



How can policy and practice support an innovating healthcare system?

The NHS is under increasing pressure to meet rising and changing demand for healthcare services, driven in part by an ageing population and growing numbers of people living with chronic conditions. It confronts these demands with limited resources. Policymakers are increasingly recognising the potential of innovation to support a thriving health and care system (for example as seen in the *Accelerated Access Review*, *Carter Review*, *Next Steps on the NHS Five Year Forward View*, *Life Sciences Industrial Strategy* and the *NHS Long Term Plan*, among other policy documents).

Adopting innovative technologies, products and services offers the NHS the opportunity to help respond to the challenges it faces and to support high-quality, efficient and effective healthcare. However, both policymakers and wider stakeholders often lack the appropriate information, evidence, capabilities, resources, relationships, incentives and accountabilities to inform policy and practice, and the development, commissioning and use of innovations remains patchy across England. Some proven innovations swiftly spread while others with equal promise get limited traction.

Examining the potential of innovation to respond to healthcare challenges

In light of the challenges facing the NHS, RAND Europe and the University of Manchester were asked to conduct a study on the potential of innovation to help deliver an efficient and effective healthcare service. This independent research was funded by the National Institute for Health Research (NIHR) Policy Research Programme, in close collaboration with the Department of Health and Social Care, NHS England and the Office for Life Sciences.¹ The study examined four interrelated research questions:

1. How do organisations working in and closely with the NHS perceive and understand innovation, and how does this influence their actions?
2. Who drives and contributes to innovation and how might successful innovation have greater scale, scope and impact?
3. What practical changes to policy, culture and behaviour can support system-wide improvements in the healthcare innovation landscape?
4. How can we measure the contributions of innovation to the social and economic performance of the healthcare sector?

To help explore these issues and to enable a consideration of the structural, behavioural and cultural determinants of innovating health systems, this study adopted a systems approach to understanding healthcare innovation, and built mainly on innovation systems² and socio-technical systems thinking.³



Methods

Over the course of the research (2015 – early 2019),⁴ we conducted:

- In-depth key informant interviews with 197 individuals across the health innovation system.
- 13 workshops with 172 participants overall.
- A survey of 256 stakeholders across different stakeholder groups in the health system.
- 14 case vignettes of selected health innovations, including an additional 45 interviews with individuals involved with the development and/or adoption of the innovations (see page 11).
- A review of scholarly literature and policy-related documents.
- An analysis of indicators that could be used for evaluating the performance of an innovating healthcare system.
- An analysis of population-level factors associated with the uptake of innovative medicines.
- Continual engagement with policymakers and wider stakeholders to ensure timely learning and the exchange of information and ideas.

1 NIHR study PR-R7-1113-22001; IRAS: 193979. The research received ethical approval from the University of Manchester, where one of the study principal investigators is located.

2 Freeman, Christopher. 2008. *Systems of Innovation*. Cheltenham: Edward Elgar Publishing.
Lundvall, Bengt-Ake. 1992. *National Innovation System: Towards a Theory of Innovation and Interactive Learning*. London: Pinter.
Nelson, Richard R. 1993. *National Innovation Systems. A Comparative Analysis*. Oxford: Oxford University Press.

