The NHS as an Innovation Partner – Update on the Innovation Ecosystem Programme

LSC members are asked to:	1. Discuss and comment on progress of the Innovation Ecosystem Programme to date. 2. Provide a view on the action required to ensure the NHS can be part of a thriving innovation ecosystem in the NHS.

Executive summary

This paper updates on progress of the Innovation Ecosystem Programme (IEP) since the discussion at the Life Sciences Council (LSC) in May 2023. The IEP was commissioned by NHS England and seeks to understand how the NHS can best partner with the wider health innovation and research ecosystem to enable research, innovation development, and the adoption and spread of innovation in the NHS. The programme is led by Roland Sinker, National Director for Research and Innovation at NHS England, and is being delivered in collaboration with the NHS, central government, regulatory bodies, academia, industry bodies, as well as patient and public bodies.

The paper provides the Council with a brief programme overview including an update on engagement activities, progress of each of the four key workstreams, and a summary of the early findings from our discussions so far. The appendices set out more detail on the governance of the programmes, and more detailed updates on each of the workstreams.

Programme Engagement

In May, we set out the scope and direction of the IEP. Since then, we have continued to carry out extensive stakeholder engagement to further refine the programme's scope and guide progress. There have been more than 70 one-to-one interviews, alongside a series of targeted roundtables aimed at different stakeholder groups including (i) Arm's Length Bodies (ALBs), (ii) Pharmaceutical industry partners, (iii) Industry partners in MedTech; and (iv) Patient groups and research charities. We would like to thank those who have been interviewed and provided resource to support the work. The engagement has given the following steers:

- **Inclusive Leadership:** Emphasis on collaborating with everyone from national senior leadership to local clinicians to identify and embed learning and enablers at all levels.
- **Industry-Academia Collaboration:** Actively involve industry and leverage universities for research and innovation.
- **Strategic Scalability:** Identify where good practice happens to support scale and spread nationally, connecting leaders and systems to continuously share learning and approaches.
- **Future-Proofing the NHS:** Prepare for technological disruptions and ensure continuous evolution of the NHS model.
- **Equitable Health Innovations:** Ensuring accessible, inclusive, and co-designed health innovations that address inequalities.

Programme overview

The programme aims to address the whole life sciences ecosystem; with recommendations specifically directed to the NHS, but with asks of other partners. The scope is currently deliberately ambitious but will continue to be refined as our work develops over the coming months. The programme is structured through the four workstreams update on below. These are at different stages of maturity as we phase stages of the programme with strong progress in several areas – although capacity and resourcing issues have caused delays in delivery in some places, this is now being resolved. The workstreams are:

1. **Learning by Doing –** *led by Dr Sam Roberts, Chief Executive of NICE and Prof. Gary Ford, Chief Executive of Health Innovation Oxford*
   This workstream is working with health innovation leadership in local systems to understand how research and innovation has been successfully implemented in different localities, to support the piloting of innovative transformation pathways, and use learnings to feed into a national blueprint for innovation and research. Key progress includes:
   a. The workstream has developed and analysed a number of case studies to understand causes of success or failures in local systems being able to support uptake and spread of innovation.
   b. Establishing a learning collaborative facilitated by the Health Innovation Network for continuous peer to peer support for localities to share expertise and insight and develop a repository of knowledge on adoption and spread.
   c. Establishing partnerships with 5-10 localities who are currently undertaking transformation projects linked to the Life Sciences Vision healthcare missions in areas including mental health, neurodegeneration, cancer diagnosis, obesity and cardiovascular disease to learn and improve in real time as their projects are delivered.

2. **Immediate Actions –** *led by Rosalind Campion, Director of OLS and Dr Vin Diwakar, Interim National Director of Transformation NHSE:*
   The workstream aims to focus national attention on improvements the system has said are important right now, highlighting progress, and supporting partners in delivery where needed. Areas of focus and current progress includes:
   a. As committed to in May, the 15 regional Academic Health Science Networks were relicensed in October with rebranding as Health Innovation Networks (HINs) to better reflect the work they undertake within the NHS. Under the new license, the HINs are more aligned to ICBs and regional teams with a clearer route for commissioning of work by HINs; clearer oversight of HINs operational requirements, and stronger reporting requirements against an agreed set of KPIs. The workstream will assess the impact of these changes throughout the first half of the new licence, and work to ensure future alignment of the HINs with the findings of the IEP. This may lead to further high-level changes agreed alongside the IEP blueprint in May 2024 with detailed changes implemented at the mid-license point in March 2025

   b. Implementation of the agreed NHS commitments from the initial government response to the O'Shaughnessy Review into commercial clinical trials published in May. Implementation of the National Contract Value Review (NCVR) has already brought trial set up times down by 36% (year one data). We will support any further NHS commitments to support commercial clinical trials as they are developed.

