

The Innovation Ecosystem Programme

How the UK can lead the way globally
in health gains and life sciences
powered growth

Summary





Foreword

The UK has a proud record of innovation in healthcare and the deployment of innovations. Every day in the hospital and across the wider integrated care system in which I work, I see **how patients benefit from innovations designed by UK life sciences innovators, developed and trialled by NHS staff, and delivered for the first time in the world to UK patients.** The NHS pioneered procedures such as intra-ocular lens implants and total hip replacements and introduced novel technologies like CT and MRI scanning. Today exciting innovations are harnessing AI for faster image interpretation, and automation of laboratory and genomic testing to dramatically improve treatment choices. We should be in no doubt that our ecosystem has enabled earlier access to these innovations and transformed people's lives.

Every day I also see **the very real economic benefits innovation brings.** I have the privilege of working in a world leading life sciences cluster, bringing employment and skills to the region and the UK – from apprenticeships to Nobel Prize winning academics – a community of energy and creativity that benefits the health of the nation and its economy.

People from across the innovation ecosystem we have spoken to have **a clear sense that the UK can, and should, be the world's innovation test bed.** Their confidence stems from our world leading academic institutions, globally respected regulators, amazing patient groups and third sector organisations, and a world leading life sciences sector with established firms and cutting-edge innovators. Where this has come together, we lead the world in emerging technologies like genomics and AI. Our healthcare staff are motivated to lead and drive this. We know that staff undertaking innovation and research are the most engaged and motivated in the NHS.

Innovation is more important than ever. Our healthcare system is changing, and it must. It is estimated that by 2037 there will be 55% more people over 85 and as people age they require more care and more complex care. Furthermore, the proportion of our working age population is decreasing, putting pressure both on the NHS workforce and on public finances. Without embracing innovation, we put at risk having a sustainable healthcare system that meets the needs of our population. I see this in the eyes of the patients and staff on the challenging days in the hospital.

Yet despite this urgent need to act, the staff, patients and wide range of partners we spoke to **sensed we were missing the opportunity to respond to the challenge.** Many said it took too long or was too difficult to try something new in a way that worked for them. Staff feel they do not have the capacity or the support to test, adopt and scale innovation, and even when they do, they have disjointed policy and regulation hurdles to clear, often within sceptical or risk averse cultures. Industry and academic partners often find it difficult to establish effective partnerships with NHS providers and integrated care boards. We heard that nationally, NHS England and government could do much more to provide clarity and consistency in their policy and priorities, and support to promote collaboration between the healthcare system and industry and academic partners.

If we do not address these issues patients will not get earlier access to innovations, and they may not get access at all. We are starting to see companies planning not to launch medical devices in the UK. Some innovations arising from publicly funded research are benefitting patients in other markets but not here. If the UK has not supported the development and uptake of innovations, they can be priced at levels that do not deliver justifiable value.

The scale of the opportunity is huge and wide ranging: for instance, automation to support the workforce, miniaturisation to allow people to receive more diagnostic tests and care out of hospital, and personalised biomarkers to improve outcomes and pick up disease earlier. The commitment of time and effort from industry members, academics, NHS staff and patients we have worked with during the review gives me confidence that we can make real progress in short order.

Most importantly, I want to emphasise that **realising the opportunities will require a greater scale of ambition, with the funding, long-term planning and support to match.** Many of the recommendations in this report will not feel new; they will be familiar from past discussions and reports on the topic. What is different here is the consistent, co-ordinated, long-term approach to fixing what is holding us back, and fixing it collaboratively. Delivering the recommendations set out here will take time, and we must therefore focus immediate action on our key priorities – agreeing our core national priorities, enhancing and simplifying our innovation oversight, mobilising our core clusters behind this work and engaging with the innovation leaders of the future.

I am grateful to Amanda Pritchard, Chief Executive of NHS England, for commissioning me to undertake this work, and to those at NHS England and other bodies who have supported me to do so. I am particularly grateful to the members of the Advisory Group, listed below, who have co-led the work with me and to the many others who have given their time generously in interviews, roundtables and developing and testing the recommendations. All have maintained the balance of co-creation and robustly represented their specific stakeholder views. This must continue as we take forward the next stage of work.

Roland Sinker CBE

Chief Executive of Cambridge University Hospitals NHS Foundation Trust and Cambridge Biomedical Campus, and National Director for Life Sciences, NHS England



Please click here to read the full report

"Healthcare is changing now, and the potential is enormous. Every partner holds a vital piece of the complex puzzle, and only deliberate collaboration can improve patient outcomes and drive UK growth. We can be left behind or work together to seize this opportunity."

Roland Sinker CBE

The Innovation Ecosystem Programme Advisory Group

| | |
|--|---|
| Roland Sinker CBE (Chair) Chief Executive of Cambridge University Hospitals NHS Foundation Trust and Cambridge Biomedical Campus, and National Director for Life Sciences, NHS England | Dr. Kristin-Anne Rutter Executive Director, Cambridge University Health Partners, and the Cambridge Biomedical Campus |
| Steve Bates OBE Chief Executive Officer of the BioIndustry Association (BIA) | Nicola Perrin MBE Chief Executive of the Association of Medical Research Charities (AMRC) |
| Professor Lucy Chappell Chief Scientific Adviser to the Department of Health and Social Care (DHSC) | Dr Sam Roberts Chief Executive of the National Institute for Health and Care Excellence (NICE) |
| Rosalind Campion Director of the Office for Life Sciences (OLS) | Dame June Raine DBE Chief Executive Officer of the Medicines and Healthcare products Regulatory Agency (MHRA) |
| Dr. Vinod Diwakar National Director of Transformation, NHS England | Verena Stocker Director of Innovation, Research and Life Sciences Strategy, NHS England |
| Peter Ellingworth Chief Executive Officer of the Association of British HealthTech Industries (ABHI) | Richard Stubbs Chair, Health Innovation Network and Chief Executive, Health Innovation Yorkshire and Humber |
| Professor Gary Ford CBE Chief Executive Officer, Health Innovation Oxford and Thames Valley | Dr Richard Torbett MBE Chief Executive of the Association of the British Pharmaceutical Industry (ABPI) |
| Professor Dame Sue Hill Chief Scientific Officer for England and SRO for NHS Genomics, NHS England | Will Warburton Managing Director of the Shelford Group |
| Jacob Lant Chief Executive of National Voices | Will Field Head of Policy, Innovation, Research and Life Sciences, NHS England |

The UK has more **‘unicorns’** (start-ups that have grown to be worth more than **\$1 billion**) than any other country in Europe

“If we’re serious about being a global player we must be honest about our strengths - and pay real attention to fostering the areas of connection, the ‘sticky edges’ between partners; and unleash our most visionary clinical academics.”
Roland Sinker CBE

Summary

Context

The NHS faces a pivotal moment of risk and opportunity and there is an urgent need to act.