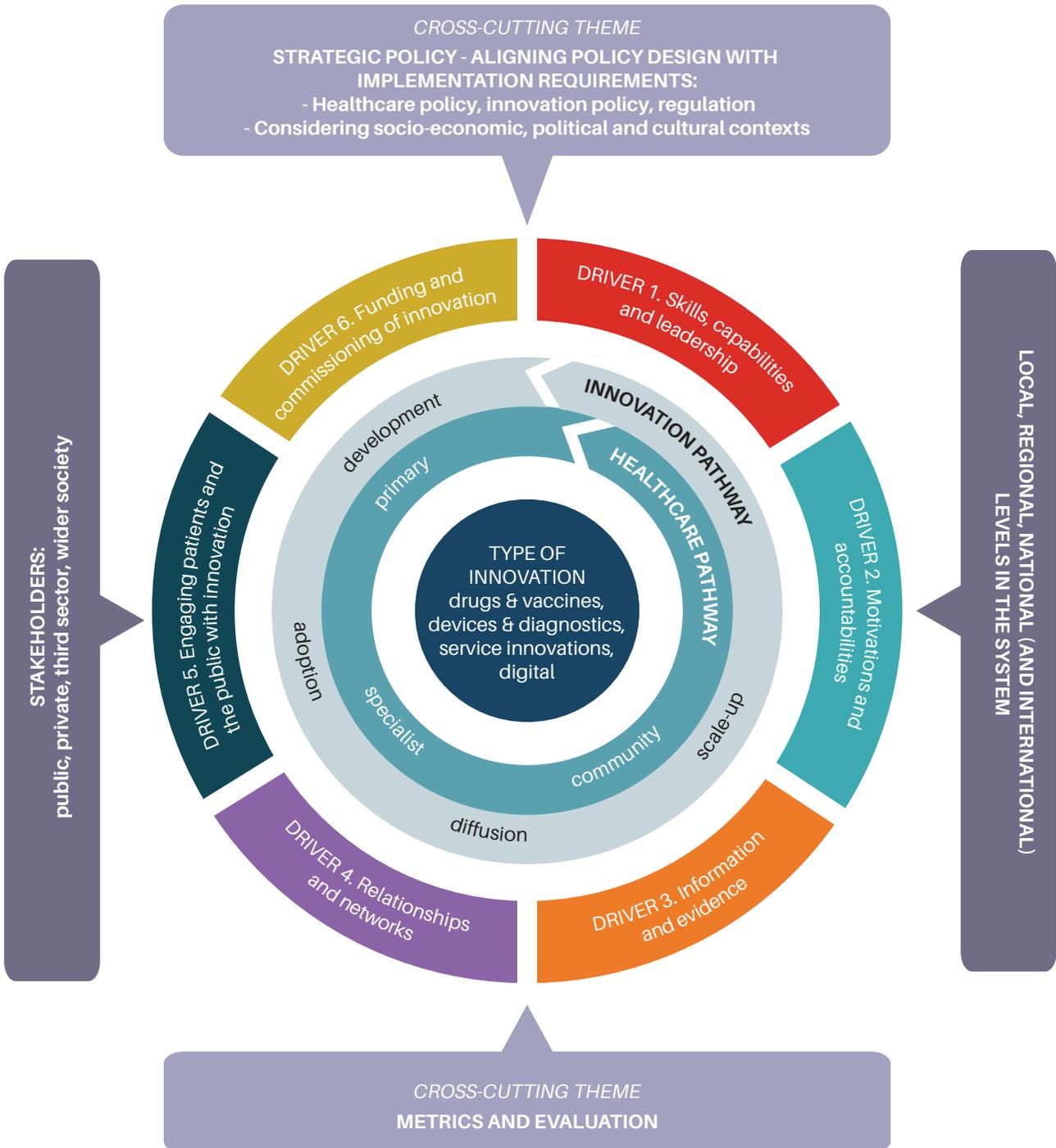
3 See, e.g.: Geels, Frank W. 2004. 'From Sectoral Systems of Innovation to Socio-Technical Systems: Insights about Dynamics of Change from Sociology and Institutional Theory'. *Research Policy* 33(6–7):897–920. doi:10.1016/j.respol.2004.01.015
Geels, Frank W., & Johan Schot. 2007. 'Typology of Sociotechnical Transition Pathways'. *Research Policy* 36(3):399–417. doi:10.1016/j.respol.2007.01.003

4 The study comprised two stages. This research brief reports on findings from Stage 2 of the overall study. Stage 1 was a scoping stage that examined the implementation and outcomes of the *Innovation, Health and Wealth* strategy (2011), which had set out the Department of Health's (now the Department of Health and Social Care) delivery agenda for spreading innovation throughout the health system in England. In Stage 1, we explored the role of the *Innovation, Health and Wealth* strategy in the national health innovation landscape and its key associated initiatives for taking innovation forward, with a view to capturing empirically informed and practical lessons in addition to informing the design and implementation of more in-depth work in Stage 2. Insights from the review of *Innovation, Health and Wealth* were reported in Bienkowska-Gibbs et al. (2016; https://www.rand.org/pubs/research_reports/RR1143.html) and are not repeated here. As part of the first phase of Stage 2, we were also commissioned to conduct a distinct review of the Small Business Research Healthcare Programme, which is reported on in Lichten et al. (2017; https://www.rand.org/pubs/research_reports/RR1828.html).

The current health innovation landscape

The study's findings regarding the current health innovation landscape and its associated recommendations are organised around six drivers of innovation and two cross-cutting themes (see Figure 1).

