

## Introduction to Digital Health - supplementary resource sheet

This fact resource link sheet has been prepared as a supporting document to the Introduction to the Digital Health Patient and Public representative training session. As part of an evolving training programme, the informational material is subject to refinement. Please let us know if you feel that this overview fact sheet could be improved.

### Digital Health and data. Key concepts:

**'Digital health' refers** to the use of digital technologies for health and healthcare. Digital Health involves the use of information and communication technologies to help address the health problems and challenges faced by people. These technologies include both hardware and software solutions and services, including telemedicine, web-based analysis, email, mobile phones and applications, text messages, wearable devices, and clinic or remote monitoring sensors.

Digital health is a multi-disciplinary domain involving many stakeholders, including clinicians, researchers and scientists with a wide range of expertise in healthcare, engineering, social sciences, public health, health economics and data management

Generally, digital health is concerned with the development of interconnected health systems to improve the use of computational technologies, smart devices, computational analysis techniques, and communication media to help healthcare professionals and their clients manage illnesses and health risks, as well as promote health and wellbeing.

Digital Health is associated with **promises** of efficiency, effectiveness, joined-up services, modernisation (...disruption), overcoming barriers to access (social, geographical), autonomy (self-care, self-management), transparency

The **challenges** of digital health include unintended consequences of how patients and staff see themselves, how staff and patients interact with each other, how staffs' work is organised as well as how patients' health is managed. Also, implementation of robust digital health solutions is hard, especially when there are multiple sources of complexity to navigate.

**Data** is recorded information. Information about patients is strictly regulated, see [these resources for an introduction to the use of patient data](#). Primary use of patient data refers to the use of data for direct care, secondary uses of data include health service improvement and health research. The UK currently has an opt out policy for storage and reuse of patient data.

There is also data recorded about the health system, and about health services that does not directly use patient information.

### Local digital health projects include:

- Connecting Care - <https://www.connectingcarebnssg.co.uk/>
  - a local electronic patient record that allows health and social care professionals directly involved in your care, to share a summary of your medical record.
- Sphere - <https://www.irc-sphere.ac.uk>
  - developing sensors for the home to diagnose and help manage health and wellbeing conditions. The technology will aid early diagnosis, lifestyle changes and the ability of patients to live at home
- Exploring the unexpected effects of digital health tools - [link](#)
  - This project aims to understand the consequences of using digital health tools in primary care. (Otherwise known as the DECODE study)
- University Hospitals Bristol. Global Digital Exemplar - [link](#)
  - One of 16 UK acute trusts to become a 'digital exemplar', leading the way in using technology to benefit our patients and improve our working practices.
- ALSPAC (Avon Longitudinal Study of Parents and Children) - [link](#)
  - The Avon Longitudinal Study of Parents and Children (ALSPAC), also known as Children of the 90s, is a world-leading birth cohort study, charting the health of 14,500 families in the Bristol area.

### Digital Health and Data seminal powerpoint presentations

- Empowering people through digital health and care services - [link](#)  
Indra Joshi, Digital Health and AI Clinical Lead, NHS England
- The Human Challenges of Digital - [link](#)  
James Freed, CIO, Health Education England, Programme Director, Building a Digital Ready Workforce
- Empowering people through digital technology for health and care - [link](#)  
Leanne Summers | Digital Strategy Delivery Lead | NHS England
- The possibilities and dangers of using patient data - [link](#)  
Dr Natalie Banner, Understanding Patient Data Lead, Wellcome
- How PHE Social Marketing is using digital innovation to change behaviour at scale - [link](#)  
Alexia Clifford Deputy Director, Marketing Activation. Public Health England

### Local Resources (key websites, policies and other)

- BNSSG Digital Roadmap - [link](#)
- Local Information Sharing Protocol (ISP 8) - [link](#)
- NHS Digital Guideline Information Asset Management Policy - [link](#)
- Local Authority Reuse of Public Sector information - [link](#)
- Local Authority Transparency Code - [link](#)
- Royal Academy of Engineering: Data sharing guidance and case studies - [link](#)