The NHS faces significant challenges, including workforce pressures and rising care demands, but has unmatched potential to lead in healthcare innovation. By leveraging its life sciences sector and rich health data, it can transform patient outcomes and the UK economy, provided decisive action is taken at all levels to overcome barriers.

Innovation ecosystem programme

The Innovation Ecosystem Programme was given a mandate to foster collaboration between the NHS and key stakeholders.

The Chief Executive of NHS England tasked the IEP with fostering collaboration between the NHS, industry, academia, and regulators to streamline healthcare innovation. Our recommendations stem from analysis of extensive engagement – hundreds of interviews, roundtables and working group discussions – through 4 targeted workstreams led by the chief executives and chairs of many of the key organisations in the life sciences ecosystem.

Findings

Progress is being held back by poor alignment, culture barriers, process and capabilities.



There is a solid foundation to build on, but we must expand and translate what we do well. The NHS excels in early-stage innovation, real-world testing, and flagship programmes like cancer and genomics. We must build on these successes and scale them, while embracing emerging technologies to drive prevention, early diagnosis, and out-of-hospital care. This requires new skills and approaches.



We must focus on the biggest priorities. Transforming NHS services demands prioritising resources for areas of greatest need, aligned with health and economic goals. Shifting from individual products to broader categories of innovation and planning over longer horizons—3, 5, and 10 years—is essential.



The NHS cannot do this alone or from the top down. Innovation requires aligned research infrastructure with simplified access for partners. Local systems must collaborate effectively, supported by national levers, without overly prescriptive policies that hinder local flexibility and partnerships.



Success will come down to getting the culture right, building a skilled workforce and putting the right enablers in place. Effective innovation adoption depends on supportive culture, leadership, and enabling tools like data, procurement, and incentives. Streamlined processes and clear, consistent rules will empower NHS staff and foster collaboration with industry, academia, and patients.



This will take time, and we will need to be consistent and long term in our approach. Overcoming long-standing barriers requires a consistent, long-term strategy with collective accountability and investment over 3 to 10 years. Success depends on shared commitment and coordinated efforts by all partners.



England was **5th** out of 13 European countries in median time for new medicines to reach patients between 2019 and 2022

Summary

Recommendations

Comprehensive recommendations with opportunities for early progress.

Our recommendations focus on leveraging the NHS’s strengths to evolve the innovation ecosystem by testing, adopting, and scaling innovations for the benefit of patients and staff. This ambitious programme requires collaborative reforms, as no single action or partner can deliver change alone. Significant trade-offs, complex policies, and funding adjustments will be necessary.

The key message is clear: all partners must collaborate, prioritise, and align efforts to meet the needs of patients and the public.

Evidence suggests that staff engaged in research report higher job satisfaction, research-active trusts experience lower staff turnover, and hospitals involved in research demonstrate reduced mortality rates.

The innovation ecosystem and the NHS must be aligned to support the transformation of healthcare and the government’s health and economic growth missions.

- 1. **Make innovation core to NHS business:** Integrate innovation with NHS priorities alongside education and research and do so in a way that also works for the wider ecosystem.
- 2. **Prioritise and co-ordinate innovation around the shifts and goals for health:** Focus on healthcare shifts such as digitalisation, prevention and home care, with priorities harmonised across NHS plans. This will require choices to be made on specific shifts rather than attempting to do everything.
- 3. **Establish co-ordinated oversight and aligned innovation funding:** Consolidate funding and oversight to support the innovation priorities with clearer accountability.
- 4. **Develop incentives to support and monitor delivery:** Use key performance indicators (KPIs) to track and incentivise innovation adoption within NHS governance and oversight.

Build the skills, capabilities, capacity and culture required to prepare the NHS workforce for future ways of working and to help them collaborate confidently with patients and citizens, industry and academia.