Figure 1: A systems perspective on the innovating health system





Skills, capabilities and leadership

The current landscape

Diverse social and technical skills and leadership capabilities are needed to help create an environment in which innovation can be effectively managed and implemented. Essential social skills include leadership capabilities to manage risk and encourage an acceptance of innovation as part of the organisational culture in the health service; networking, brokerage and relational skills to create connected communities and to foster cooperation in innovation-related activities; and skills related to establishing a compelling business case for innovation.

Essential technical skills include the ability to assess and articulate problems and interpret innovation-related evidence; skills to implement innovations and innovation policies in organisations; economic analysis and evaluation skills that measure the performance of products, technologies and services in the real world over time and at the level of the health system (rather than in organisational silos); and intellectual property literacy.

Recommendations

- Policymakers and NHS leadership should identify, mobilise and embed innovation champions and brokers of information, expertise, evidence, contacts, relationships and collaborations into the health system. To prevent these being tick-box roles, individuals need to be trusted leaders across professions, and have clear responsibilities and accountabilities for supporting innovation.
- Policymakers should work with (i) professional communities to embed innovation-related training into continual professional development and (ii) organisations such as the Medical Royal Colleges and Health Education England to introduce innovation-related skills training into medical education.
- Policymakers, medical education communities, innovation practitioners and healthcare service

providers should work together to establish programmes for the private sector on effective engagement with the NHS and on developing compelling business cases.



Innovation programmes

Historically, the health innovation system in England has emphasised the supply side of the innovation process (for example through the Clinical Entrepreneurs Training Programme; training and mentorship provided through enterprise and Innovation Hubs; Small Business Research Initiative (SBRI) health economics skills support; and others) somewhat more than the skills required for adoption, spread and scale-up on the demand side. Recent programmes such as the NHS Innovation Accelerator and the refreshed Academic Health Science Networks (AHSNs) are seeking to support a more balanced approach to building skills and capabilities for innovation and to help create a connected healthcare innovation pathway – from idea generation and development through to the adoption and spread of health innovations.



Motivations and accountabilities

The current landscape

Although the system of *motivations and incentives* for engaging with innovation has strengthened in recent years and continues to evolve, there has been less progress with ensuring *accountability* for innovation (especially as it relates to the uptake of evidence-based and proven innovations). Stakeholders we engaged with during the course of this study generally did not support mandating the uptake of innovation, but did express agreement that strengthened accountabilities are needed. We have recently witnessed some progress – AHSNs, for example, have a formal remit to help facilitate innovation uptake.

Individuals engage with the development and uptake of innovations for diverse reasons. These include personal beliefs about the value of innovation for improving healthcare quality and safety; leadership support for innovation (for example releasing time and funding for healthcare staff to incubate ideas and pursue innovation-related activities in collaboration with other stakeholders); organisational cultures that value innovation; and potential reputational, financial and career-related benefits for those involved. Many of these incentives and motivations seek to align individual interests with organisational objectives.

Recommendations

- Executive leadership, middle management and clinical leaders in healthcare provider organisations need to assume more responsibility for raising awareness and disseminating information about innovation, and to release time for staff to engage with innovation.
- Stronger monitoring of accountabilities is justified and can help tackle unwarranted variation (for example by requiring more compelling evidence and information on why proven innovations are not taken up in some contexts). Accountability for innovation should be embedded into national regulatory and improvement schemes. This does not mean mandating innovation (and, indeed, innovation is not always desirable and appropriate). But it does mean ensuring accountability for engaging with innovation when appropriate, as not doing so is a risk to safe and effective care.
- NHS leadership and policymakers could reward innovation by establishing 'innovating with impact'-type awards (for entrepreneurial activity or uptake) for individuals and organisations.

to inform their decisions. Current sources of information and evidence about specific health innovations, and about opportunities to engage with innovation initiatives, are multiple and diverse, but also fragmented. The communication and targeting of such information could be improved.

Decision makers in the NHS need information and evidence on: (i) the impact of innovation; (ii) the business case for investing in innovation; (iii) how to implement and support innovation; (iv) the potential associated decommissioning and de-implementation needs that accompany the introduction of innovations; (v) training needs; and (vi) innovation funding opportunities.

