



The UK – Driving Transformation through Innovation

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Agenda

- The UK's National Health Service (NHS)
- Why UK? For health technology



The NHS Defining Characteristics



NHS

Universal

Integrated

Organised



The NHS Constitution (2021)

7 Principles

- The NHS provides a comprehensive service, available to all
- Access to NHS services is based on clinical need, not an individual's ability to pay
- The NHS aspires to the highest standards of excellence and professionalism
- The patient will be at the heart of everything the NHS does
- The NHS works across organisational boundaries
- The NHS is committed to providing best value for taxpayers' money
- The NHS is accountable to the public, communities and patients that it serves



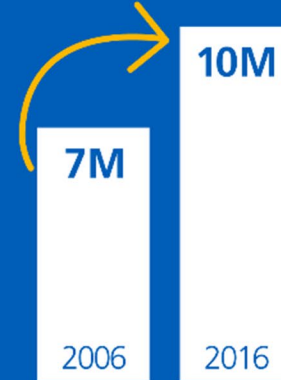
National Health Service: 70-years-old in 2018



1M patients
handled every
36 hours



people believe the
**NHS is "crucial to
British society"**



>40% increase
in procedures
over 10 years



**1.2 million
staff**



**>15,000 NHS
Organisations**



**206 Hospital
Trusts**



**191 Clinical
Commissioning
Groups (CCGs)**



**6,993 GP
Practices**

New reliance on digital health services



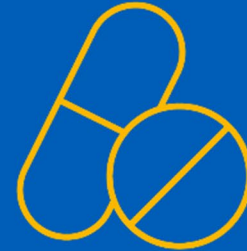
1,676,254

calls to
NHS telephone triage
in December 2017
(54,000 per day)



48M

visits per month
to NHS
guidance website



1.3M

items prescribed
electronically
every day

Digital transformation in acute care

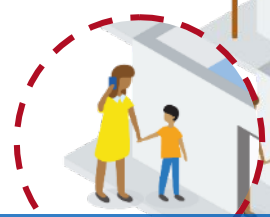
Better communication



AI and decision support



Triage and, NHS Pathways and NHS 111



The NHS Long Term Plan

The 10 year strategy
Focusing on integration,
prevention, empowering
citizens and supporting our
workforce to take
advantage of innovation.

**No health and care
system on the planet can
cope with the rising
demand and the
shortage of staff by
simply reacting.**

**Technology alone is not
enough. We need
innovation.**



UK Market Entry



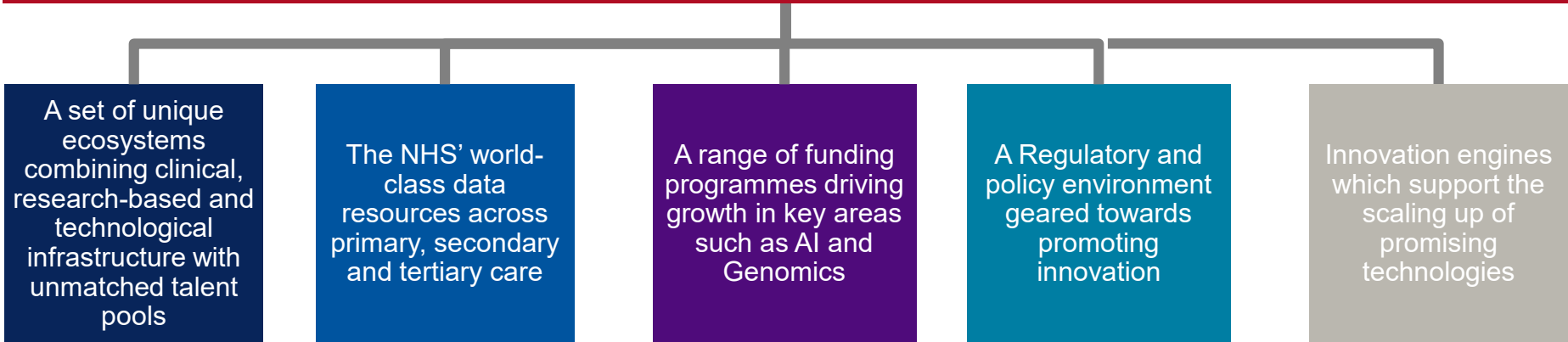
Points to consider:

1. The NHS is not a single entity.
2. Digital Health companies should familiarise themselves with the Digital Technology Assessment Criteria (DTAC).
3. UK is an ideal system to prove yourself in a tough market with high standards and regulation, great evidence generation capability and competition and gain credibility before you springboard into other markets
4. Expect to tailor yourself to local needs.
5. Expect to demonstrate evidence of clinical effectiveness, budget impact and human factors
6. Expect to demonstrate how you consider patients. Patient engagement and patient empowerment are extremely important.



The UK

The UK is a prime destination for developing the next generation of innovation in Digital Health and Data-driven solutions.





1. Ecosystems to support creation of next gen technology

The UK offers world-class publicly-funded infrastructures, talent and expertise to help create innovative organisations with a global potential.

- 8 of Europe's top 20 universities and medical schools
- Clusters of Digital Health in Oxford, Cambridge and London already form the world's leading Digital Health Hub
- Some of the leading clinical centres of excellence participate in the development of such technologies
- HealthTech is the largest employer in the broader UK Life Sciences sector, with 127,400 people in 3,860 companies, with a combined turnover of £24bn.

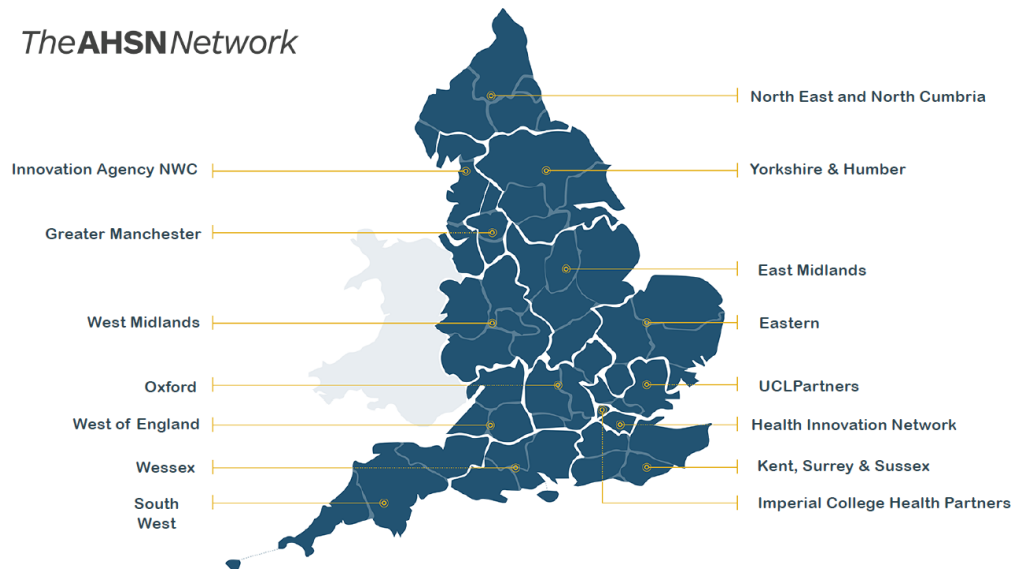
- Major, networked centres provide easy access company requirements: incubation, specialised accommodation from R&D to manufacturing, supply chain, skilled employees, industry organisations, business angel and venture communities throughout clusters and devolved nations
- Co-located with major academic and healthcare centres and the Academic Health Science Networks offering potential investment opportunities, R&D collaborations and evaluation expertise
- Well established Trade Organisations representing the Industry voice to Government, networking opportunities and services

UK – Market Entry

AHSNs mobilise expertise and knowledge across health and care, academia and industry to identify and pull transformative innovation into the NHS quickly.



The AHSN Network





2. The NHS' world class data assets & infrastructure

The NHS' data assets are backed by a number of networks and access mechanisms to allow digital health companies to maximise their potential.