   c. There is a broad package of work ongoing at pace to streamline the innovation pathway following publication of the Government's MedTech Strategy in February. This includes developing a "rules based" innovation pathway for MedTech in which current funding routes including the MedTech Funding Mandate are under review. This has involved a number of workstreams and broad engagement across the Health Family, patient groups and industry. This is reporting under the MedTech Strategy programme Board to ministers and the Health Technology Partnership (LSC Subgroup)

3. **NHS Research and Innovation Blueprint –** *led by Prof. Lucy Chappel, Chief Executive of the NIHR and Chief Scientific Advisor to DHSC and Dr Richard Torbett, Chief Executive of ABPI with support from Vin Diwakar and Rosalind Campion*
   The workstream is developing an operating model for the health research and innovation ecosystem based on a comprehensive understanding of the current system, and learnings from the other workstreams. A working group has been established. Work to date has focussed on mapping of the current system and innovation funding across the public sector, learning is now being fed in from the work in WS1 and WS4 alongside the progress made in WS2. The bulk of work to be undertaken from now until finalisation in May 2024.

4. **Preparing for the NHS of Tomorrow -** *led by Dr Kristin-Anne Rutter, Executive Director of Cambridge University Health Partners and Peter Ellingworth, Chief Executive of ABHI:* The workstream aims to understand the significant current and emerging Research, Innovation and Commercial trends and what they mean for the NHS, to better understand how to best prepare for the NHS of the future. The workstream has commissioned external independent think-tank, industry and consultancy thought-leadership work across 8 thematic research areas These are due to be completed by February 24 to feed into the blueprint work being developed in Workstream 3.

Appendix B sets out more detail on the workstreams and the progress made so far.

Early findings to inform future IEP work

Based on the stakeholder engagement, detailed literature review, and the initial learning emerging from Workstreams 1 and 4, we have identified a number of themes that need to be addressed through the IEP work. These are still to be refined with specific actions and recommendations developed under each as we move forward. These findings include:

1. **In the short term, innovation and research is being rapidly mobilised by the NHS to tackle immediate workforce, backlog, and productivity pressures but it will take bold shifts to get ahead**. Through initiatives such as the trialling of the Grail Galleri cancer test and the cancer vaccines launchpad, the NHS has shown it can mobilise innovation and research to address real world health challenges. But we need to go further - a move to prevention, early diagnosis, out of hospital care and an NHS that can engage more actively in research requires capacity and space to undertake bold transformation. The NHS will need support and resource to give the headspace to allow this change, and many of the changes will require partnership with those outside of the NHS to achieve.

2. **We need to articulate how the NHS can approach innovation and research in a different way.** The NHS and its partners will need to be less "supply side" in how it identifies innovation – prioritising its innovation and research support in areas of greatest need or opportunity, tackling greatest unwarranted variation in adoption, and drawing on internal as much as external innovation. It should be focussed on transforming whole pathways, moving away from historical focus on individual products, and seek to move from only looking at a 1-2 year horizon for innovation and research to planning for 3, 5 and 10 year horizons.

3. **We need better alignment of innovation and research infrastructure – orientated towards the local and with easier gateways through which partners can engage with the NHS**. The NHS collaborates with a wider range of infrastructure doing good things to support innovation and research (through HINs, the NIHR, research charity and industry partners, and at trust, ICB, regional and national level) but it remains complex and duplicative in places. We need to better align, and bring clarity to who is responsible for what and when to enable simplified, streamlined access for both testing new things and rolling out. The infrastructure should be aligned with national ambitions, and have national levers mobilised to support it. However, national implementation policy should not be too prescriptive, and activity will need to be adjusted to local needs and systems.