Private sector and clinical entrepreneurs need information on: (i) health system demand for specific types of innovation; (ii) funding schemes; (iii) points of contact in the NHS to engage with around innovation development, testing, evaluation, commercial negotiations and uptake; and (iv) which local, regional and national institutions they can contact for advice and help with making introductions to other healthcare system actors who can aid with the development or uptake of their products, technologies and service innovations.

Patients and the public need to be given opportunities to help identify innovation needs and be alerted to information sources on innovations they could access and benefit from.

Recommendations

- Create a national framework and infrastructure for overseeing and coordinating information and evidence flows on innovation. Support this by:
 - Appointing national, regional and organisational evidence and information flow champions.
 - Collating and organising evidence from diverse sources on a national integrated data platform that would serve as central repository of key analytics and a signposting platform to other information sources.
 - Assisting national initiatives and bodies across innovation and improvement spaces to collaborate, share and signpost information.



Information and evidence

The current landscape

Decision makers across the health system have differing needs for information and evidence



Types of evidence and information sources

Examples of key sources include institutional websites (such as NICE guidelines and NHS England portals such as NHS Choices), AHSNs, Knowledge Transfer Networks, Innovation Hubs, quality improvement networks, conferences, trade shows, journals, and direct communication with peer and personal networks. Although improvements have been made in enhancing the information and evidence infrastructure on innovation and improvement-related data in recent years (for example through the Innovation Scorecard, Getting It Right First Time, NHS RightCare and NHS Choices), significant gaps in awareness of and access to user-friendly sources of information persist.

- Create a framework for evaluating innovations to inform adoption decisions, and establish clearly defined principles for good evaluation practice and clear evidence standards.
- Invest in consensus processes among regional and national stakeholders to identify priority innovation needs for the NHS so that innovators can respond to more stable and clear demand, at a time of finite resources.



Relationships and networks

The current landscape

There are a number of initiatives to support collaboration for an innovating health system: for example, AHSNs, Vanguard, Test Beds, Innovation Hubs, Knowledge Transfer Networks, Catapults, Collaborations for Leadership in Applied Health Research and Care (CLAHRCs), Sustainability and Transformation Partnerships (STPs), quality improvement initiatives and various other regional networks and organisations. Many are governed nationally but implemented regionally, and support relationships that span

multiple groups. However, there is scope for strengthening their capacity to better align activity at regional and national levels to support impact.

Strengthening the alignment between existing initiatives could also help prevent 'initiativitis' – in other words introducing initiatives that duplicate effort and risk wasting resources by 'reinventing the wheel' rather than developing a consistent rhythm of learning and improvement that builds on existing capacity. Although the health innovation system in England offers a range of formal and informal networks and networking opportunities, there was a perception among stakeholders that many organisations still operate in relative siloes.

Recommendations

- Improve the design of the innovating health system to align and better coordinate existing innovation-relevant initiatives, organisations and relationships. To achieve this, policymakers could work with wider stakeholders to:
 - Ensure that organisations and initiatives understand their roles and remits and the scale and timing of funding commitments they have access to.
 - Ensure that wider actors in the health system are more aware of the skills, capabilities and services on offer, as related to the remits of specific organisations.
 - Evaluate initiatives against progress and delivery on clear remits and roles.
 - Support collaborative projects and tasks to help create a shared vision of success.
 - Consider prospects for shared posts, secondments and placements.
 - Appoint individuals who can act as brokers of information, expertise, evidence, contacts, relationships and collaborations into initiative structures. Related to this, pursue cross-organisational representation on committees.
- Develop guiding principles for private sector innovators on effective engagement with the NHS, and establish 'receptor' roles in the NHS at clinical, managerial and executive levels with responsibility for engaging with innovators and decision-making authorities.



Engaging patients and the public with innovation

The current landscape

The current landscape for patient and public involvement has evolved and recognises the value of the personal experience and knowledge of those using healthcare services. However, a coordinated strategy for patient and public involvement and engagement (PPIE) with innovation in the health system in England is yet to be developed.

PPIE happens through a broad range of activities, including identifying innovation needs; providing input into the design and testing of innovations; establishing educational activities and materials for patients about new products, technologies and services; supporting implementation of innovations in hospitals; participating in evaluations; and recruiting PPIE contributors. However, engaging patients and the public can be challenging, sometimes resulting in token involvement and variable practices. For PPIE to have value, it has to be meaningful in relation to the quality, relevance, efficiency and impact of the innovation effort.

