagnosis and stratification of risk
- Better patient experience and confidence
- More effective use of therapies and diagnostics
- Stronger adherence to evidence-based practice
- Faster feedback loops between innovation, evidence and service change

Life sciences are not just a route to future breakthroughs... but are a proven way of improving the performance of the existing system.

⬗ National Institute for Health and Care Research. Embedding a research culture [Internet]. London: NIHR [cited 2026 Jul 16].

★ Boaz A, Hanney S, Jones T, Soper B. Does the engagement of clinicians and organisations in research improve healthcare performance: a three-stage review. BMJ Open. 2015;5(12):e009415

Where innovation meets real life - the patient voice

The evidence demonstrates the value of the life sciences sector; but behind every statistic are patients, families and communities whose lives are directly affected by the pace at which new discoveries are translated into care. To bring this perspective into the discussion, we spoke with **Ray Gardner**, cancer patient advocate, author and public involvement leader, about why life sciences research matters and what healthcare leaders should understand about its impact on patients.

Q) What do you think policy makers and leaders, across the life sciences system, most need to understand about why research and innovation matter to patients?

*Policymakers and leaders need to understand that research and innovation are not abstract ambitions for patients; **they are often the difference between uncertainty and solutions**, between inevitable decline and maintaining independence, and **between restricted options and real hope**. For patients and families, progress in life sciences can mean earlier diagnosis, more personalised treatment, fewer side effects, better quality of life, and more time to live well.*

*It is also important to recognise that **patients are not passive recipients of innovation**. They bring lived experience that can improve the relevance, design, delivery and uptake of research. **When patients are meaningfully involved from the beginning, research is more likely to ask the right questions**, measure outcomes that matter in daily life, and produce innovations that are accessible, acceptable and equitable.*

Q) Looking ahead - what one change could have the greatest impact on improving patient outcomes through life sciences research in the UK?

*It would be to embed **meaningful patient involvement** across the entire research and innovation pathway in the UK, from setting priorities and designing studies through to regulation, adoption and implementation in the NHS.*

Patient involvement should not be treated as a late-stage consultation or a tick-box exercise, but as a core requirement for high-quality research and better decision-making. This would help ensure that investment is directed towards the outcomes that matter most to patients, that trials are easier and fairer for all, and that successful innovations can reach the people who need them more quickly.

Ultimately, improving patient outcomes depends not only on scientific excellence, but on creating a system that listens to patients, reduces barriers to participation and access, and turns discovery into practical benefit in everyday care.

This is not just a healthcare story — it's also a capital and growth story for the wider UK economy

If the clinical case is under-recognised, the economic case is often even less so. Life sciences improve health outcomes and also bring capital into the system. Commercial clinical trials, partnerships, research grants and innovation programmes can all create direct value for NHS organisations by funding posts, supporting infrastructure, enabling access to new treatments, and strengthening capability.

the evidence shows:

£28,808 average payment per commercial trial participant recruited

Clinical research can generate direct income for NHS organisations, helping support research infrastructure, workforce capability and patient access to innovative therapies ⬗

£7.4 billion contribution to UK economy and 65,000 jobs supported

Clinical research acts as both healthcare improvement and economic growth mechanism. Industry-sponsored trials attract international investment, create skilled employment and strengthen the wider life sciences ecosystem ◑

£13 returned for every £1 invested in clinical research

Long-term value through improved health outcomes, productivity gains and wider economic benefits. NIHR's economic assessment estimates £1 invested delivers over £13 in societal returns over a 60-year period ⬗

For the UK, a **flourishing life sciences ecosystem** does three things at once:

1	Improves patient care	**2**	Attracts jobs and investment	**3**	Strengthens the wider health economy that the NHS depends on

This matters because the benefits extend far beyond research itself. When life sciences are embedded effectively, they can improve patient outcomes, accelerate the adoption of innovation, attract investment, support skilled jobs and strengthen the wider health ecosystem.

◑ The value of industry clinical trials in the UK – extended report. London: Frontier Economics; 2024. Prepared for the Association of the British Pharmaceutical Industry (ABPI)

Finding the path to BAU

The problem is not a lack of evidence, increasingly, the evidence is there -

Better outcomes	Better patient experience	Better staff engagement	Better economic returns

- the challenge is that the benefits of life sciences are not always well understood, widely recognised or systematically translated into routine care.
That's important, because without the right foundations, even robust innovations fail to translate into everyday care: benefits remain local; adoption is inconsistent; learning does not spread and ultimately staff continue to experience innovation as extra work, rather than part of delivering care better.

The required shift

The organisations realising the greatest value from life sciences are not simply investing in more research, they're creating the conditions for innovation to succeed:

With	Rather than
Innovation embedded in organisational capability	R&I dependent on individual champions
Connected healthcare ecosystems	Fragmented partnerships
Research embedded into routine pathways	Research separate from care delivery
Clear, transparent engagement models	Unclear routes for industry and academia
Structured adoption and implementation	Pilots that struggle to scale

The Opportunity

Life sciences are often viewed through the lenses of research excellence, scientific discovery, economic growth or commercial innovation. All of those perspectives matter. However, for health systems, the real opportunity lies in how these elements come together to improve care. Health systems are being asked to deliver better outcomes, improve productivity, reduce unwarranted variation and meet growing demand, with finite resources. Increasingly, the greatest opportunities sit at the intersection of healthcare delivery, research, technology and innovation.

The challenge is no longer proving that life sciences matter. It's creating the conditions that allow the benefits to reach every patient, every pathway and every community. Ultimately that's what this paper is about: moving life sciences from an ambition, a pilot or a partnership activity, into a practical mechanism for delivering better healthcare.

Where Archus can help

The challenge is rarely a lack of ambition: often it's navigating a complex ecosystem where partners all have different priorities, incentives and ways of working. The Archus team brings knowledge and experience from across the health ecosystem and a combined expertise in **NHS service delivery and large-scale transformation, pharmaceuticals, biotechnology, MedTech, academia, charities, public health, AI and digital transformation, and international healthcare markets** – all enabling us to bridge the gap between innovation and implementation.

We help organisations answer five critical questions:

Where should we focus?

Identifying the best opportunities to improve patient outcomes, through market analysis, benchmarking, ecosystem mapping and opportunity assessment.

How do we make it happen?

Supporting implementation, change management and programme delivery, so that research and innovation become part of routine care and day-to-day activities.

What should the future model look like?

Designing partnership models, governance arrangements, operating models and patient-centred pathways that enable innovation to scale.

Where should innovation happen?

Developing the infrastructure through master planning and PMO of the physical environments where innovation thrives, from life sciences hubs, lab space and knowledge quarters, to research campuses, experimental medicine centres and hospital-adjacent developments.

How do we know that it worked?

Measuring the outcomes that matter most. through robust implementation, benefits realisation and impact evaluation, whilst capturing, sharing and applying learning through our network of healthcare providers, academia, industry partners and innovation leaders.

Get in touch...

If this has sparked ideas, challenges or opportunities for your organisation, we would welcome the conversation. Whether you're developing a research and innovation strategy, strengthening partnerships, planning new infrastructure, or exploring how life sciences can support better outcomes, contact Archus to discuss how we can help turn ambition into measurable impact.

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