

# HDR UK & Digital Innovation Hubs Introduction

22<sup>nd</sup> November 2018



# Health Data Research UK's vision

To create a thriving, high-energy UK-wide network of **inter-disciplinary research expertise** that will:

- Disrupt traditional science by enabling **new scientific discovery** from large multi-dimensional datasets
- Apply **cutting-edge technologies** to enhance science, innovation and decision making
- Improve healthcare for a **population of 65 million people**



# About Us – our Collaborative Model



## Operating Model

- Ten Funders
- Separate legal entity, tiered structure
- Wellcome Trust base – **not a data controller**
- “Lean”

## Substantive Scientific Sites

- Science, leadership, NHS partnership and delivery

## Single set of Terms and Conditions for collaborations

- Core platforms, inter-operability, standards, governance, meta-data dictionaries
- Partnership – coordinating and associate ROs
- £120M Initial Investment

# Our triple aim

## Science and Innovation

Integration of data science with biomedical and health science expertise to perform ground-breaking research, with an initial focus on data analytics, precision medicine, 21<sup>st</sup> century clinical trials and modernising public health.

## Training the next generation

To develop novel approaches to research training and mentorship to foster a cadre of health data science researchers, on a substantial scale.

## Infrastructure- UK wide expert data services

Development and delivery of cutting-edge technologies and trusted research platforms that acquire, store, represent, and process large, multi-dimensional research data.

## Trustworthy use of data

We will work in partnership with the public, funders, social scientists and legal/ethical experts to champion the trustworthy use of data.



# A unique partnership

Our initial investment supports six Sites. Each has world-class expertise; a track record in using health data to derive new knowledge, scientific discovery and insight; and works in close partnership with NHS bodies, industry and the public to translate research findings into benefits for patients and populations.



1. Wales and Northern Ireland (Swansea and Queen's University Belfast)

2. Midlands (Birmingham, Leicester, Nottingham, Warwick)

3. Scotland (Glasgow, Edinburgh, Dundee, Aberdeen, Strathclyde, St Andrews)

4. London (Imperial, Kings, London School of Hygiene and Tropical Medicine, Queen Mary, UCL)

5. Oxford

6. Cambridge (EBI, Sanger, Cambridge University)

# Digital Innovation Hub Programme

A UK-wide initiative to enable the safe and responsible use of health-related data at scale for research and innovation



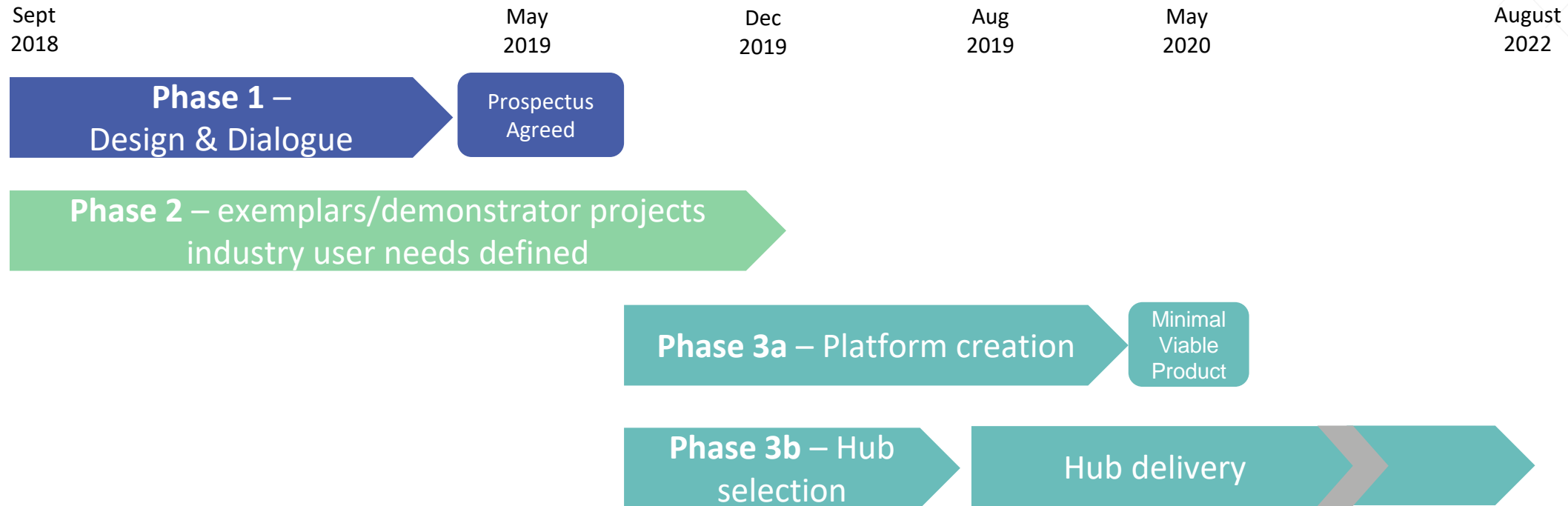
# Digital Innovation Hub Programme - what we are trying to achieve

