Data Services Platform

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NHS Digital

Information and technology
for better health and care

Agenda

- NHS Digital
- Data, Insights & Statistics
- Data Services Platform

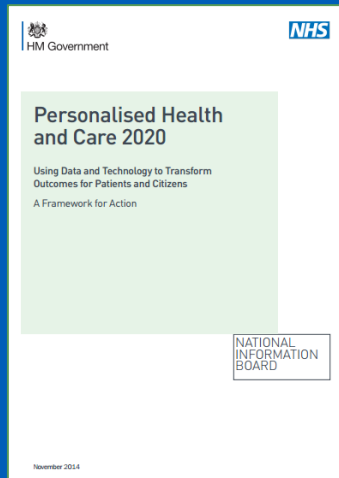**NHS Digital**

Our mission

To harness the power of information and technology to make health and care better

Our role

The national information and technology partner to the health and care system

The national strategy

NHS Five Year Forward View

- Published on 23 October 2014
- A shared vision for the future of the NHS, based around new models of care

Personalised Health and Care 2020

- Published by National Information Board on 13 November 2014
- The Five Year Forward View's data and technology strategy
- Use data and technology to improve health, transform quality and reduce the cost of services

NHS

FIVE YEAR FORWARD VIEW

HM Government

NHS

Personalised Health and Care 2020

Using Data and Technology to Transform Outcomes for Patients and Citizens

A Framework for Action
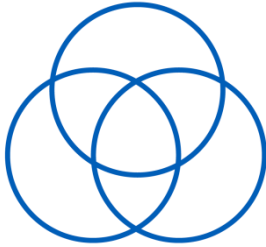
NATIONAL INFORMATION BOARD

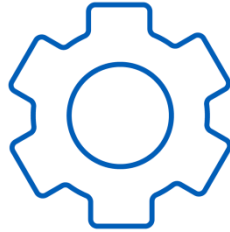November 2014

Five key areas of activity

NHS Digital strategy

Ensure that every citizen's data is protected

Establish shared architecture and standards

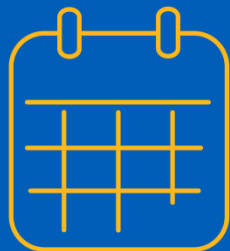**Implement** services that meet national and local needs

Help local organisations get the best from technology

Make better use of data and information

Information and technology for better health and care

45,000 patients daily use our e-Referral service

Secondary Uses Service enables payments for **£30bn** worth of NHS services every year

more than **1.3M** items a day are prescribed using the Electronic Prescription Service

NHS Choices receives **11M** visits per week

Information and technology for better health and care

The Spine handles about **2,000** messages per second

Every **5 seconds** a clinician accesses a Summary Care Record

1.3 million secure email accounts across health and care

1,200 peer reviewed research papers relied on our data in 2015

Data, Insights & Statistics

NHS Digital: Data, Insights and Statistics

Vision for 2020:

"a health and care system that has all the data and information that it needs, provided in an accessible and timely way, to enable it to provide the best possible services and to achieve world class health and care outcomes for patients."

How we will deliver this:

"we will empower the health and care system to be intelligent in the way it uses data and information to drive improvements in health and care, by delivering world class data and analytics services through the highest level of skills, expertise, tools, techniques and technology."
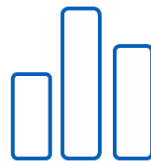
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Data: a strategy to add value
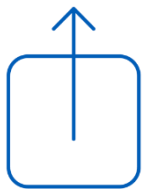
Data content