4. **However, we must recognise that enablers are as important (or more so) as structures and organisations**. All adoption of innovation is local and needs individuals to provide leadership and drive through implementation. NHS management and clinical leadership will be key in sending a signal that innovation and research are important. Enabling this leadership requires enabling elements of culture, clinician time, data, procurement processes, and incentives to enable full time clinicians to innovate, enrol their patients in research, undertake high quality research themselves and adopt innovations safely. To enable this, we also need to reduce friction in the system to make it easier to undertake research and adopt innovation

through a clear, consistent, standardised, and streamlined rules-based approach, and standardise how industry, academia, charities, and patients can partner with the NHS. This will better empower NHS staff on the ground to participate in research and adopt innovation.

5. **We need to be consistent and long term in our approach.** There is no silver bullet – innovation in NHS has partly suffered from a series of short-term projects and approaches (despite the same barriers and enablers being identified over last 20 years). Success in implementing the findings of the IEP will require collective accountability and resourcing for 3-10 years, with a clear strategy that all partners are signed up to and willing to support.

The principles in these early findings will guide the work and recommendations of the programme over the next 6 months.

Next Steps

The programme will continue to engage with all partners across the ecosystem, to iteratively test and refine the ecosystem architecture and future blueprint. The programme is currently developing its measures of success and evaluation framework. We will continue to develop these metrics in partnership across each of the workstreams, as well as building future KPIs as we move into implementation beyond May 2024. The programme will continue its collaborative learning and delivery across the four workstreams, and in aggregate, iteratively aligning and feeding into the blueprint design as the final output to test with the Life Sciences Council in May 2024.

Life Science Council members are asked to:

3. Discuss and comment on progress of the Innovation Ecosystem Programme to date.
4. Provide a view on the action required to ensure the NHS can be part of a thriving innovation ecosystem in the NHS.

APPENDICES

Appendix A – Programme-Level Governance

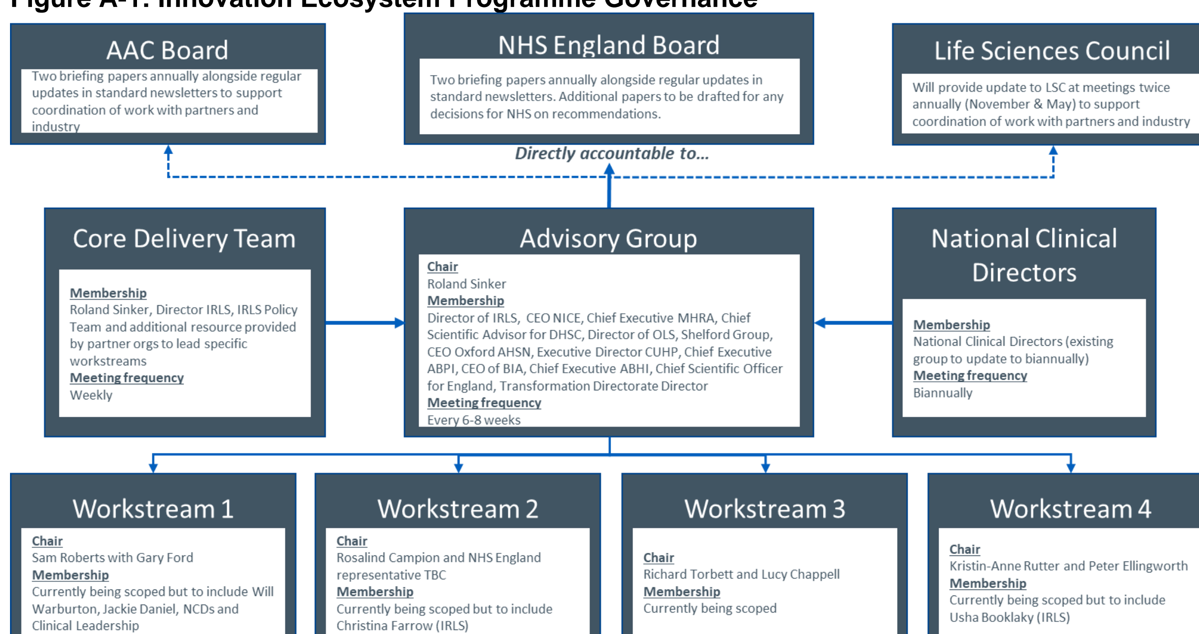
The Programme is overseen by an Advisory Group of diverse and influential experts from across the healthcare and life sciences sectors to ensure a robust and collaborative approach to achieving the Programme's objectives. As set out in Figure A-1, the advisory group will be accountable to the NHSE Board and regularly provide updates to the AAC Board and Life Science Council. The advisory group is comprised of Roland Sinker, the Interim Director of IRLS (Verena Stocker), the Interim National Director of Transformation NHSE (Vin Diwakar), the Chief Executive of NICE (Samantha Roberts), Chief Executive of MHRA (June Raine), Chief Scientific Advisor for DHSC and Chief Executive of NIHR (Lucy Chappell), Director of OLS (Rosalind Campion), Managing Director of the Shelford Group (Will Warburton), Chair of the Health Innovation Networks (formerly Academic Health Science Networks) (Richard Stubbs), Executive Director of Cambridge University Health Partners (Kristin-Anne Rutter), Chief Executive at ABPI (Richard Torbett), Chief Executive of ABHI (Peter Ellingworth), CEO of UK Bioindustry Association (Steve Bates)

