Development and Deployment of AI in the UK NHS

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Our mission is to enable healthcare AI and digital health technologies which are **safe**, **effective**, and **equitable**.

UNIVERSITY OF BIRMINGHAM

NHS
University Hospitals Birmingham
NHS Foundation Trust

NICE National Institute for Health and Care Excellence

UK National Screening Committee

The NHS AI Lab

Accelerating the safe adoption of artificial intelligence in health and care

Medicines & Healthcare products Regulatory Agency

Artificial Intelligence: The work so far at the NHS AI Lab

AI Ethics

Building confidence among workforce and the public by addressing ethical concerns around the use of AI

Regulation

Working with regulators to ensure AI is safe and streamline processes to enable innovation

Skunkworks

Collaborating with and upskilling trusts on AI proofs of concept – 16 completed to date

The AI Awards

£123 million invested to test and evaluate 86 AI technology projects

National COVID Chest Imaging Database

Built chest scan database for COVID-19 research (c. 100,000 images) and blueprint validation process for COVID-19 AI algorithms

AI Imaging (AIDP)

Launching a large-scale trial of a centralised deployment platform for AI products across 14 trusts in Summer 2023

The NHS AI Lab

Accelerating the safe adoption of artificial intelligence in health and care

AI in Health and Care Award

Makes funding available to accelerate testing and evaluation of AI technologies that meet the aims set in the NHS Long Term Plan.

86 projects over 3 rounds

£123m invested

444 live projects across the UK

99 hospitals across the UK involved

~ 338,754 patients impacted

AI Award innovations

AI technologies may have a variety of applications in health and social care. Below are some examples:

Health Promotion and Prevention:

- Digital epidemiology and disease surveillance
- National screening programs
- Preventative advice
- Self-management

Diagnosis and Treatment:

- Symptoms checkers and decision support for differential diagnosis
- Risk stratification
- Prediction of deterioration
- Personalised treatments

System Efficiency:

- Optimisation of care pathways
- Identification of resource requirements
- Electronic roster system
- Natural Language Processing for administrative tasks

WP 1 Qualification

WP 2 Classification

WP 3 Premarket requirements

WP 4 Post Market

WP 5 Cyber Secure Medical Devices

WP 9 AI RIG (AI Rigour)

WP 10 Project Glass Box (AI Interpretability)

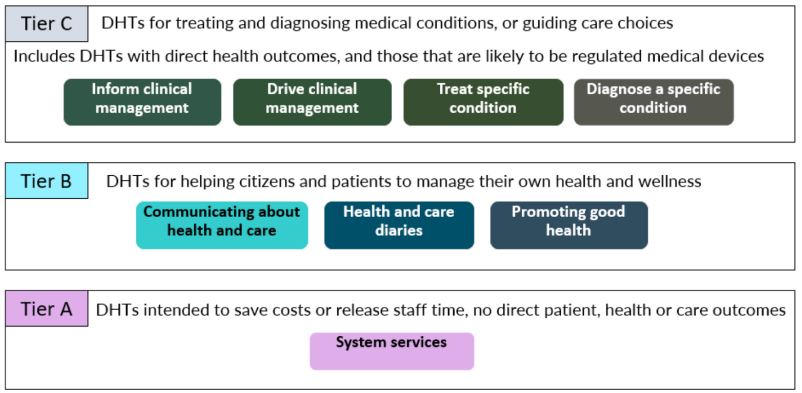
WP 11 Project Ship of Theseus (AI Adaptivity)

Medicines & Healthcare products Regulatory Agency

Guidance

Software and AI as a Medical Device Change Programme - Roadmap

Updated 17 October 2022



- **Design factors:** The 9 standards identify key aspects of the design process that impact the DHT's value to the health and care system, including ensuring the technology has the appropriate technical standards for safety and reliability. Standards 1 to 6 apply to tier A, B and C DHTs. Standards 7 to 9 do not apply to tier A DHTs.
- **Describing value:** The 4 standards apply across all tiers and provide information to build the value proposition of the DHT. Standards 10 to 13 apply to tier A, B and C DHTs.
- **Demonstrating performance:** Standards 14 to 16 are designed to help ensure that the DHT meets its performance expectations. Standard 14 only applies to tier C DHTs. Standards 15 and 16 apply to tier A, B and C DHTs.
- **Delivering value:** The 2 standards apply to DHTs in all tiers and show how DHTs should demonstrate their value for money.
- **Deployment considerations:** The 3 standards help to ensure that the claimed benefits of the DHT can be realised in practice, and apply to all 3 tiers.

Multi-agency Advice Service

The NHS AI Lab

Accelerating the safe adoption of artificial intelligence in health and care

To help innovators know **what regulations they need to meet and when,** and to help health and social care professionals feel confident in using these new technologies.

