

Connected Health North
Industry Consultation:
February 3, 2021

Workshop Report

The Northern Health Science Alliance (NHSa) is a partnership of 24 research intensive NHS trusts, universities and Academic Health Science Networks (AHSNs) across the North of England. This report is the output from a workshop with Life Science industry partners to inform the development of the NHSa's Comprehensive Spending Review (CSR) proposal: *Connected Health North: A Northern Supercluster in Health and Life Sciences to anchor industry in the UK.*

The Connected Health North proposal sets out to government the case for building on assets in the North to pump-prime activity and realise market confidence in the pan-northern health and life sciences sector. It is centred on growing and developing business by delivering a joined up and collective offer to industry from leading public sector anchor institutions across the North of England.

Executive Summary

There are significant opportunities for industry within the North's health and life science eco-system. The North of England has the equivalent population of a mid-sized European country, matched with excellence in assets, ambition and potential.

The NHSa workshop identified three principle barriers to effective collaborative working between industry and anchor institution hospitals and universities:

1. A lack of capacity for real-world evaluation in the clinical academic system and associated infrastructure

2. A lack of connectivity between institutions and assets; the assets within and across regions needed to work together as a system

3. The need for a link between at-scale evaluation and at-scale adoption

There was a strong view from industry that Connected Health North, if implemented as proposed, offered the opportunity to both link up the North of England's health science assets and create capacity in a way which will maximise innovative research and development (R&D) investment and jobs in the sector, across the region.

Attendees agreed that Connected Health North, implemented in full, will:

- Create a critical mass of health innovation across the North of England by joining up assets and enabling the delivery of efficiencies through reducing duplication and waste.
- Deliver an infrastructure which builds capacity and capability for scaling up.
- Address current gaps in the innovation pipeline and enable smoother progression from discovery and development through evaluation to adoption and diffusion.
- Develop an environment where predictive modelling is a key enabler of insight, delivering intelligence to future-proof services as well as increased resilience in diagnostics, therapeutics and data systems.
- Demonstrate the potential for scale-up across the pan-northern eco-system and in doing so attract further investment from multinational companies.
- Lay the foundations for continuous improvement in the health and care system, providing the resources and support to enable smart thinking.

- Work towards models of prevention in terms of increasing employment attendance, productivity and safe-guarding jobs.
- Deliver a multi-partner collaborative approach uniting the key drivers of health and wellbeing, matched with data intelligence.
- Enable robust scientific and real-world evaluation, to build confidence and increase market uptake.
- Evidence a clear and progressive innovation pipeline, including an articulation of the characteristics that demonstrate success.
- Deliver efficiencies and costs savings that are relevant to public and private sectors.
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Benefits of Connected Health North implementation:

Industry benefits:

- Maximising assets; joining up; scaling up evaluations; efficiencies; intelligence and prediction; innovation pipeline; successful technology adoption in the system.

Societal and economic benefits:

- Continuous improvement; prevention; productivity; evidence and need-based intervention; multi-partnership collaboration; ambition.

Innovation eco-system areas for investment:

- Pipeline progression; evaluation infrastructure; brokering and sharing knowledge; developing skills; access to clinical expertise; connecting components of the northern eco-system.

Industry metrics for success and return on investment:

- Cost savings; commercial gains; addressing shortages; future-proofing; resilience and preparedness; cost effective; further investment.

Introduction and Context:

The NHS's Connected Health North proposal for Comprehensive Spending Review (CSR) funding is an outline business case offering a three-fold return on a £260 million government investment over three years. The investment would build on the collective assets of northern England's health and life science eco-system.

Connected Health North proposes a northern health and life sciences supercluster, covering a population of 16 million citizens, and identifies a number of far-reaching investment benefits, which will enable:

- Large and small companies to more easily access facilities and expertise to develop products and services with greater market fit, as well as bringing them to market sooner and scaling them up across the North and beyond.
- Government to support the levelling up of public sector investment in the North, further fostering excellence and promoting resilience of the UK research and innovation infrastructure.
- The public to benefit from new approaches to population health and tackling health inequalities through application of world-class research and innovation in the North of England.

Throughout the development of the proposal, the NHS has worked with the Office for Life Sciences (OLS) and the Department for Business, Energy and Industrial Strategy (BEIS) to align the northern potential for strategic life sciences and health levelling-up investment as well as working across all NHS thematic programmes with members to identify unmet industry needs and build the vision and case for support.