Recommendations

- The innovating health system needs to create opportunities for PPIE across the entire innovation pathway while mitigating the unintentional risks of tokenistic involvement that mandatory engagement can sometimes create.
- Healthcare policymakers, practitioners and service users should build on current developments and establish a national strategy and implementation plan for PPIE in innovation, with a clearly defined set of principles guiding meaningful involvement.
- Innovation and healthcare actors should invest in coordinating PPIE activities and resources among local, regional and national stakeholders and across improvement, innovation and research efforts. This includes mapping existing PPIE structures for better use of capacity in the system and signposting information that is important for patients and the public (for example on opportunities

to engage with innovation, and on available innovations and their impact).

- Ensure signposting and communication efforts make use of information sources that patients and the public consult (such as social media platforms, peer support groups and websites, charities, and NHS websites such as NHS Choices).



Principles for patient and public involvement and engagement (PPIE)

- A set of clearly defined principles and values should be co-developed with patients and the public to underpin a national strategy for PPIE with innovation, including:
- Ensuring that PPIE is meaningful and not a tick-box exercise.
- Embedding PPIE opportunities across the innovation pathway and communicating them to patients and the public in an accessible language and format.
- Pursuing diversity in the types of individuals that can contribute and recognising a need for an appropriate match between the type of PPIE representative and the nature of engagement needed.
- Building capacity for patients, carers, the public, innovators, providers, policymakers and researchers to engage with each other and to share experiences about the value of engagement and effective ways of engaging.
- Providing feedback on the value and impact of PPIE and on the progress and impact of innovation initiatives.
- Acknowledging and rewarding contributors.
- Evaluating PPIE processes and outcomes.



Funding and commissioning of innovation

The current landscape

A variety of funding schemes support innovation in the health system, but there is a need to improve the coordination, sustainability and stability of funding flows. A key risk in the current environment is that each funding mechanism addresses a specific need, but does not affect the wider innovation system (or potentially weakens that system by confusing decision makers and distracting from strategic goals).

Through their efforts to map the health innovation landscape, the Department of Health and Social Care, Office for Life Sciences and NHS England have identified a range of funding schemes supporting health and care innovation across six organisations. This could be a useful resource for helping those seeking to identify funding opportunities and could also inform efforts to establish a better coordinated and sustainable funding landscape. Further actions are needed to build on this development.

Recommendations

- Enhance collaborative working between government departments, public bodies and other funders (for example through joint funding programmes or shared posts for individuals).
- Take stock of existing funding schemes, their roles, remits, similarities and overlap, and where they sit in relation to NHS innovation needs and priorities. Funding allocation will need to recognise that different types of innovations, and different activities, may have different costs.
- Raise awareness about available funding schemes and how they are related and/or complementary.
- Ensure funding schemes support the development and adoption of innovations with diverse cost and quality benefits over time. Only cost-neutral or cash-saving innovations will not incentivise or sustain an innovating and excellent NHS for the future – a focus on quality-improving innovations is also needed.



Types of funding schemes

Historically, a greater number and variety of schemes have focused on innovation development funding than on funding for innovation adoption. Examples include Innovate UK and SBRI Healthcare funding; NIHR Invention for Innovation; NHS England funding, including for the Clinical Entrepreneurs Programme; various accelerator, catalyst and catapult funds; philanthropic funding; Health Foundation support; medical charity funds; private sector investments; and funding via various European programmes. More balanced funding is needed across the innovation process. Initiatives such as the Innovation and Technology Tariff (ITT), the Innovation and Technology Payment (ITP) and the NHS Innovation Accelerator programme are starting to address this issue.

- Enable an innovation portfolio strategy that balances short- and long-term considerations about upfront investments, short-term returns and longer-term cost and quality gains through a de-politicised structure (with cross-party and cross-departmental committees). Portfolio management techniques can support transparent and robust decision making on portfolio investments.
- Complement funding pull mechanisms that respond to the supply of existing innovations (such as ITT and ITP funding schemes) with new pull mechanisms that are more responsive to demand (such as pre-commercial procurement commitments for innovations that respond to an articulated demand or meet quality and cost criteria, and adaptive and outcome-based commissioning models).
- Explore and evaluate the effectiveness and scalability of adaptive risk-sharing agreements between private sector innovators and the NHS (including agreements that cover the upfront costs of testing products for small and medium-sized enterprises (SMEs), flexible and adaptive pricing arrangements dependent on real-world

performance or guaranteed market access and price-volume agreements, conditional reimbursement, and deferred payments).