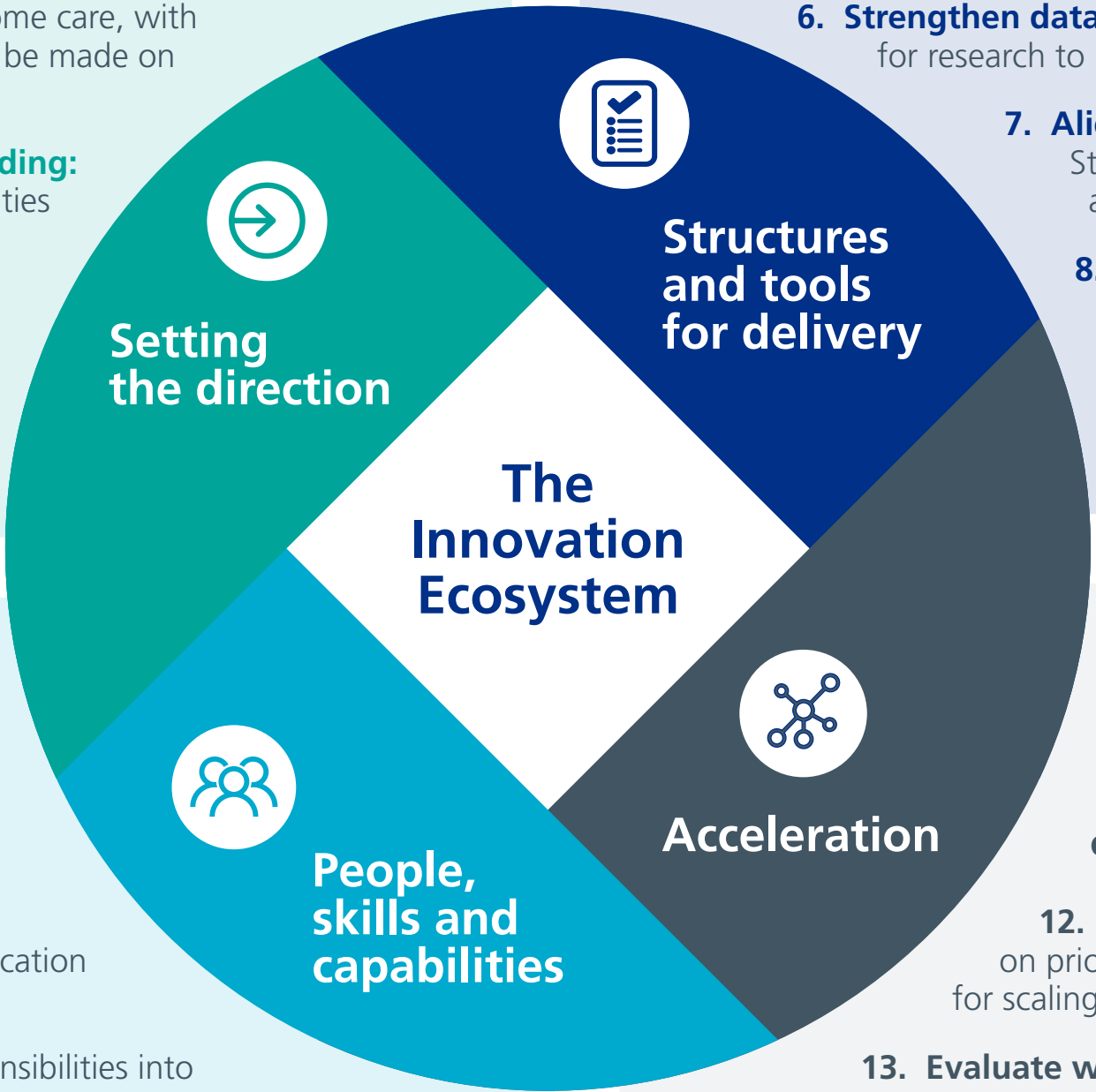
- 9. **Build the right skills and capabilities:** Develop innovation skill frameworks and training across NHS roles, with industry and education partners supporting future workforce readiness.
- 10. **Create time in jobs for innovation:** Integrate innovation responsibilities into roles, with dedicated time for related activities. Establish joint clinical fellowships with industry.
- 11. **Foster a positive culture and understanding:** Identify the next generation of innovation leaders, promote cross-industry exchanges, celebrate innovation achievements, and appropriately manage the different risk profiles and success rates of innovation. Speak well of each other.

Accountability, oversight and leadership at all levels. This must be supported by standardised tools, policy and guidance for the key enablers of innovation testing and adoption, to support confident local decision-making.

- 5. **Simplify and strengthen the structures and functions for innovation in the NHS:** Boost NHS leadership and capacity to test and adopt innovation and develop the missing expertise in collaboration with Health Innovation Network (HIN) support.
- 6. **Strengthen data access and information governance:** Expand secure data access for research to prioritise testing and monitoring of innovation.
- 7. **Align procurement to facilitate rollout of tested innovations:** Standardise procurement and facilitate easy transfer of innovations across the NHS.
- 8. **Develop commercial approaches to share value and adoption in testing innovations:** Update intellectual property (IP) policies and share value through risk-managed partnerships.

Alongside action to redesign the architecture and wiring of innovation, the programme partners should work together to mobilise major geographies behind current priorities – working with centres across the UK.

- 12. **Mobilise local systems behind work:** Key localities should lead on priority innovations, collaborate with industry, and share best practices for scaling and implementation.
- 13. **Evaluate what works:** Build robust evaluation into innovation efforts to assess health, social and economic impacts.
- 14. **Establish peer-learning networks:** Create networks to connect successful innovators with policymakers and others for shared learning and support.



Summary

Next steps

Getting on with the priority actions and setting the long-term approach.

This report concludes the current phase of work but highlights the need for further action. Key partners in the IEP must collaborate in the coming months to plan the delivery of the recommendations. The forthcoming 10-Year Health Plan, Innovation and Adoption Strategy, and Life Sciences Sector Plan present a vital opportunity to embed these recommendations into national long-term strategies. However, progress should not wait for these developments. Immediate action and discussions are needed to prioritise and implement key steps:

Embedding recommendations



Feeding the report's recommendations into the development of the 10-Year Health Plan, the Innovation and Adoption Strategy and the Life Sciences Sector Plan

Enhancing governance



Enhancing our cross-organisational governance – including how we may enhance the Accelerated Access Collaborative (AAC), or equivalent, to deliver

Aligning priorities



Agreeing the national priorities and beginning the work to align innovation activity and funding

Regional acceleration



Starting 'acceleration' in a set of geographies to further refine the recommendations and to start to make progress



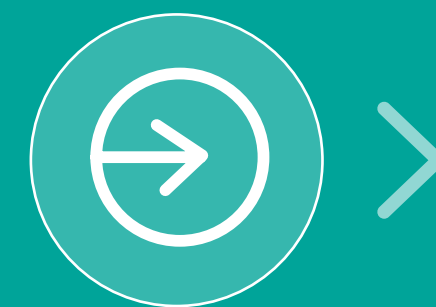
“Innovation, research and life sciences offers the opportunity to significantly enhance patient outcomes and benefit the UK economy and society. Today's report spotlights the potential of emerging technologies, world leading research and life sciences to better enable the NHS to innovate, make new discoveries and deliver more personalised services and it sets out what needs to be done to ensure the NHS, scientists, industry and innovators have effective partnerships and seize these opportunities.”