Workshop Discussion Themes

The Benefits of a Supercluster.

Increasing Capacity and Capability: Maximising Assets; Joining Up; Scaling Up; Efficiencies; Intelligence and Prediction; Innovation Pipeline; Successful Technology Adoption in the System

The North of England has significant assets across the health and life science sectors. In order to maximise the potential of this critical mass, we will, through Connected Health North, join up this infrastructure and enable the delivery of efficiencies, avoiding duplication and reducing waste.

This is also an important aspect of scaling up innovations. There exist some excellent examples of technologies and solutions that have been implemented in the healthcare system, yet there is less evidence of these being scaled up for industry and public benefit.

Through the alignment of data assets the North can develop an environment where predictive modelling is a key enabler of insight, delivering intelligence to future-proof services as well as preparedness to address potential issues as and when they present.

In order to attract multinational companies to the North, there is a need to demonstrate the potential for scale-up across the system. This investment has the potential to kickstart the economy. For example, elsewhere in the UK,

there has been Government investment in facilities focused on scale-up of advanced therapies, such as the Cell and Gene Therapy Catapult in Stevenage.

However, there is also an industry need for early-stage co-development of these technologies, through connecting with academic excellence in the university setting. Advanced therapy SMEs may then get venture funding, move to the Catapult to scale-up, then return to the North to expand and do more.

There are opportunities for additional investment in clinical trials space within the UKRI-funded Advanced Therapy Treatment Centres in the North, plus further manufacturing infrastructure, for example.

There is significant critical mass of excellence in NHS service provision across the North and the NHS blue badge has global cachet.

The proposed supercluster acts as a critical tool to build market confidence in upscaling and increasing the commercial value of the pan-northern health and life science industry, within the UK and internationally. It will enhance the opportunities for progression of technologies through the innovation pipeline.

Through investment and further development of a connected northern health and life science eco-system,

companies will be supported to grow by taking products from concept and discovery, through to adoption and diffusion.

In order to effectively support the northern research and innovation infrastructure we will need to further develop the maturing offer and amplify assets on both the national and international stage. We can do this while also ensuring a fit-for-purpose proposition centred on growing and developing business across the North.

The role of collaboration and partnership for system scale-up must not be underestimated. The North plays a key part in ensuring the UK retains its position as a global leader, attracting clinical trials to the UK, representing the gold standard for innovation and medicines, as well as delivering potential for system-wide adoption of proven solutions to unmet population needs.

Through the development of a clear framework which invites investment, joining up data and amplifying the potential to deliver clinical trials, the North and UK as a launch market will be maintained and reinforced.

Addressing Economic and Societal Need: Continuous Improvement; Prevention; Productivity; Evidence and needs-based intervention; Multi-partnership Collaboration; Ambition

Post-Brexit and post-Covid, there is a clear economic imperative to address and it requires that we rethink strategies for the health and wellbeing of northern populations.

This is an opportunity to lay the foundations for continuous improvement, providing the resources and support for a new paradigm of support for the life science sector to reduce the overall burden and impact of the coronavirus pandemic, in particular, on the physical and mental health of workforces, households and communities.

Delivering the Connected Health North vision for addressing mental health and wellbeing in the workplace (a key pillar of the Connected Health North proposal) would reduce absenteeism, increasing productivity and safe-guarding jobs for the coming decades.

Connected Health North identifies societal need, acknowledging the potential social and economic impact of the pandemic on population health and the need to respond to this in the context of both effective evidence-based management but also in the context of the prevention agenda.

It can be perceived as a direct response to the Nightingale

Report (NESTA) which explores how to address social, behavioural and environmental influences on health. It delivers a multi-partner collaborative approach uniting the key drivers of health and wellbeing, matched with data intelligence to deliver health and wellbeing outcomes.

Innovation Eco-system Areas for Investment. Pipeline Progression; Evaluation Infrastructure; Brokering and Sharing Knowledge; Developing Skills; Access to Clinical Expertise; Connecting components of the northern eco-system

Industry partners stressed the need for the North to build on and join up the existing assets across the full innovation pipeline; from expertise in discovery and basic science, through translation to clinical research in NHS settings, then support for adoption of proven innovations into health and care systems.