Strategic policy: aligning policy design with implementation requirements and success criteria

The current landscape

Policies that appear sound and rooted in evidence may have limited uptake because they do not integrate implementation requirements into policy design or make their criteria for success explicit.

Recommendations

- When designing new policy interventions, assess how they relate to the existing policy infrastructure to avoid unnecessary duplication.
- Ensure that innovation, improvement and research policy bodies collaborate more closely to decide on the needs for and design of new policy initiatives.
- Identify areas where joint funding of innovation efforts can prevent piecemeal investments and support scale.
- Specify what financial and human resources will be required for implementation.
- Identify and communicate the relationships that are needed for successful implementation.
- Be clear about the required physical and information infrastructure for implementation.
- Specify key metrics for evaluating success upfront.
- Identify sources of implementation support that stakeholders could access and contact.
- Communicate and raise awareness about new innovation policies and associated initiatives by considering different stakeholder groups' information needs, incentives and accountabilities.
- Provide sufficient notice for stakeholders to be able to engage.



Measuring success

The current landscape

Evaluating the innovation process and its outputs and impacts is essential for understanding the effect of innovation on the health service, patients and the economy, as well as for assessing where future policy efforts might need to focus their attention. Learning from sound measurement is also important for guiding efforts to improve how innovation is done in the health system. Commonly used indicators (such as research and development expenditure, patents, publications, Gross Domestic Product and new product sales) fail to capture the complexity and diversity of innovation processes, or to account for the diversity of factors that influence healthcare innovation pathways and their outcomes. Better metrics are needed to understand innovation impact.

Recommendations

- We propose four types of indicators to consider when measuring innovation performance: (i) indicators of the progression of an innovation across different stages of health innovation pathways; (ii) indicators of the adoption and diffusion of innovations through the healthcare system; (iii) indicators that track the impact of an innovation on patients, the population, the health system and the wider economy; and (iv) indicators of capacity for innovating in the healthcare system.
- Indicators should reflect concerns for assessing health innovation relevance, efficiency, effectiveness, impact and sustainability. Stakeholders evaluating health innovation performance need to balance concerns for the relevance of specific indicators with data availability and feasibility.
- The establishment of appropriate indicators may need to happen in parallel with capacity-building in the health system, in particular in relation to data and evidence infrastructure, since indicators are only as useful as the quality of the data that supports them.

Conclusions

The innovation system supporting the NHS has been strengthened in recent years but more needs to be done to maximise the potential benefits. These actions should be based on four core principles.

First, **innovation strategies and policy should be rooted in a whole care-pathway approach**, rather than focused exclusively on solutions for only one part of the pathway (such as primary, acute or community care). This means identifying needs across care pathways and supporting the development and use of combinations of solutions (be they high- or low-tech products, technologies or service models) that can yield the required improvement in terms of quality and cost.

Second, **success requires balancing shorter-term, 'quick-win' actions with longer-term transformational interventions**.