Vin Diwakar interim National Director of Transformation, NHS England

Recommendations of the Innovation Ecosystem Programme

Introduction

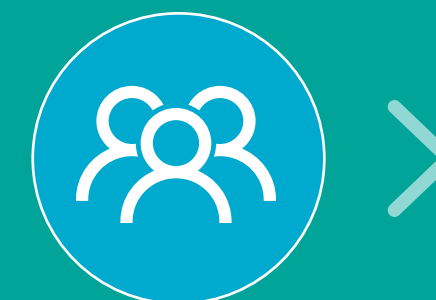
The recommendations set out practical changes to evolve the innovation ecosystem, enabling the NHS to meet future healthcare needs through testing, adoption, and scaling of innovations for patients and staff. They should be implemented as a cohesive package, as no single solution can create a thriving ecosystem. Prioritisation and clear delivery plans will be essential, requiring action from all partners. **The key message is clear: collaboration, alignment, and shared effort are vital to achieve these goals and better serve patients and the public.**



Setting direction



Structures and tools for delivery



People, skills and capabilities



Acceleration

➡ Setting direction

What is needed?

The NHS faces a pivotal moment of risk and opportunity and there is an urgent need to act.

The NHS faces significant challenges, including workforce pressures and rising care demands, but has unmatched potential to lead in healthcare innovation. By leveraging its life sciences sector and rich health data, it can transform patient outcomes and the UK economy, provided decisive action is taken at all levels to overcome barriers.

Why is it important?

The Innovation Ecosystem Programme was given a mandate to foster collaboration between the NHS and key stakeholders.

The Chief Executive of NHS England tasked the IEP with fostering collaboration between the NHS, industry, academia, and regulators to streamline healthcare innovation. Our recommendations stem from analysis of extensive engagement – hundreds of interviews, roundtables and working group discussions – through 4 targeted workstreams led by the chief executives and chairs of many of the key organisations in the life sciences ecosystem.

“New technologies are changing the world we live in at a blistering pace, and patients rightly expect the NHS to harness the best of this to improve the care on offer to communities up and down the country. To unlock the true power of innovation and to fix the most pressing health challenges facing us as a society, it is vital that patients and the public play a leading role in both identifying the problems and co-designing the solutions... It has been a real pleasure sharing insights from our members into this work. It is only through equal partnership between clinicians, industry, patients and the voluntary sector that can we ensure everyone benefits and we build a genuinely equitable future for the NHS.”

Jacob Lant, Chief Executive of National Voices, England's leading coalition of over 200 independent health and social care charities



The population aged 85 and over, comprising **1.6 million (2%)** in 2016, is projected to double to **3.2 million (4%)** by 2041 and treble to **5.1 million (7%)** by 2066.



Setting direction

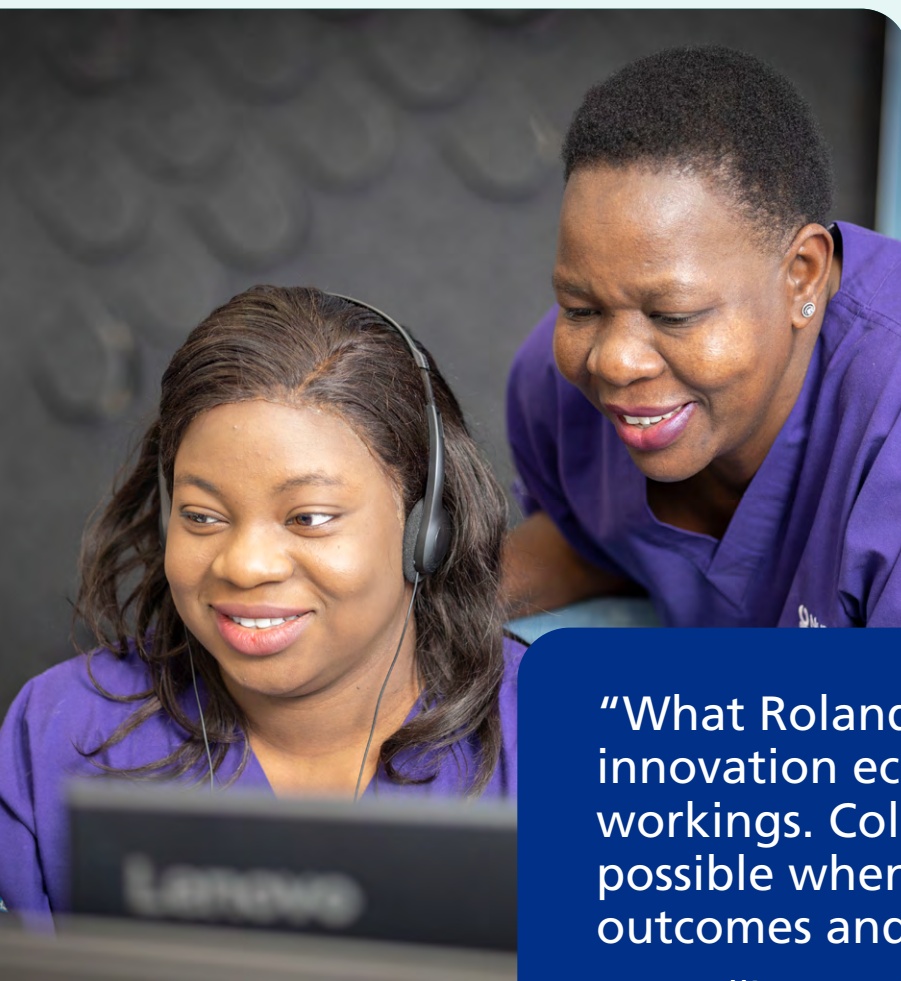
How to achieve this

1

Make innovation core to NHS business



Government and the NHS should send a clear **signal that innovation and working with industry is a core part of how the NHS delivers care**, alongside education and research. The NHS 10-Year Health Plan and the Innovation and Adoption Strategy should set direction on the importance of innovation in achieving the NHS's goals both in terms of improving the nation's health and driving economic growth.



"What Roland and the team have achieved is a powerful blueprint for an effective innovation ecosystem, crafted by those within the NHS who understand its inner workings. Collaboration has been key to this, demonstrating exactly what is possible when we align our efforts toward a common goal of improving patient outcomes and securing the NHS's future through innovation."

Peter Ellingworth, Chief Executive Officer of the Association of British HealthTech Industries (ABHI)

2

Prioritise and co-ordinate innovation around the shifts and goals for health



The priorities for innovation must focus on delivering the shifts in care required to deliver our goals for health and care: from hospital to community, analogue to digital and sickness to prevention. These priorities should be aligned across the 10-Year Health Plan and where possible include the work of the Office for Life Sciences's Healthcare Goals programme (formerly known as the Healthcare Missions). Priorities should be agnostic of any specific technology or product but must be ambitious and forward looking to address the NHS's significant challenges and recognise the radical change innovations can enable.