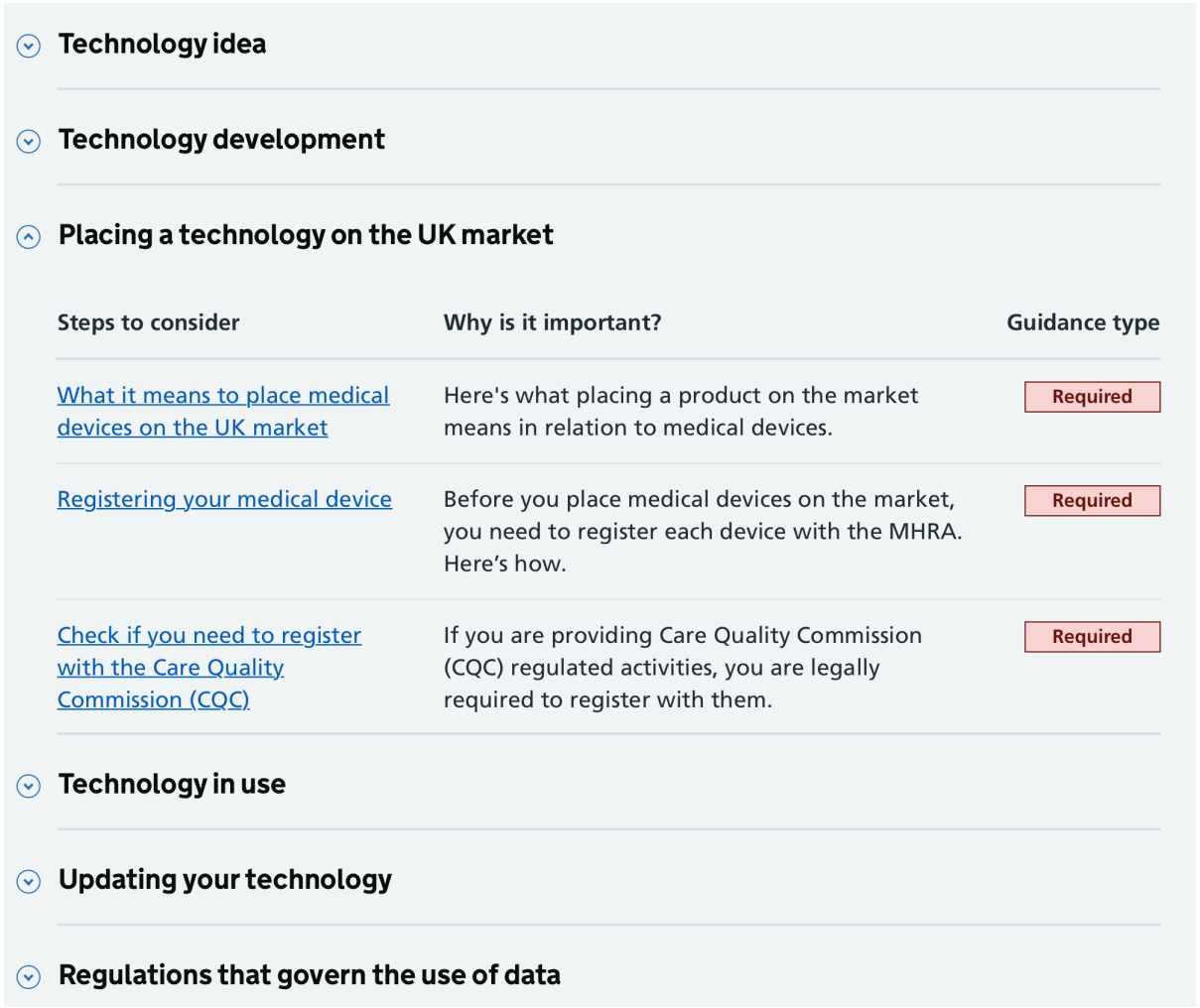
Developers and adopters can now access **a central source of regulatory and best practice guidance related to AI and digital technology in health and social care**, collated from various regulators and public bodies, and updated when the law is.

NICE National Institute for Health and Care Excellence

Medicines & Healthcare products Regulatory Agency

CareQuality Commission

NHS Health Research Authority



Technology idea

Technology development

Placing a technology on the UK market

Steps to consider	Why is it important?	Guidance type
What it means to place medical devices on the UK market	Here's what placing a product on the market means in relation to medical devices.	Required
Registering your medical device	Before you place medical devices on the market, you need to register each device with the MHRA. Here's how.	Required
Check if you need to register with the Care Quality Commission (CQC)	If you are providing Care Quality Commission (CQC) regulated activities, you are legally required to register with them.	Required

Technology in use

Updating your technology

Regulations that govern the use of data

The **first report**[1] outlined a conceptual framework for understanding what influences confidence in AI among healthcare workers.

This second report:

- identifies archetypes within the workforce based on AI-related roles and responsibilities
- determines educational and training needs based on these archetypes and the findings and conceptual framework of the first report
- presents suggested pathways to develop related education and training offerings.

NHS
Health Education England
Digital Transformation

Topol Digital Fellowships

The Topol Digital Fellowship provides health and social care professionals with time, support and training to lead digital health transformations and innovations in their organisations.