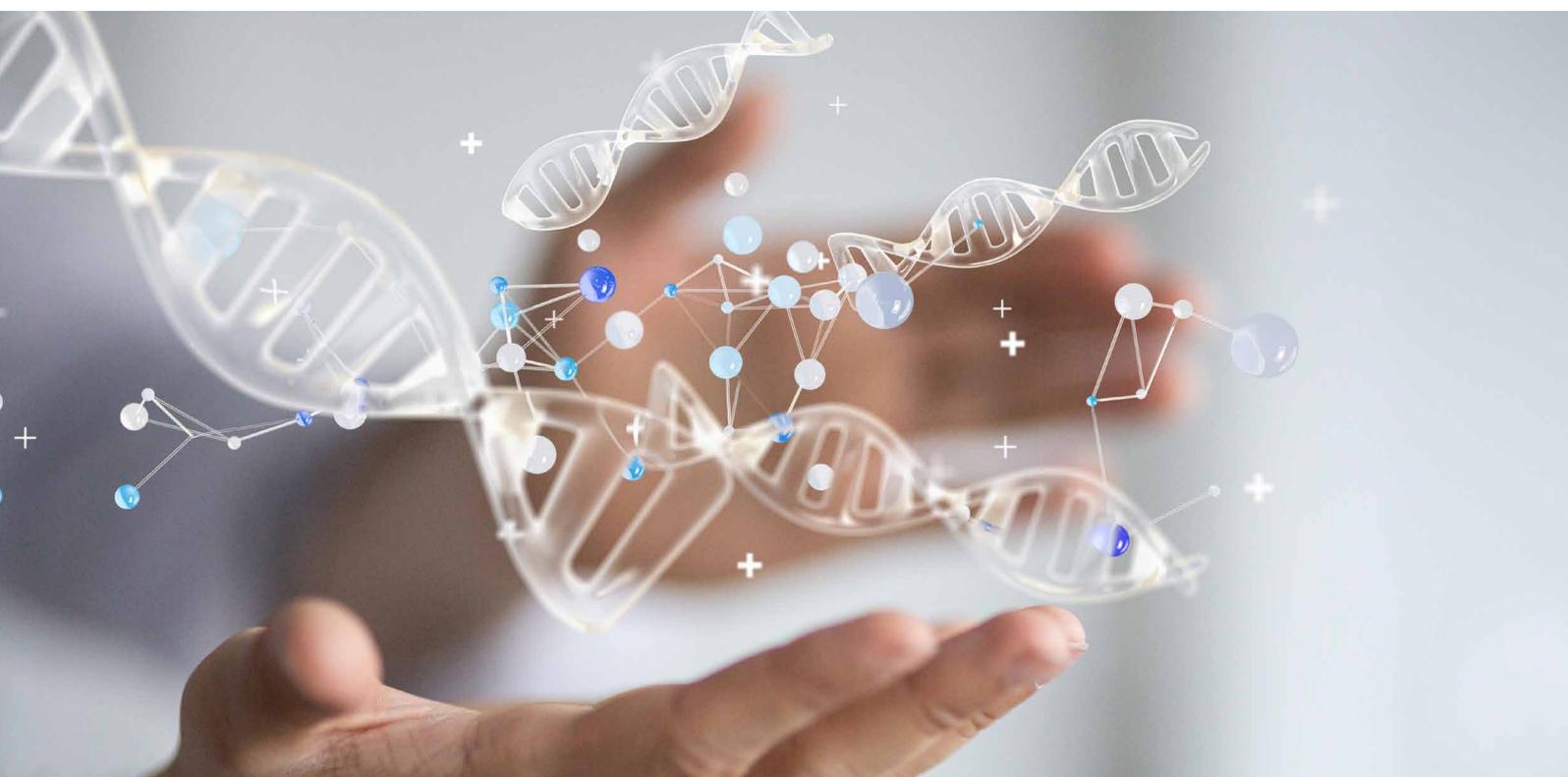
Third, it is critical to **assess how new policies and interventions relate to the existing policy infrastructure** in order to avoid wasteful duplication, enable coordination and capitalise on existing capacity in the system.

Finally, transformative change in healthcare needs to target the structures and funding that support innovation as well as culture and behaviour.

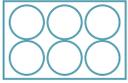
The **need for cultural and behavioural change is critical if innovating is to happen at scale**

and sustainably. This means health innovation policy must simultaneously address the diverse and interdependent drivers of an innovating health system. Our study found that the effect of population-level factors (such as the prevalence of health conditions, or the age of the population) and features of clinical commissioning groups (such as CCG quality, net expenditure, financial performance, number of employees and CCG assurance ratings) on the uptake of innovation varies across different medicines. Our research indicates that it is system-level factors and types of drivers that seem to weigh particularly heavily on the likelihood for engaging with innovation and with uptake.

Policymaking has a crucial role to play in realising a vision for a health system where innovating contributes to the quality and efficiency of delivering care and to improved patient outcomes. But policymakers can neither make innovations nor spread them, nor is compliance with mandates guaranteed. A balanced and 'hybrid' model of governance and leadership for innovating in the health system – which supports both top-down and bottom-up actions – is already emerging and the possibility of a truly innovative health and care system is achievable. It is hoped that the research evidence and recommendations set out in this report can help deliver this.



Case vignettes of 14 innovations complemented the other research methods used in this study



HIGH-SENSITIVITY TROPONIN ASSAYS

Troponin is a diagnostic marker used to detect heart disorders. High-sensitivity troponin assays can detect smaller amounts of troponin in the blood than traditional procedures, and can therefore be used to identify heart disorders earlier than previously possible.