The NHS, regulatory bodies, charities and government research infrastructure should align their activities and funding for innovation, with activities largely focused on, and funding supportive of, the priorities. This should not interfere with the delivery of core regulation, assessment and adoption of those technologies that do not directly align with the priorities.

In seeking partnership with the NHS, industry will need to work more collaboratively with the health system, working together to get to stronger proposals that show how they contribute to these priorities and share early information on the pipeline of innovation in these areas.

The priorities should be committed to – with funding and delivery plans – over a multi-year period, but with opportunity for review and change in case unintended consequences emerge for example, inequity of outcomes.

All the other systematic recommendations we make apply to all innovations, so that it is also easier to develop and adopt innovation that falls outside the aligned priority areas.

3

Establish co-ordinated oversight and aligned innovation funding



Innovation funders **should work together to establish fewer but larger funding pots** for the national innovation priorities with a greater focus on the later stages of the innovation process. **NHS England, National Institute for Health and Care Research (NIHR), the Department of Health and Social Care (DHSC), UK Research and Innovation (UKRI), Innovate UK and local NHS organisations should collectively align some of their innovation budgets** to create co-ordinated funding vehicles that can be deployed to support adoption and spread of innovation that aligns with the national innovation priorities. In the first instance, this alignment should concern existing funding, with the investment case for additional funding developed as part of the 10-Year Health Plan.

To support co-ordination and oversight, **government and NHS England should clarify and simplify current national governance for the oversight and co-ordination of innovation activity and funding.** This should include enhancing the Accelerated Access Collaborative (AAC), or something like it, so it has clearer accountability to ministers, authority to drive co-ordination of ecosystem activity, including authority to direct funding allocated to support innovation activities. This governance should include transparency on nationally agreed metrics for all partners to track progress against agreed innovation priorities.

Funding mechanisms should be developed – building on existing approaches where possible – to allow both charities and industry to participate by contributing capital for specific innovation programmes or awards.

Programmes must be deployable on a multi-year basis over the course of a spending review cycle and be flexible across years based on milestones. Innovation budgets should span multiple spending reviews. Regular gateway reviews may be needed, recognising that not all funded innovations will be successful and that there is an opportunity for rapid termination of programmes that are not delivering. Robust evaluation and monitoring aligned to the government's Magenta Book should continue to be in place to assess delivery and new investments must include provisions to deliver this evaluation.

4

Develop incentives to support and monitor delivery

NHS England should derive KPIs for the testing and adoption of innovation and, once agreed through the co-ordinating governance, these should be rolled out nationally and reflected in accountability, oversight and governance frameworks, as well as individual provider board meetings. They should both be set at the outcome level to understand the impact of developed innovation and as a way of monitoring implementation to allow delivery to be adjusted where needed. NHS England should support the development of data sources to support this monitoring.

The testing and adoption of innovation should feature in the objectives of all NHS England directorates and be planned for as part of annual business planning as well as reported on annually.

Requirements and guidance on **how ICBs meet their legal duty on innovation should be strengthened to align with research**, with relevant metrics and capabilities built into the annual assessment of ICBs.

NHS Payment Scheme changes should reflect the specific prioritised innovation delivery that aligns with the national priorities.

The Care Quality Commission should consider how it can best include the KPIs and broader effectiveness of the development and adoption of innovation in its evaluations.

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Foreword

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Next Steps

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Case Studies

Structures and tools for delivery

What is needed?

Accountability, oversight and leadership at all levels.

This must be supported by standardised tools, policy and guidance for the key enablers of innovation testing and adoption, with the key aim of confident local decision-making.

Why is it important?

There are complex and often ineffective accountability and oversight structures for health innovation due to the disparate range of innovation programmes, the governance of which often sits outside usual operational routes.

The 'wiring' to support innovation is inconsistent across the NHS and is lacking in key areas. This means significant variation in the delivery and capability of systems to develop and scale innovation. Ambiguity around pivotal enabling factors such as intellectual property (IP) and data sharing are often barriers to effective collaboration between the NHS and industry, making testing and adoption harder to achieve



The Life Sciences sector makes **£94 billion** for the UK each year, and employs **280,000** people

“Medicines and vaccines can support the three strategic shifts the Health Secretary wants to see. It is important for the NHS 10-Year Plan and the Innovation and Adoption Strategy to take Roland Sinker’s recommendations forward to help the NHS genuinely lead healthcare innovation on a global scale.”

Richard Torbett MBE, Chief Executive of the Association of the British Pharmaceutical Industry (ABPI)



Structures and tools for delivery

How to achieve this

5 Simplify and strengthen the structures and functions for innovation in the NHS



To reflect the increasing need to deliver innovation across primary and secondary care, providers and primary care networks (PCNs) should identify leadership and capacity for the testing and adoption of innovation. This will enable mechanisms to respond to both national and local innovation priorities.

Regions should work together to understand how they can most effectively mobilise across their local partners and leadership.

The approach will not be the same across areas but should include how ICSs and providers align with, for example, NIHR infrastructure, industry, patient groups and charities. The approach should be set out in local joint forward plans. Health innovation networks (HINs) must support their co-ordination and locality partnerships should be the vehicle that supports this work.

HINs are an essential part of the innovation infrastructure and their role in supporting regions and ICBs should be strengthened. Accountability and oversight of delivery must be better integrated with regional and ICB governance. Clearer agreement is needed on the role HINs can play in supporting ICBs, with consideration of capacity, capability gaps and skills, particularly skills in specialist areas such as IP, data governance, commercial contracting and evaluation.

The central co-ordinating function of HINs should be further strengthened to support the national impact of the network and provide a forum through which industry, charities and national bodies can interact with the HINs on a national basis.