- Data resources and clinical samples with unparalleled breadth and depth as well as quality, consistency and uniformity including longitudinal data.
- National infrastructure to provide connected data such as the NHS Spine
- Forums and research collaborations to maximise potential of large patient and research data sets
- Data sources include (MHRA's CPRD and the RCGP Research and Surveillance Centre), Secondary Care activity (NHS Digital's Hospital Episode Statistics) to disease registries (PHE's National Cancer Registration and Analysis Service (NCRAS), audits (the Myocardial Ischaemia National Audit Project (MINAP) by National Institute for Cardiovascular Outcomes Research (NICOR)) and biobank and genomics data (Genomics England, UK Biobank and Generation Scotland).
- Health and Social Care Network (HSCN), National Pathology Exchange (NPEx) and Spine
- Investment of £100m in six major MRC Medical Bioinformatics Awards and £37.5m over five years in Health Data Research UK (HDRUK) hubs (7 DIHs)



3. A number of funding options

The UK has a range of private and public funding sources which have grown substantially.

- 7 of Europe's top 10 VC funds call the UK home and last year London attracted more VC funding than any other European city. VCs are comfortable investing in the UK, viewing it as a global showcase and see no problem with investing in foreign innovation seeking money in the UK.
- Government commitment towards key areas of health tech through the Industrial strategy and other programmes has created opportunities for companies to grow
- Silicon Valley firms invest heavily in the UK with over £1bn invested into UK companies by West Coast investors in 2017 and a 252% increase in deals since 2011 across all sectors with a strong showing in the Life Science, HealthTech and MedTech sectors. East Coast investors pumped in £1.3bn in 2017 alone.
- Drive over £20 billion of investment in innovative and high potential businesses, including through establishing a new £2.5 billion Investment Fund, incubated in the British Business Bank
- Invest £725 million in ISCF to capture the value of innovation
- £250m for a National AI Lab at NHSX in addition to the 5 AI Centres of Excellence



4. Policy and regulation that drives innovation

The UK has committed to developing a world-leading regulatory environment of data-driven technologies with multiple bodies working together across the innovation pathway.

- Registration with the MHRA following CE marking (MDD-MDR)
- Development of evidence through the National Institute of Health Research (NIHR) ecosystem
- Evaluation of technology through National Institute of Clinical Excellence (NICE)'s MTEP programme
- Protection of data during care delivery and research through the information commissioner's office (ICO) and the National Data Guardian (NDG) as well as the Health Research Authority (HRA)
- The Medicines and Healthcare products Regulatory Agency (MHRA) regulates medicines, medical devices and blood components for transfusion in the UK. It works with notified bodies such as BSI Healthcare and SGS to handle the conformity assessment and assess whether manufacturers and their medical devices meet the requirements set out in legislation. This includes full quality assurance, examination of the design, testing of a representative sample, verification etc
- The National Institute for Health and Care Excellence (NICE) evaluates new, innovative medical devices and diagnostics and runs the Medical Technologies Evaluation Programme (MTEP) which considers technologies that could offer substantial benefits to patients and the health and social care system over current practice. NICE works with partners to develop evidence standards framework for digital health technologies.



5. Enabling scale-up and growth of innovative tech

Innovation culture – The UK has an unmatched track record of scientific discovery feeding a unique culture of enterprise and innovation.

- No other country has a single payer testbed as large as the NHS and the UK has its own innovation agency - Innovate UK.
- On start-ups per capita, Britain now tops the United States. The Accelerated Access Collaborative (AAC) is working to make the UK one of the most pro-innovation healthcare systems in the world
- Nesta has mapped over 50 UK accelerators and incubators in the space.
- 150 companies supported by our Innovate UK / AHSN innovation development programme, SBRI Healthcare, in 2018
- 11 nationally funded NHS/academic centres across the UK focused on translational medicine and evidence generation for MedTech (NIHR MMedTech and In Vitro Diagnostics Centres)
- 5 NHS Centres of Excellence for AI, Radiology & Digital Pathology working with industry partners
- 7 Health Data Research Hubs: collaborations of NHS, academia, patient, charity and industry partners including Roche, AstraZeneca, IBM, Microsoft IQVIA and NWEH
- Evidence generation opportunities in a diverse population-level test bed of 65 million people with expanding access to anonymised patient datasets for research and ‘real world’ evaluation within a national healthcare system

Many thanks

