Optimising Patient Pathways: A Triple Win for Patients, Healthcare Providers, and Life Science Partners

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1. Executive summary

Health systems around the world are under growing strain from ageing populations, higher expectations, and the rising burden of chronic disease[1,2]. In the UK, these pressures are most visible in the National Health Service (NHS). More than 7.37 million people are waiting for consultant-led treatment[3], and around 13,000 hospital beds are occupied by patients who are medically fit to leave[4]. At the same time, the workforce is stretched, with around 100,000 posts vacant[5] and 6,000 fewer GP partners than in 2015[6]. The NHS remains a universal, publicly funded health system that provides care across all stages of life but rising demand and limited capacity continue to make lasting transformation difficult.

Meeting this challenge requires capability and capacity that extends beyond the health system. Both globally, and in the UK, the life sciences sector represents a partnership opportunity that can help close the gap. In the UK, it contributes more than £100 billion to the economy and supports around 300,000 jobs[7], bringing the scientific expertise, data and investment capacity needed to support system renewal. However, this potential can be disconnected from the NHS' operational needs. Innovation is often confined to pilots, and adoption varies widely across regions and care settings[8]. The issue is not a shortage of innovation but the absence of clear pathways that connect discovery with delivery.

Optimising healthcare pathways offers a repeatable method to improve how patients move through care. It requires the alignment of clinical, operational, and industry partners around measurable outcomes. Using data and clinical insight to identify bottlenecks and scale what works helps embed innovation into daily delivery and supports the ambition of the 10 Year Health Plan[9] for integrated and digitally enabled care.

Pathway optimisation benefits patients and creates shared value for healthcare providers and life sciences partners. Protagoras combines life sciences expertise with system delivery experience to help organisations design and scale practical solutions that deliver measurable improvement. In doing so, we support the NHS in achieving its ambitions and unlocking the full potential of the UK's life sciences sector.

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[1] OECD (2023). *Health at a Glance 2023: OECD Indicators*. Available at: https://www.oecd.org/health/health-at-a-glance.html

[2] Bloom D.E. et al. (2011). *The Global Economic Burden of Non-Communicable Diseases*. World Economic Forum. Available at: https://www.weforum.org/reports/global-economic-burden-noncommunicable-diseases

[3] Royal College of Surgeons of England (2025). *RTT Waiting Times Press Release, August 2025*. Available at: https://www.rcseng.ac.uk/news-and-events/media-centre/press-releases/rtt-waiting-times-aug-25

[4] UK Parliament Health and Social Care Committee (2025). *Hospital Discharge Report*. Available at: https://committees.parliament.uk/publications/47485/documents/247289/default

[5] House of Commons Library (2025). *NHS Workforce in England (Briefing CBP-7281)*. Available at: https://commonslibrary.parliament.uk/research-briefings/cbp-7281

[6] Institute for Government (2024). *Performance Tracker – General Practice in England*. Available at: https://www.instituteforgovernment.org.uk/publication/performance-tracker-local/general-practice-england

[7] Office for Life Sciences (2024). *Life Sciences Competitiveness Indicators 2024*. Available at: https://www.gov.uk/government/statistics/life-sciences-competitiveness-indicators-2024

[8] Association of the British Pharmaceutical Industry (2024). *Clinical Research in Decline: Why the UK Is Losing Ground*. Available at: https://www.abpi.org.uk/media/news/2024/january/clinical-research-in-decline

[9] Department of Health and Social Care (2025). *10 Year Plan for England*. Available at: https://www.gov.uk/government/publications/10-year-health-plan-for-england-fit-for-the-future

2. Systemic challenges in healthcare

Over the past 25 years, health systems around the world have undergone significant transformation. **Health spending per capita has tripled**[1], driven by technological advances, rising expectations, and an ageing global population. The share of people **aged 65 and over has more than doubled**[10], whilst chronic diseases now account for most global morbidity and mortality, costing the world economy trillions of dollars each year[2]. These pressures have exposed the limits of reactive healthcare models and underscored the need for collaborative, sustainable solutions.

The UK's NHS reflects these global challenges on a national scale. It faces intensifying demographic, operational, and financial strain. An ageing population, workforce shortages, and growing demand are converging to create a system locked in reactive mode rather than long term transformation.