A working group for each Programme Workstream has been established and has two has two chairs from the advisory board, supported by a delivery team, the chairs are as follows:

- **Workstream 1**: Dr Sam Roberts, Chief Executive of NICE and Prof. Gary Ford, Chief Executive of Health Innovation Oxford
- **Workstream 2**: Rosalind Campion, Director of OLS and Dr Vin Diwakar, Interim National Director of Transformation NHSE
- **Workstream 3:** Prof. Lucy Chappel, Chief Scientific Advisoror DHSC and Chief Executive of the National Institute for Health and Care Research (NIHR) and Dr Richard Torbett, Chief Executive of ABPI
- **Workstream 4**: Dr Kristin-Anne Rutter, Executive Director of CUHP and Peter Ellingworth, Chief Executive of ABHI

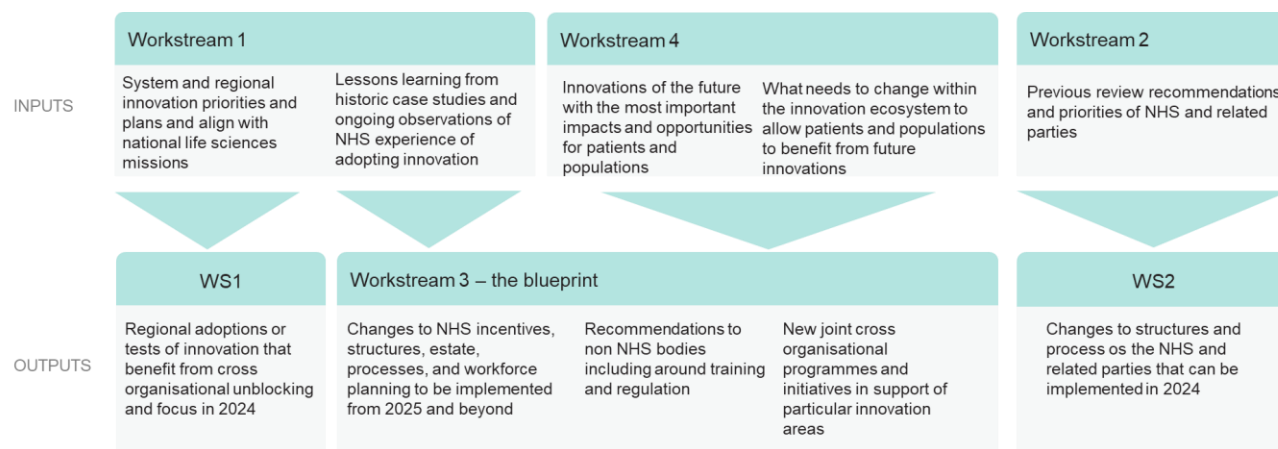
To note, this programme is closely linked to wider work remits covering life sciences and NHSE innovation including those of the AAC, DHSC, ABHI, and other boards. The intention of this work is to link to but not oversee/supersede those groups. Clinical input will also be sought from relevant NHSE clinical advisory groups. Periodic roundtables are also being undertaken with broader industry, the third sector and the patient community.