Government investment in creating additional capacity and infrastructure in the anchor institutions of the North is preferred by industry to public funding of isolated new projects, without this academic and clinical expertise.

The innovation pipeline across the North is currently stunted in its potential for supporting industry scale-up in evaluation and adoption. In order to attract large company investments, there needs to be a commitment to a holistic platform, including exemplars that demonstrate success.

SMEs involved in the consultation want to see scaling up of the pipeline for co-development, evaluation and acknowledge that this is absolutely reliant on robust scientific evaluation.

This will continue to be an asset in association with the NHS brand and this is the key factor that builds confidence and increases market uptake internationally. It adds credibility to product and service innovations, especially in relation to digital platforms and technologies.

There was a consensus that the potential of the North's evaluation infrastructure is not yet fully realised currently, this is an area for improvement which could deliver real-world benefits at pace.

There is a gap in data and knowledge sharing and in how parts of the innovation eco-system can support each other for scaling up. For example, northern universities are repositories of world-class knowledge and expertise. They can offer data analysis, machine learning and clinical trials. There is a shortage of data skills for application of artificial intelligence (AI) and of implementation skills to engage with communities and deliver digital solutions for known unmet needs. Increasing capacity and joining up

existing assets to encourage and develop these specialist skills will enable the realisation of data-driven innovation, to anchor industry and allow companies to scale-up within the UK.

Industry metrics for success and return on investment. *Products and services to market; Addressing Shortages; Futureproofing; Resilience and Preparedness; Cost Effective; Further Investment*

The scale of the opportunity, the imperative for the UK economy and the northern geographical location all maximise the return-on-investment potential for the government.

These far-reaching benefits include efficiencies and cost savings to the NHS, commercial benefits and opportunities that are relevant to new public-private collaborations.

As a global offer the UK is a leader in digital pathology and AI. There is a need to build on this excellence, in which the North is in turn leading the UK, with a continued purpose and direction in order to effectively utilise shared assets and maximise opportunities for growth.

Similarly, developing an infrastructure that provides a joined-up platform for evaluation and adoption of diagnostics as a place-based northern offer, including self-assessment at home, could address current service shortages whilst also future-proofing return on investment for both the NHS and industry.

Post-pandemic, there is an urgent need for both diagnostics and digital solutions to be grounded in their locality and address the impact on physical and mental health. This will be needed nationally, but also globally, as a means to deliver societal resilience through democratisation of health and wellbeing.

Now is the time to build capacity and resilience to strengthen the UK's capability in this space and, in doing so, to build post-pandemic preparedness. This is both a current key driver for Government and something that the North of England could deliver with adequate investment.

The North offers an excellent test-bed opportunity to deliver returns on investment for Government. The well-established infrastructure reflects the public investment already made in diagnostics, digital pathology, advanced therapies and other areas.

The next step is to see implementation of innovations at scale around AI. As well as signposting the way forward between the NHS and industry, this will illustrate to the NHS ways that can address inefficiencies within health and social care.

Such investments would directly align with Government agendas. Government funding of Connected Health North would essentially match industry investment planned in this space and boost opportunities for levelling up through the life sciences; in particular to develop northern strengths in advanced therapies, data and diagnostics.

Opportunities and Next Steps

There remain a significant number of opportunities for industry scale-up within the northern health and life sciences eco-system. To inform the development of Connected Health North, further work in the following areas was identified:

- Ongoing development of the NHTA's programmes and networks to support both industry engagement and connectivity across the innovation pipeline; understanding assets and strengths as well as identifying gaps requiring attention and focus.
- Further joining up of the NHTA's existing offers and the opportunities for industry so that these are integrated and aligned with the Connected Health North ambitions.
- The need for a plan for how the large infrastructure investments identified in the development can proceed.

- Levelling up will need to build the industry base to support the scale of the challenge, identifying new partnerships and ways of working.

- Further integration of recent Government funding mandates around diagnostics would be beneficial, both in terms of coming out of the pandemic, as well as delivering solutions to unmet population need.

- The workshop highlighted the need for a feasibility assessment to clarify where opportunities for growth sit across the eco-system and quantification of investment required for delivery.

Attendees

Industry Partners Represented*



Also



This report was produced by the NHSA and Jane McDermott, independent consultant

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*NB not all participants are listed