2.1. Rising demand

Around **12.7 million people in the UK are aged 65 or over**, almost one in five citizens, and the number continues to rise. Within that group, the population aged **85 and over is expected to nearly double to around 2.6 million within the next 25 years**[11], making it the fastest growing segment of society and the group most likely to require complex, multidisciplinary care.

This demographic shift is driving sustained growth in long term conditions such as dementia, diabetes and cardiovascular disease, with around 41% of adults in England now living with at least one longstanding health condition[12], increasing the need for both clinical and social care capacity. Meanwhile, more than **7.37 million people** are waiting for consultant-led hospital treatment[3], and on any given day **around 13,000 hospital beds** – roughly one in seven – are occupied by patients who are medically fit to go home[4]. These pressures are compounded by ongoing workforce gaps, with a**round 100,000 NHS posts vacant**[5] and almost **6,000 fewer GP partners** than in 2015[6].

2.2. Funding pressures and industry disengagement

OECD data show that UK healthcare spending remains below the average of other major European health systems, both as a share of GDP and per capita[1]. This limits the capacity to invest in innovation and system improvement. Medicines and medical devices account for **around 9 percent of total healthcare spending**[13], one of the lowest shares among major European systems. This constrained allocation, coupled with complex market access processes, has made the UK a less attractive environment for global R&D investment. Several leading pharmaceutical companies have scaled back clinical research activity or delayed new projects in the UK, citing regulatory burden and slow adoption of innovation[8].

[10] United Nations DESA (2022). *World Population Prospects 2022*. Available at: https://population.un.org/wpp

[11] Office for National Statistics (2023). *National Population Projections for the United Kingdom: 2022-based.* Available at: https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections

[12] NHS Digital (2023). *Health Survey for England 2022 – Part 2: Chronic conditions, physical activity and inequalities.* Available at: https://digital.nhs.uk/data-and-information/publications/statistical/health-survey-for-england/2022-part-2

[13] Association of the British Pharmaceutical Industry (2025). *Understanding NHS Medicines Spending in England.* Available at: https://www.abpi.org.uk/media/blogs/2025/march/understanding-nhs-medicines-spending-in-england

2.3. Innovation gap

The NHS has world class expertise and data assets but often lacks the mechanism to turn individual innovations into system-wide change. New technologies are often piloted in isolation, creating a fragmented innovation landscape of pockets of excellence rather than collective progress. **The underlying challenge is not a lack of innovation, but a lack of alignment.**

Without a shared strategy that connects life sciences investment to frontline delivery, the system will continue to struggle to scale improvements. The UK governments new Life Sciences Sector Plan[14] already sets out a vision for integrated, preventive and digitally enabled care, but achieving that ambition will depend on operational models that can make national policy deliverable. This is the gap that **collaborative pathway design** can fill: a practical framework that brings NHS and industry partners together to codesign, test and scale solutions that deliver measurable value for patients and providers alike.

3. Strategic importance of life sciences in the UK

Amid these systemic pressures, the UK's life sciences sector represents one of the strongest enablers for renewal. It contributes more than **£100 billion to the economy** and supports around **300,000 jobs**[7], underpinned by global leadership in research, genomics and data-driven healthcare. Beyond its economic strength, the sector holds the expertise, technologies, and insight needed to help the NHS move from reactive care to proactive, pathway-based delivery.

In recent years, government policy has reinforced this ambition through the **Life Sciences Vision** and the **Life Sciences Sector Plan**[14], backed by more than **£1 billion** of targeted investments - including **£600 million for health data research infrastructure, £520 million for manufacturing innovation**, and regulatory reforms designed to speed up clinical trials and market access[15]. These commitments aim to make the UK one of the most attractive global environments for developing and testing new health technologies.

However, policy ambition alone is not enough. The UK's position as a life sciences leader has nevertheless come under strain. Between 2017 and 2023, industry-sponsored clinical trial initiations in the UK fell by **41 percent**[16], reflecting regulatory complexity and slow study start-up. The current challenge is not a shortage of innovation but a shortage of connective tissue between discovery and delivery, a missing link that limits system-wide impact.