Figure A-1: Innovation Ecosystem Programme Governance



Source: Innovation Ecosystem Programme Working Group, 2023

Appendix B - Alignment and update on progress of the IEP Workstreams



Workstream One: Learning by Doing

Workstream One (WS1) focuses on healthcare improvement through partnership with selected localities. It's designed to feed into the Research & Innovation blueprint (delivered under WS3), emphasising real-world learning and locally led transformation. WS1 is being chaired by Dr Sam Roberts, Chief Executive of NICE and Professor Gary Ford, Chief Executive of Health Innovation Oxford (formerly Oxford AHSN) in collaboration with Will Warburton, Managing Director of the Shelford Group.

The objectives for this workstream are to:

1. **Understand how research and innovation has been successfully implemented in different localities**, identifying key drivers that enable local system to support uptake and spread of innovation.
2. **Support the piloting of innovative transformation pathways**, by working with systems' different capabilities (i.e., academic activity and maturity of local systems), to:
    a. explore how they can interact with national innovation schemes and programmes.
    b. optimise NHS infrastructure, levers, and enablers to support, quickly adopt, and effectively evaluate research and innovation for service development.
    c. develop clear communication channels between the NHS, regulators, academia, industry, and patients/public for optimal collaboration.
3. **Use our learning to feed into a national blueprint for innovation and research**, helpings us understand optimal system architecture, practises, and processes - and what national support is needed to enable this, alongside existing initiatives.

A two-fold approach was taken by:

1. **Learning from Previous Work**: Collaborate with the Health Innovation Networks (formerly AHSNs) and national programmes to analyse past health innovation case studies.
2. **Active Partnership with selected localities**: collaborating with select localities who are working on pathway transformation initiatives.

Learning from previous work

Since May, we have completed an analysis of case studies across a diverse range of healthcare innovation topics (Asthma, Maternity and Neonatal, CVD Prevention, and Stroke AI), for the purpose of developing actionable hypotheses which identify pivotal enablers for the spread of innovative practices (cf. Appendix C).

We will test these hypotheses on the critical factors for adoption of spread and innovation through our collaborative work with localities (detailed below). A full understanding of local system needs will enable us to test the draft hypotheses applying the learning from past experience to current activities and ensuring that hypotheses are adequately robust to inform and guide future strategies and initiatives within the innovation ecosystem effectively, including alignment into the blueprint.

Locality partnerships

Since May, we have engaged with the local system via the Health Innovation Networks, National Clinical Directors, and Shelford Group. Through expressions of interest, we will form partnerships with selected localities doing pioneering transformation projects in mental health, neurodegeneration, cancer diagnosis, obesity, and cardiovascular disease to learn and improve in real time as their projects are delivered.

Two key collaborative structures will be put in place:

1. *Learning Collaborative:* Facilitated by the Wessex, West of England, and South West Health Innovation Networks, this collaborative aims to:
    - Facilitate continuous peer-to-peer support for localities through sharing expertise and insights.
    - Develop a repository of knowledge by gathering and offering valuable information to all involved and the wider healthcare system.

2. *Innovation Test Group*: Concurrently, a distinct group will be formed, convening selected localities across a range of geographic and demographic characteristics (for example, urban centres like Manchester and Cambridge, costal area such as the South West), national infrastructure leaders, and the leads of the Life Science Missions to explore the testing and roll-out of new treatments and diagnostics. The objectives include:
    - Test hypotheses derived from our retrospective case studies analysis.
    - Formulate a collective vision to navigate the challenges intrinsic to each clinical area.
    - Conceptualise the design of future services, focusing on proven, evidence-based practices.

Emergent findings from this workstream will be used to inform the blueprint design as well as other national levers and enablers to enable scale and spread as the programme moves into implementation beyond May 2024.

Workstream Two: Immediate actions

The purpose of the workstream is to deliver an ambition to make rapid progress in key areas as identified as priorities by our partners. The workstream, chaired by Dr Vin Diwakar, interim National Director of Transformation NHSE and Rosalind Campion, Director, Office for Life Sciences, keeps sight of key ongoing projects across partners and ensure these are being delivered to time and expected benefits, and feed into and align with blueprint development being undertaken in Workstream Three.