Building on learning from past programmes, including those overseen by the AAC, national and system partners should together strengthen central functions in:

- **horizon scanning – sharing resources across NHS England, the Medicines and Healthcare products Regulatory Agency (MHRA) and National Institute for Health and Care Excellence (NICE)** to identify the pipeline of innovative products and approaches that align to priorities
- **earlier implementation planning for testing and rollout of innovative approaches** – building on programmes such as NICE's Early Value Assessment, and using the appropriate delivery method for the innovation, considering how the HINs, clinical networks, Getting It Right First Time (GIRFT) Programme and commissioning will support this
- **identifying the required enablers** for access and adoption (for example, digital and procurement) and how agencies (for example, regulatory) understand and put them in place
- **monitoring impact**, implemented by both industry and the NHS as part of testing and planning

6 Strengthen data access & information governance



We should continue to shift from data sharing to secure data access by default for NHS data, including developing the network of NHS Research Secure Data Environments as the gateway for research and industry to access data safely and securely when they are approved to do so. **Evaluation and testing of innovation should be made a national use case within the NHS Research Secure Data Environment Network** including case finding and impact evaluation.

All providers, including GPs, should be required to publish standard data on care episodes into an ICS-level linked longitudinal shared record – with the ICS/ICB designated as the data controller, and allow researchers to access a version in accordance with all information governance safeguards, through the network of NHS Research Secure Data Environments.

The NHS should work with MHRA and NICE to identify how to use the Secure Data Environments **effectively and safely for effective post market surveillance**.

Partners should focus the development of data use on the priority areas for innovation.

7 Align procurement to facilitate rollout of innovations post testing

NHS England should continue to work with NICE to establish, and improve, rules-based access pathways for the procurement of all technologies that are applicable at national levels, building on the recent proposals for the Integrated Rules Based Pathway (IRBP) for MedTech as well as long-standing arrangements for medicines. NHS procurement should support pull through of innovation being developed in R&D infrastructure where there is evidence for its effectiveness.

NHS England should develop a mandated equivalent of the Treasury 'Green Book' for business cases for innovation, to give consistency to the evidence requirements for adoption and procurement of innovations yet to be nationally assessed and recommended. This should align with NICE's assessments of resource impact and include an approach to assessment of environmental and health inequalities impact of innovative technologies.



8 Develop commercial approaches to share value in testing of innovation

NHS England should refresh national IP policy to provide clarity to all partners. As part of this, NHS England should identify appropriate ownership models for IP that can create value for the NHS, and enable benefits realisation of IP, while maintaining robust information governance (IG) safeguards.

Work should be undertaken to explore more innovative commercial models that would help NHS organisations to effectively manage the risk that, following testing, innovations do not deliver the required outcomes. NHS England should provide systems with access to expertise in developing appropriate commercial arrangements to support the testing and adoption of innovation in a way **that shares the value created, incentivises delivery of outcomes and allows partnerships to be developed that cross from development into rollout where there is benefit to the system.**

The government has invested in **data infrastructure** to support researchers and innovators safely access NHS data - we now have more than **500 studies** active in the Secure Data Environment network

People, skills and capabilities

What is needed?

The NHS must build the required skills, capabilities, capacity and culture to empower and enable its workforce to be prepared for the future and to confidently collaborate with patients, the public, industry and academia.

Why is it important?

For innovation to succeed, everyone in the healthcare ecosystem needs to support the creation, testing, adoption and scaling of innovation, but they cannot unless they have the right skills, leadership and capabilities to support collaboration. Innovation is seen as a 'nice to have' rather than a core competency and part of roles across the healthcare ecosystem.

The HealthTech industry makes a vital contribution to **economic growth** in our country. The industry employs over **145,700 people across 4,300 companies**, mostly small and medium sized enterprises (SMEs).

"We must speak well of each other."



How to achieve this

9

Build the right skills and capabilities



10

Create time in jobs for innovation



11

Foster culture and understanding

NHS England, professional bodies and the Royal Colleges should **develop capability frameworks for innovation** for all staff, clinical leadership and board-level executives and non-executives. Skills should include understanding the critical success factors in innovation adoption, undertaking innovation evaluation, managing risk, working with external partners; agile change management; commercial awareness and skills including value sharing arrangements. This work should align with similar ongoing work around research.

The NHS should review the various **innovation** adoption programmes supporting leadership development for innovation, promoting and integrating them where possible to simplify the offer.

Industry, Royal Colleges and universities should work with the NHS to **develop the workforce of the future**, one with the skills to use innovations that are on the horizon in their area of practice in the next 5 years.

NHS systems should embed **innovation expertise in relevant job descriptions** and protect time for leadership of innovation alongside activities such as research and education for everyone. Joint efforts are needed to establish dedicated time for education, research and innovation activities, along with integrated training pathways. This approach will help prevent competition for workforce incentives and support a cohesive message on the importance of building capacity in both research and innovation across the NHS.

Leadership and responsibility for innovation should be reflected in the banding process for roles within job descriptions. This could be linked through performance management.

Joint clinical innovation fellowship posts with industry should be introduced to embed expertise in NHS providers and improve collaboration.

National clinical leadership should **work to identify and support the 200–300 innovation leaders of the future** – those who are going to advocate and drive change in their systems. This should include partnering and working with patient groups to identify citizen leaders.

Education opportunities should be shared across industry and NHS researchers and staff.

Secondments and role transference should be facilitated between industry, academia and the NHS at every career stage.

Innovation testing and adoption should be visibly championed and celebrated not only to staff but the public. Build the testing and adoption of innovation into job descriptions, evaluations and awards.

The recommendations of the Messenger Review should be embedded, ensuring leaders are conversant in the latest developments and implementing innovation. We also need clear, consistent communication on innovation priorities, with leaders articulating what needs to happen and crucially how and why.

We must speak well of each other.

Acceleration

What is needed?

The recommendations of this report are focused on the architecture and wiring of innovation – these will take time to implement and take effect. However, **the NHS, government, industry and academia should work together to mobilise major geographies behind the key priorities now.** This should be done with centres across the UK that have shown excellence in innovation development and adoption. We will work in partnership with localities as the first places to develop and implement the changes set out in this report and build the case for further investment. We will put in place a forward-looking approach to evaluation – robustly assessing innovation and the ways of working.

Why is it important?

Throughout developing this report, we have heard of the need to balance top-down direction and local flexibility on delivery. Therefore, major localities need to come forward to lead and show a willingness to partner on national priorities; specifically, to develop best practice for delivering transformation and the adoption of innovation, and to share learning across the system.