[14] UK Gov (2025). *Life Sciences Sector Plan to Grow Economy & Transform NHS.*
Available at: https://www.gov.uk/government/news/life-sciences-sector-plan-to-grow-economy-and-transform-nhs

[15] Department for Business and Trade and Department of Health and Social Care (2024). *Life Sciences Vision Progress Update 2024.*
Available at: https://www.gov.uk/government/publications/life-sciences-vision-progress-update-2024

[16] Association of the British Pharmaceutical Industry (2024). *Clinical Research in Decline.*
Available at: https://www.abpi.org.uk/media/news/2024/january/clinical-research-in-decline

For life sciences partners, the incentive to collaborate goes beyond shared social purpose. It **enables earlier and richer evidence generation, faster routes to adoption, and more predictable market access**. These are the factors that determine whether research translates into sustainable commercial success. Confidence in the UK's ecosystem has weakened, highlighting the urgency to rebuild partnership models that deliver mutual benefit for both the NHS and industry.

Together, these dynamics highlight a mutual opportunity. The UK has the policy, scientific depth and data capability to lead in integrated innovation, but progress depends on turning partnership into a repeatable process rather than a collection of pilots. Pathway optimisation provides that structure - it connects NHS and life sciences strengths around measurable improvement - translating national ambition into practical delivery.

4. Opportunity: Pathway optimisation as a strategic enabler

The **10 Year Health Plan**[4] sets out a clear ambition for care that is integrated, preventive and digitally enabled, yet turning that ambition into practice has proven difficult. **Pathway optimisation** provides a way to close this gap. It is not a one-off project but a repeatable method that aligns clinical, operational and industry partners around measurable improvement.

At its heart is a simple concept – improvement must be built into daily delivery, not added as a standalone project. Pathway optimisation uses data and clinical insight to identify friction in how patients move through care and tests practical changes that can be scaled once proven effective. It builds local capability for continuous improvement – shifting transformation from isolated pilots to a system-wide process where innovation becomes embedded into routine delivery.

By helping organisations test and embed new ways of working, pathway optimisation reduces service pressure and builds local capacity for prevention and earlier diagnosis. It also strengthens collaboration between the NHS and the life sciences sector, focusing joint effort where it can most improve patient outcomes.

For healthcare systems, pathway optimisation offers a structured approach to redesigning care and freeing capacity; with NHS-industry collaboration demonstrating measurable gains in clinical alignment – for instance, lipid-management programmes achieved up to 59% higher adherence to NICE-recommended therapy in participating Trusts, according to ABPI analysis[17]. For life sciences partners, it provides an environment where innovation can be tested and adopted in real settings. Together these benefits create a foundation for sustained change across the health system.

[17] Association of the British Pharmaceutical Industry (2024). *Partnering for Progress: A Data-Driven Analysis of NHS-Industry Partnerships.* Available at: https://www.abpi.org.uk/publications/partnering-for-progress-a-data-driven-analysis-of-nhs-industry-partnerships