In May, the programme provided four identified priority areas which were proposed following discussions and engagement with our partners. Below is a brief update on delivery to date against each of the priority areas as well as future delivery ambitions by May 2024 and beyond.

Area 1: Review NHS innovation support infrastructure and optimisation of the Health Innovation Network

In October, the Academic Health Science Network was relicensed under a new five-year license with rebranding as the Health Innovation Network and several changes to performance metrics, governance, and oversight.

The workstream will review the current NHS innovation support infrastructure to understand and define roles and responsibilities across the landscape, including the HIN and the impact of the new licence. With this in mind, at the mid license point in March 2025, any further changes to the HIN will be implemented.

A full plan for the review will be developed before the end of the calendar year, with activity taking place in the first half in the first half of 2024 and initial findings reported in May 2024.

Area 2: Acceleration and alignment of MedTech innovation pathways in the NHS

There is ongoing significant activity across partners to improve the NHS's approach to MedTech. Key areas of activity include:

- Implementation of the MedTech strategy (which includes new commercial approaches) and desire to establish a broader "rules based pathway" for procurement and commissioning
- Broader changes to innovation acceleration schemes for MedTech including the new Innovative Devices Access Programme (IDAP) and NICEs Early Value Assessment
- Existing funding schemes for MedTech including Small Business Research Initiative and HMT fund for Digital Health Therapeutics.

Within context of this work, the Medtech Funding Mandate (MTFM) has been a key potential lever for the NHS to support adoption. This workstream will support any necessary changes to the Medtech Funding Mandate to align with broader work and to expand capability as lever to drive adoption. The workstream will consider the number of elements of the MTFM scheme including changes to eligibility, how to increase the pipeline of eligible products, and how to utilise the lever in primary and community care.

Area 3: Innovation in Primary Care

Integrated care systems, with support from Cardiac Networks and building on AHSN work, have been developing lipid lowering pathway improvement plans to enable delivery of the 2023/24 operational planning guidance. This commits systems to work towards a priority of increasing the percentage of patients with a high CVD risk score on lipid lowering therapies to 60%. The March 2023 data suggests that the 60% target for patients at high risk of CVD treated with lipid lowering therapies has essentially been met (59.96%).

With regard to secondary prevention, and in recognition of the high number of patients that are statin intolerant and/or for whom statin therapy alone has not sufficiently reduced their lipid levels, model pathways have been developed that recognise the role of alternative lipid lowering therapies. This includes Inclisiran, which is covered by a first of its kind commercial deal with Novartis that supports access for all NHS patients who would benefit as identified in the NICE Technology Appraisal Guidance (TAG).

The IEP will ensure lessons learned in programme design and delivery are effectively captured, case studies are shared and learning is reflected in the May 2024's blueprint design. This element of the workstream will transfer to Workstream 1 in November.

Area 4: Implementation of the NHS commitments in the government response to the O'Shaughnessy review of clinical trials.

Since the initial government response to the findings of the O'Shaughnessy review, the NHS has made good progress in delivering agreed actions including implementing phase 2 of the National Contract Value Review (NCVR) programme which has achieved a 36% reduction in trial set-up time, in the first year. The IEP will continue to support the implementation the commitments in the full government response to the review. as part of any further agreed action plans.

Workstream Three: The NHS Research and Innovation Blueprint

This workstream will summarise and present the findings of the IEP and set a clear strategy for future work. It aims to provide a clear articulation of the NHS approach to support innovation and research,

including setting out the roles and remits of NHS organisations at local, regional, and national levels and the processes, pathways, and funding available to support innovation and research in the NHS. The goal of this workstream is to provide a diagnostic of the current landscape and identify opportunities, enablers and levers needed in the future. WS3 is being chaired by Professor Lucy Chappel, Chief Executive of the National Institute for Health and Care Research (NIHR) and Chief Scientific Advisor to DHSC and Dr Richard Torbett, Chief Executive of ABPI. Roz Campion and Vin Diwakar are expert advisors.

Since May, the workstream has been resourcing its working group, ensuring input and collaboration from across the NHS, industry, academia, regulators and public and patients. The workstream has started its current landscape diagnostic which highlights the complexity all partners experience while operating (Appendix D) as well as public spend by organisation across the ecosystem (Appendix E). Detailed feedback on the current system is being captured through workstream one (see Appendix C) and from the broad engagement outlined earlier.