“...the NHS, government, industry and academia should work together to mobilise major geographies behind the key priorities now.”

How to achieve this

12

Mobilise local systems behind work

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Major localities should come forward to accelerate transformation in priority areas and to act on the recommendations of this review, including collaboration with industry to consider life sciences sector-specific recommendations.

National teams should work with these localities to:

- provide insights and evidence for future investment in innovation and adoption, by working with national teams to articulate the benefits from supporting the design, development and deployment of innovation

- demonstrate a mechanism and the agility to respond to national priorities
- demonstrate how different localities can work with industry and other partners to support investment and growth (where applicable)
- identify and share best practice in the practical implementation of success enablers (IP, data, procurement, etc)
- develop standardised innovation pathways and accelerate scaling in priority areas or in response to patient/population needs

Where agreed, **these localities will be tasked with accelerating progress on the nationally designated innovation priorities.**

13

Evaluate what works

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We need a robust approach to evaluation designed from the start, and which is aligned to and supports NICE assessments, to build evidence of both the health, social and economic impact of innovations being developed, and best practice ways of working. Provision should be made as part of new investments in innovation to support this evaluation.

14

Establish peer learning networks

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Connecting people doing this successfully with those who want to be powerful. Connecting those who have experienced the challenge of successfully testing, adopting and scaling innovation with those who make policy is also powerful. Both have the potential to spread best practice and provide further support to others.
We must establish national peer learning networks to achieve these 2 things.



Next steps

The recommendations in this report set out the practical changes needed to evolve the ecosystem to meet the needs of the future through testing, adopting and scaling innovation for the benefit of patients and staff; and to support economic growth. They represent a complex, ambitious programme of work. We are aware that some of the recommendations are starting to be addressed, while others will need further development and agreement before implementation.

The NHS cannot make these changes alone. The key message from the Innovation Ecosystem Programme (IEP) to all partners is to collaborate, prioritise and align to better meet the needs of patients and the public.

This report marks the end of this phase of our work together, but there is still more to do. The key partners in the IEP alongside other relevant programmes within NHS England and DHSC should come together over the next few months to agree when and how we want to deliver. The forthcoming 10-Year Health Plan, Innovation and Adoption Strategy and Life Sciences Sector Plan offer an opportunity to respond to and implement the recommendations from our programme in national long-term strategies and provide an even firmer grounding for these reforms in support of the wider ambitions for health and care the plan will set out.

But the development of the 10-Year Health Plan should not stop us from getting on with making progress now.

The forthcoming 10-Year Health Plan, Innovation and Adoption Strategy, and Life Sciences Sector Plan present a vital opportunity to embed these recommendations into national long-term strategies.

We welcome further discussion on where we should focus immediate action, but this must include:



Embedding recommendations

Feeding the report's recommendations into the wider national plans and strategy

The 10-Year Health Plan, Innovation and Adoption Strategy and Life Sciences Sector Plan provide the opportunity to set a clear signal of the importance of innovation to the NHS and the role it can play in supporting the government's health and economic growth missions. The development of these documents should build on the IEP's recommendations set out in this report and be the vehicle to set a clear long-term plan for delivery. They should also consider whether we can and should go further, setting a bigger ambition for how innovation can support the transformation of the NHS. The stakeholders and partners we engaged with are ready to contribute to the development of these documents.



Enhancing governance

Enhancing our cross-organisational governance, alignment and funding and using this mechanism to make trade-offs as to the focus and pace of innovation adoption

The IEP programme benefitted from the engagement with many leaders and stakeholders who support the testing and adoption of innovation. This engagement must continue through our governance forums, which should be enhanced and given clear authority to drive delivery and direct spend but with transparency over partner actions. We also need to consider their membership – to ensure voices from within NHS systems are represented in the delivery of the recommendations and held responsible.



Aligning priorities

Agreeing the national priorities and beginning the work to align innovation activity and funding behind them

Ultimately given the challenges facing the NHS, the limited government funds available and agendas of different stakeholders, there are likely to need to be trade-offs in the implementation of the recommendations. These are most likely to be around:

- the level and type of funding that can support the adoption and testing of innovation
- how widespread and quickly the NHS can address the structural and capability recommendations, and how it balances the focus on advancing the 'acceleration' proposals versus building universal capacity
- the number and breadth of focus areas for the testing and adoption of innovation, and the order and priority with which they are addressed

These trade-offs can best be made by continuing the collective conversation across all stakeholders.



Regional acceleration

Starting 'acceleration' in a set of geographies to further refine recommendations and to start to make progress

Given the existing capabilities and networks in the UK, it will be possible to move forward within existing budgets and plans with the acceleration phase of this work, testing out some of the recommendations and further refining them for broader role out. This will allow progress to be made and maintain momentum, as well as helping to inform longer term planning.

Case Study

NHS Innovation Accelerator (NIA) – Isla

This case study highlights a solution to the challenge of delivering efficient remote care in the NHS, particularly amidst rising demand for clinical services and the need for effective patient monitoring.

Approach

Isla is powering a more scalable way to deliver healthcare by:

- Providing clinicians with a way to understand remotely how their patient’s conditions are changing over time and make informed and proactive clinical decisions without seeing patients in person.
- Supporting all clinical specialties by enabling clinicians to configure automated digital pathways to collect images, videos, sound recordings and clinical forms from patients, families and other clinicians at important points along the care pathway. This asynchronous stream of information transforms triage, remote consultations, long-term monitoring and postoperative care; dramatically increases provider capacity; and provides a tool to manage the increasing demand for clinical services.

Context

Isla is a digital pathway platform that enables clinical teams to implement highly automated and efficient digital pathways using secure submission of multimedia and clinical data. Integrated into NHS technologies and used across acute, community and mental health care to support triage, caseload management, self-care and specific pathways like epilepsy, Isla can streamline clinical decision-making and enhances care delivery across specialties – significantly reducing the need for follow-up appointments and hospital readmissions. However, challenges remain in fully integrating the system across all NHS settings.