REMOTE CARDIAC MONITORING DEVICES

These are systems in patients' homes that monitor the performance of their cardiac devices, such as implantable cardioverter defibrillators, to make sure that they are working properly. The remote monitoring devices can also capture other information on the patient's health that may be relevant (such as changes to the heart rate or blood pressure). The devices send data to clinicians via the Internet, allowing them to monitor their patients from a distance, and to reduce the number of face-to-face consultations.



ENDOCUFF VISION™

ENDOCUFF VISION™ is a medical device used as a colonoscope attachment to improve mucosal visibility to better and earlier detect abnormalities such as polyps, with the goal of contributing to the prevention of bowel cancer.



SLEEPIO

Sleepio is a digital self-help programme that helps users improve their sleep and overcome insomnia. The programme is based on cognitive behavioural therapy (CBT) and offers clinically proven cognitive techniques and behavioural strategies.



PROSTATIC URETHRAL LIFT (UroLift®)

Prostatic urethral lift is a minimally invasive surgical technique to treat benign prostatic hyperplasia (enlarged prostate). The technique involves introducing a device through the obstructed urethra to lift and hold the enlarged prostate tissue in order to clear the opening of the urethra, allowing urine to flow normally again and relieving patients' symptoms.



DRUG-ELUTING STENTS

Drug-eluting stents were developed to treat the effects of the arteries narrowing in the heart, which can occur after a balloon angioplasty to treat coronary heart disease. They work by opening the narrowed blood vessels to increase blood flow to the heart and also by releasing an anti-inflammatory agent.



KOOTH

Kooth is an online platform for children and adolescents experiencing mental health or emotional challenges. It was developed to provide mental health services to those who cannot access face-to-face services or who prefer to engage through online means.



CASCADE MODEL FOR GENETIC TESTING OF FAMILIAL HYPERCHOLESTEROLEMIA (FH)

Cascade testing is a systematic and cost-effective way of identifying individuals with FH, a genetic condition that causes increased cholesterol levels from birth, and hence higher risk of heart disease in young adults.



MOODGYM

MoodGYM is a form of computerised CBT programme aimed at young people suffering mild to moderate anxiety or depression. The interactive online programme provides a range of CBT techniques to improve mental health.



SECURACATH

SecurAcath is a single-use device to secure and stabilise central venous catheters. In comparison to previous products, SecurAcath decreases accidental dislodgements during dressing changes in comparison to previous products, reduces the risk of skin injuries and is time-saving.



NHS BLOOD DONOR CHAIR

A new and innovative NHS blood donor chair was developed in response to issues faced when using the previous version of the donor chair, including poor patient experience and process disruption due to fainting. The new chair reduces the risk of fainting, improves patient comfort and is also easier to transport and clean than the predecessor model.



HEARTFLOW FFRCT ANALYSIS

HeartFlow FFRCT Analysis is a non-invasive coronary artery disease detection tool using regular computer scans to develop a 3D model of coronary arteries and determine the impact of artery blockages on blood flow. It helps assess the impact of blockages and prevents having invasive – and potentially unnecessary – tests.



CONTINUING HEALTHCARE CHECKLIST AND THE DECISION SUPPORT TOOLKIT (CHC2DST)

CHC2DST is software that enables electronic assessment of eligibility for NHS funding for continuing care for patients with complex and long-term health conditions. Assessments are currently mainly done on paper and the process is slow and inefficient, causing distress to patients and their families. The CHC2DST assessment software makes the process faster and more efficient at a lower cost.



ONE-STEP NUCLEIC ACID AMPLIFICATION (OSNA)

OSNA is a test to analyse whether breast cancer cells have spread to the sentinel lymph nodes (the lymph nodes a cancerous tumour is most likely to spread to first). The test is carried out during the removal of the tumour and takes up to 45 minutes. If required, the lymph nodes can be removed during the same operation.

This summary describes work done by RAND Europe documented in *Innovating for improved healthcare: Policy and practice for a thriving NHS* by Sonja Marjanovic, Marlene Altenhofer, Lucy Hocking, Molly Morgan Jones, Sarah Parks, Ioana Ghiga, Carla Cox, Katerina Galai & Tom Ling, RR-2711, 2020 (available at www.rand.org/t/rr2711). To view this summary online, visit www.rand.org/t/rb10110. RAND Europe is a not-for-profit research organisation that helps to improve policy and decision making through research and analysis. RAND Europe's publications do not necessarily reflect the opinions of its research clients and sponsors. RAND® is a registered trademark.

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