- Create a **UK-wide infrastructure** with common processes, standards, governance and principles for the safe and responsible use of health data for research and innovation
- Within this, deliver **3-5 Digital Innovation Hubs** to connect health data across populations of 3-5 million people by 2019 and then scale to full UK population coverage
- Allow accredited researchers and innovators to access data safely and securely to **harness scientific knowledge and emerging technologies** at scale
- Support the development of future treatments, increase our understanding of disease and enhance health services
- Support a thriving life sciences industry in the UK

# Cooperating to deliver a platform to delivery world class health data research



## Three phase delivery plan



### **Phase 1: DESIGN & DIALOGUE PHASE September 2018-April 2019 (£3.7M)**

Creating a UK Health Data Research Alliance: Prospectus to define the specification for the architecture; data and technical standards and governance frameworks required to build a UK-wide health research data platform

### **Phase 2: DIGITAL INNOVATION HUB PILOTS: EXEMPLAR INDUSTRY PROGRAMMES September 2018 - December 2019 (£3M)**

Proof of readiness for industry uses: Delivery of approx. 6 industry relevant partnership demonstrator projects within 12 months

### **Phase 3: DELIVERY AND IMPLEMENTATION May 2019-June 2022 (£31M)**

DIH and UK Health Research Data Platform Delivery: 3-5 hubs with complementary research and innovation use cases, industry partnerships and clear benefits to the health and social care system, within an interoperable, trusted and secure governance framework



# Sprint Exemplar Innovation Projects - objectives and rules of the road

- Build upon best practice to identify and develop the processes, technical solutions, knowledge and skills needed to deliver robust, secure and scalable solutions.
- Projects to demonstrate confidence of concept of both the functions of an interoperable infrastructure and research and innovation relevant use cases.
- Successful projects will receive between £100k-£400k funding and last approximately 6 to 10 months
- Must be delivered by academic, NHS and industry consortia with Lead Applicant from NHS or academia
- Each Sprint Exemplar Innovation Project must have:
  - Close working partnerships with their regional NHS organisations
  - Advanced health data science capabilities
  - Clinical knowhow needed to deliver novel and scalable sprint projects
- This is an open competition judged by independent expert panel administered in partnership between Health Data Research UK and the MRC on behalf of the UK Research and Innovation (UKRI) Industrial Strategy Challenge Fund

**NOTE: Receipt of funding for a Sprint Exemplar Innovation Project will NOT be a requirement for future involvement in the Digital Innovation Hub delivery programme**

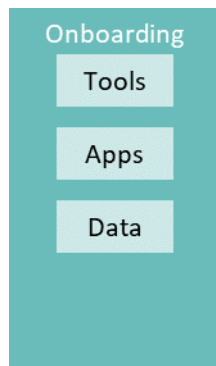
# Some problems you might propose to target



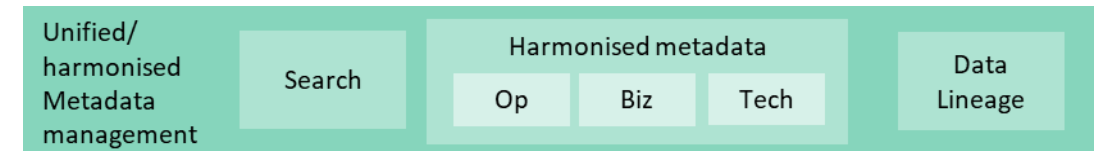
What are the right tools and procedures to keep identities safe while still providing the ability to report on adverse events?



How can we create secure data storage and analytical environments capable of managing large volumes of multi-dimensional data to support research at scale?



How do we onboard tools, applications and data in a way that allows research to happen quickly, balanced with the right assurance for all parties. How might we achieve this balance with a level of automation? How about dissemination of results with security?



We need users to be able to find what we are looking for quickly and easily. How can we create an effective UK scale discover and metadata management capability?

# Questions?