Impact

Isla is currently used:

- by over **6,000 clinicians** in North West London ICB
- in **30+ hospitals**
- across **44 medical specialties**
- follow-up appointments have fallen by **15%**
- **10%** of the entire community caseload is identified for discharge under self-care pathways
- readmissions have reduced; patients whose surgical wound sites are monitored through Isla are **6x** less likely to be readmitted to hospital
- patient throughput has improved **500%**
- Isla virtual reviews are completed in around **3 minutes**, down from 20 minutes

80% reduction in in-person visit length (hours)
Epilepsy use case



Case Study

Fractional exhaled Nitric Oxide (FeNO) testing for the diagnosis and management of asthma

The case study addresses the present challenges in diagnosing respiratory conditions and delivering respiratory care and treatment in England.

Context

FeNO tests measure the amount of nitric oxide (NO) when someone exhales. The score provides an indication of eosinophilic inflammation in the airways, which can be a sign of asthma. It can therefore be used to support the diagnosis and management of asthma.

Approach

- Health Innovation Wessex began a national large-scale transformation and spread programme, as part of the AAC's Rapid Uptake Products (RUP) Programme, which aimed to improve the lives of people with asthma through widespread FeNO adoption and build capability in the respiratory workforce.
- As it was delivered through a large-scale, multifaceted transformation programme, supported by all 15 HINs (formerly AHSNs), NHS England, and a national steering group comprising patient partners, industry, clinical champions, national societies and charities, and NICE alongside the Health Innovation Network and AAC, the collective impact of the programme was increased.

Impact

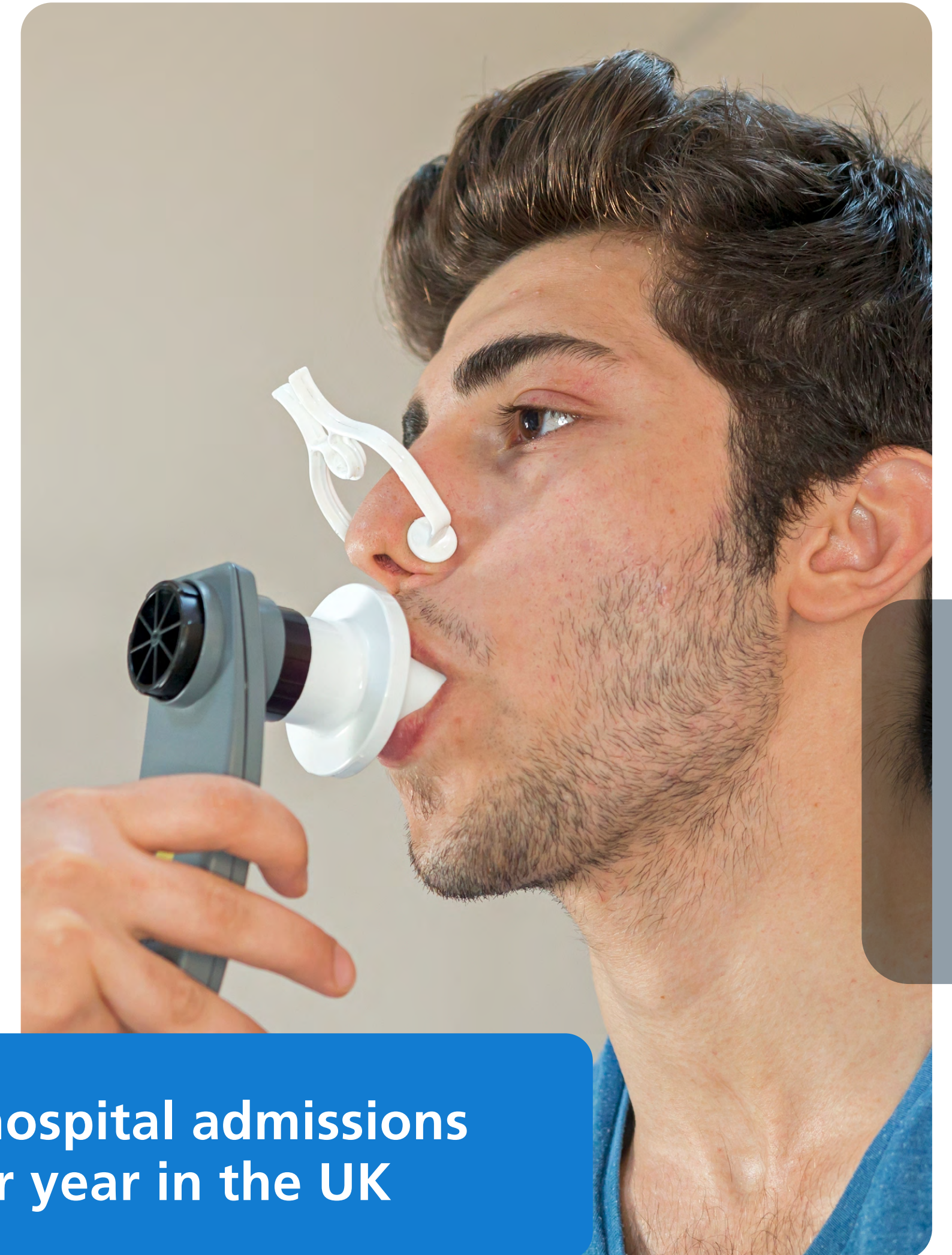
FeNO

- supported the diagnosis of an estimated **58,000** new asthmatics more accurately and faster
- supported **1,244 new devices** to enter primary care
- enabled **53% of PCNs** to access FeNO testing and supported 5,000 hours of FeNO specific training and workforce development.

NICE published FeNO guidance in 2014, included FeNO testing in the 2017 Asthma Guideline, and FeNO first appeared in QoF in 2020/21.



Asthma leads to 60,000 hospital admissions and 200,000 bed days per year in the UK



Concluding statement

This report is the result of many hours of analysis, conversations and insight from a huge range of stakeholders. We have included as many people as we were able in its development, and we are confident in the recommendations. It is now time to get on with it and deliver.

It is a complex, interdependent package of measures and will only be achieved if we can deliver together as partners in the ecosystem – a collaborative, co-ordinated effort will be required with all partners bearing responsibility and reaping the benefits.



“We sequenced the human genome and identified monoclonal antibodies.
We can do this.”