### **National/ international resources (key websites and policy docs)**

- Long term plan - [link](#)
- Topol Review - Digital Ready Workforce - [link](#)
- NHSX - [link](#)
- The NHS constitution - [link](#)
- NHS Transforming Digital Health site - [link](#)
- 20 Pilot programme for Digital Inclusion - [link](#)
- NHS Open Source - [link](#)
- Watcheter review (2016): Making IT Work (in health and care): - [link](#)
- NHS England's guide to STP Local engagement - [link](#)
- NHS England's Accessible Information and Communication Policy - [link](#)
- NHS England's Patient and Public Participation Policy - [link](#)
- EU General Data Protection Regulation - [link](#)
- Tech UK - [link](#)
- Future Lab
- World Health Organisation. Digital Health Recommendations - [link](#)
- Nesta - Digital Health ongoing project work - [link](#)
- Digital Health publication: articles about google in UK healthcare - [link](#)
- British Standards Institute - The emergence of artificial intelligence and machine learning algorithms in healthcare: Recommendations to support governance and regulation - [link](#)
- Open - data lexicon - [link](#)

<b>GLOSSARY</b>	
<b>Analytics</b>	Discovery, interpretation, and communication of meaningful patterns in data.
<b>Anonymised data</b>	This is information from many people combined together, so that it would not be possible to identify an individual from the data. It may be presented as general trends or statistics.
<b>Artificial Intelligence</b>	An area of computer science which involves the creation of machines that work and react like humans.
<b>Business Intelligence</b>	A set of strategies, processes, applications, data, technologies and technical architectures which are used by organisations <sup>1</sup> to support the collection, <a href="#">analysis</a> , presentation and dissemination of information.
<b>Caldicott Principles</b>	General rules that health and social care organisations should use when reviewing their use of patient information.
<b>Chief Clinical Information Officer</b>	Responsible for developing clinical strategy in overseeing the digital technology being implemented in the Trust.
<b>Chief Information Officer</b>	Job title commonly given to the most senior executive in an organisation responsible for the information technology and computer systems that support organisational goals.
<b>Connecting Care</b>	Local electronic patient record that allows health and social care professionals directly involved in a patient's care, to share a summary of their medical record.
<b>Data Dictionary</b>	A set of information describing the contents, format, and structure of a database and the relationship between its elements, used to control access to and manipulation of the database.
<b>Definition of data</b>	Facts and statistics collected together for reference or analysis.
<b>De-personalised data</b>	Information that does not identify an individual, because identifiers have been removed or encrypted. However, the information is still about an individual person and so needs to be handled with care. It might, in theory, be possible to re-identify the individual if the data was not adequately protected, for example if it was combined with different sources of information.
<b>Hacking</b>	Can mean unauthorized intrusion into a computer or a network <b>or</b> altering something to accomplish a goal that differs from the original purpose.

<b>Health informatics</b>	The capture, communication and use of data to support health professionals.
<b>Health Research Authority</b>	An organisation established to promote and protect the interests of patients, streamline regulation and promote transparency in health and social care research.
<b>Information Asset Register</b>	A way to help organisations understand and manage the information they hold.
<b>Information Commissioners Office</b>	The UK's independent authority set up to uphold information rights in the public interest, promoting openness by public bodies and data privacy for individuals.
<b>Linked data</b>	An approach to publishing and sharing information that gives a unique reference to each item in the data in a way that means it can be connected with other information.
<b>Local Digital Roadmap</b>	Regional plans for how health and social care organisations will achieve the ambition of operating Paper-free at the Point of Care by 2020.
<b>Malware</b>	Software which is specifically designed to disrupt, damage, or gain authorized access to a computer system.
<b>Open data</b>	Data that can be freely used, re-used and redistributed by anyone - subject only, at most, to the requirement to attribute and share alike.
<b>Open Source Software</b>	A system, programme or other product that people can modify and share because its design is publicly accessible.
<b>Primary use of data</b>	Using data for individual care.
<b>Secondary use of data</b>	Using data for Improving health, care and services through research and planning.
<b>Senior Information Risk Owner</b>	Owns an organisation's overall information risk policy and risk assessment process ensuring we have a robust incident reporting process for information risks.
<b>Understanding Patient Data</b>	A Wellcome Trust led initiative which aims to support discussions with the public, patients and healthcare professionals about uses of health and care data.