The focus over the next six months is to draw together the findings from workstreams 1 and 4, align with improvements to the system being made in ws2 and iteratively test a blueprint with partners. At May 2024's Life Sciences Council, we will have a final iteration of the blueprint produced by the NHS with the endorsement of our partners, with a clear set of recommended enablers and levers aimed at the NHS and our partners to implement to drive forward change, and a longer term culture and behaviour change ambition to continuously spread innovation at scale and pace.

Workstream Four: Preparing for the NHS of tomorrow

This workstream is focussed on understanding the significant current and emerging Research, Innovation and Commercial trends and what they mean for the NHS. By collaborating with the foremost thought leaders working in healthcare today, we intend to generate intelligence to then be used to inform a series of recommendations of how the NHS should adapt to take advantage of the opportunities they present to increase adoption and spread. WS4 is being chaired by Dr. Kristin-Anne Rutter, Executive Director of CUHP and Peter Ellingworth, Chief Executive of ABHI.

After engagement and testing with partners across the ecosystem, the co-chairs have agreed the following eight thematic areas to structure the research completed by thought leaders:

1. Opportunities for earlier diagnostics and prevention including public health.
2. Personalisation of therapy and novel therapeutic approaches requiring new delivery mechanisms including cell therapy, gene therapy and neuromodulation.
3. Enablers of changes to care settings including miniaturisation, power, wearables and connectivity.
4. The evolution of process automation, robotics and artificial intelligence as applied to care delivery.
5. The evolution of process automation, robotics and artificial intelligence as applied to support functions.
6. Evolution in R&D and manufacturing methodologies.
7. Transformation of commercial models and supply chains including more complex partnerships.
8. Technologies that support environmental sustainability.

Working with thought leaders, we will answer the following questions for each of the above listed thematic research areas:

- Considering what is happening in research, other sectors and internationally what innovation is coming? What time horizon is impact expected?
- How does the relevance of innovations vary with global trends and threats?

- What will the potential impact be on health outcomes, economics and NHS operations (workforce, estates, costs etc[1])?
- Are there particular ethical considerations including implications for inequities and personal rights that need to be considered in relation to these innovations?
- Are there particular challenges to development or adoption of these innovations e.g., regulation?
- What could the NHS be doing now to prepare?
- What could other organisations in the Life Science ecosystem be doing? How should they interact with the NHS? How do we ensure effective collaboration?

Following completion of the research, further work will then be undertaken to generate a series of clear recommendations that will help support the NHS adapt and take advantage of the opportunities they present, and ultimately support greater adoption and spread of innovation.

This above research and the follow-on process of review and recommendation development and testing is due to complete by the end of February 2024. The findings from WS4 will actively feed into the other workstreams and shared at the Life Science Council in May 2024.

[1] Themes to cross-reference with the agreed programme ‘enablers’ which are being defined as part of WS3)

Appendix C - Workstream One: Actionable hypotheses of enablers for adoption and spread

1. Spread and adoption of innovation is more difficult without a clear, relevant national strategy and policy levers that align with local needs, particularly when it comes to implementation. However national implementation policy should not be too prescriptive and aligning national ambition with regional and local needs will accelerate the adoption of proven innovations.

2. Taking a whole pathway approach, focused on clinical benefit, to embed specific innovations is more likely to lead to sustained adoption and spread.

3. The perceived utility of the innovation, including relative advantage, simplicity of use and cultural fit, are crucial for success.

4. Effective clinical leadership at both national and local level is essential to enable successful spread and adoption of innovation. Local clinical leadership is particularly important to mobilise resources.

5. Timely national and local quantitative uptake data and qualitative information on barriers to adoptions are necessary to increase contextual understanding, build will and drive behaviour change.

6. Managerial and leadership support to develop a robust business case that can demonstrate both clinical benefits and resource impact, ideally cost savings, are key to ensure sustained adoption.

7. A robust evidence base demonstrating both clinical efficacy and return on investment and value, and health and social care workforce impact will be a key driver in supporting the spread and adoption of specific innovations.

Enhancing the capability and capacity of the health and care workforce with skills in pathway transformation and adoption of innovation will enable more effective spread and adoption of innovation.