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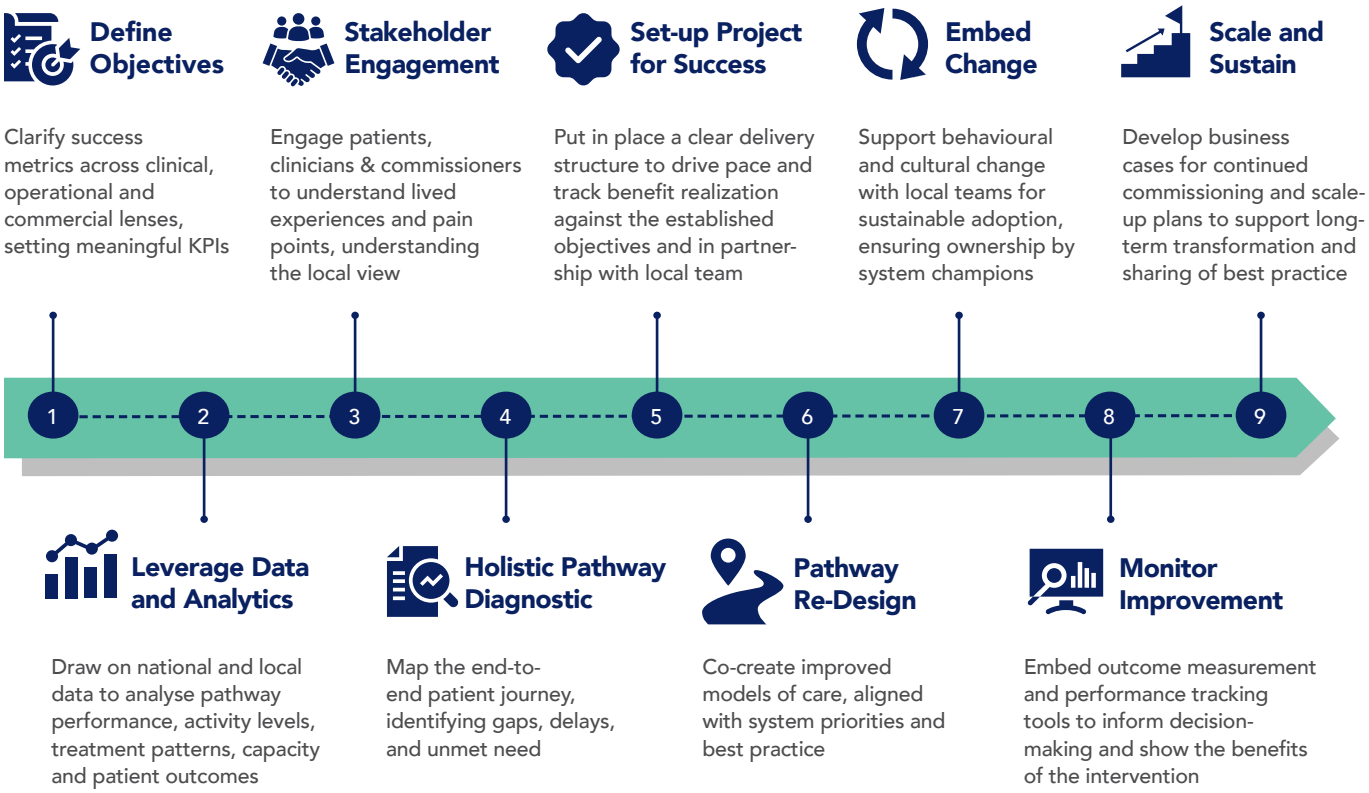
5. Protagoras' approach to pathway optimisation

The **Protagoras Nine-Step Framework** *(Figure 1)* sits at the centre of our approach, providing a clear structure that turns pathway optimisation from concept into delivery. It ensures improvement is practical, evidence-led and aligned across NHS teams, life sciences partners and system leaders. Working through these steps gives organisations a rigorous way to identify priorities, test what works and scale proven solutions.



(Figure 1)

The framework is backed by Protagoras' experience in life sciences and health system strategy (*Figure 2*). Our team of clinicians, consultants and pathway specialists combine firsthand understanding of care delivery with system level expertise, ensuring every change is evidence-based, feasible and lasting.

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(Figure 2)

In partnership with NHS organisations, Integrated Care Systems and life sciences partners, this approach converts shared insight into measurable improvement. It supports a more resilient NHS, better patient access, and a reliable route for life sciences partners to generate evidence and scale innovation.

Together, these outcomes define the **triple win** at the core of pathway optimisation – improving care for patients, strengthening NHS services and advancing the UK life sciences sector.

6. The bottom line

The NHS and the life sciences sector share one goal – delivering better care through innovation that strengthens, rather than burdens, the health system. Achieving this depends on collaboration that embeds new approached into everyday delivery. Pathway optimisation provides the structure to make that collaboration real – translating shared ambition into measurable improvement for patients and providers alike.

Sustained progress will reply on coordinated action across healthcare, policy and industry to align priorities and resources around what works.

Protagoras Advisory works with healthcare and life sciences partners to turn this intent into action – building a health system that delivers for patients, strengthens the NHS and unlocks the full potential of the UK's life sciences sector.

Contact Us

To discuss how Protagoras Advisory can support your organisation in optimising patient pathways, please contact:

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