Data access
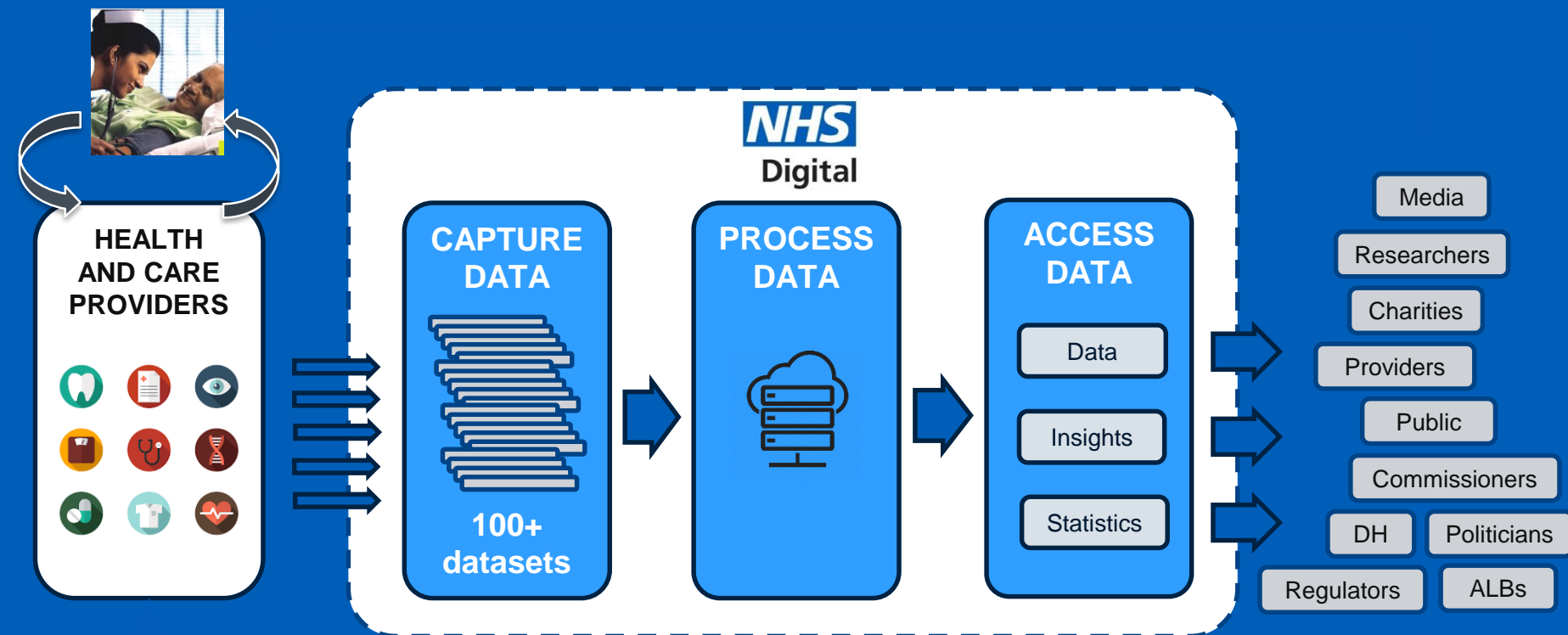
Publications

Insights

Infrastructure

Data science

Customer engagement

Workforce

The data journey

Who we work with…

Our data supports …

University of Oxford , Million Women Study
- The largest study of its kind in the world carrying out research on the cohort for over 20 years
- Main focus is on the effects of hormone replacement therapy, but the large cohort enables the study of a very broad range of health issues
- Study findings have influenced national policy, including recommendations on the prescribing and use of hormone replacement therapy

Imperial College London, Small Area Health Statistics Unit (SAHSU)
- Internationally recognised research into environmental health
- Assesses the risk to the health of the population from environmental factors at a small area scale
- Work includes substantive epidemiological enquiries of environmental health problems and methodological research
- Studies have produced over 200 peer reviewed publications

University of Bristol, Children of the 90s/Avon Longitudinal study of parents and children (ALSPAC)
- World leading birth cohort study, charting the health of 14,500 families in the Bristol area
- Provides a uniquely rich resource for studying environmental and genetic factors that affect a person's health and development.
- Over 1,500 academic papers published

Supporting life sciences
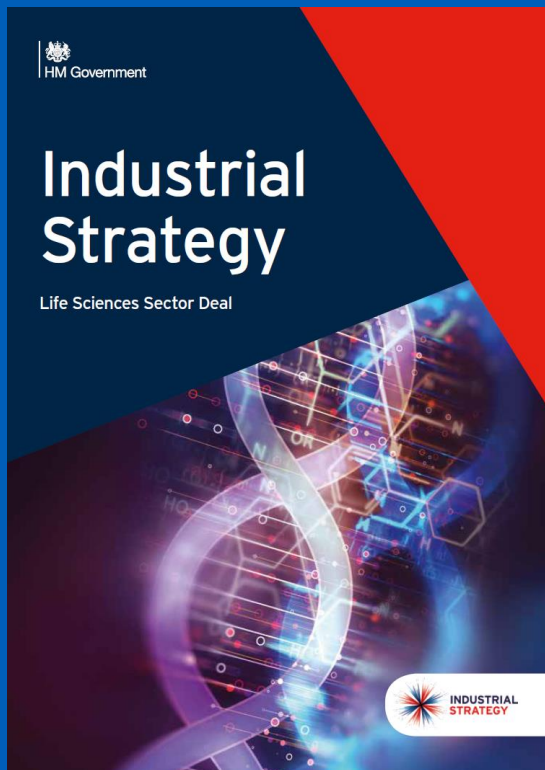
- Published December 2017

- Significant part of UK Government's 'post Brexit' strategy

- Focus to improve the UK's health data infrastructure, to drive innovation and investment in 'UK plc'

- Includes a commitment to *"create a sandbox for secure, remote data access for anonymised data in a safe environment"*

- Prof Sir John Bell *"NHS appears to have turned over a new leaf and, for the first time, is being extremely supportive in improving access to data while still protecting the rights of citizens"*

https://www.gov.uk/government/publications/life-sciences-sector-deal

Data Services Platform

The Data Services Platform

DI&S

- Data Collection
- Data Management
- Analytics
- Data Access

DSP

HEALTH AND CARE PROVIDERS

Capture	Process	Utilise
Data landing & validation	Data quality, person matching, transformation & de-identification	Data linkage, analysis & access

Media
Researchers
Charities
Providers
Public
Commissioners
DH
Politicians
Regulators
ALBs

18
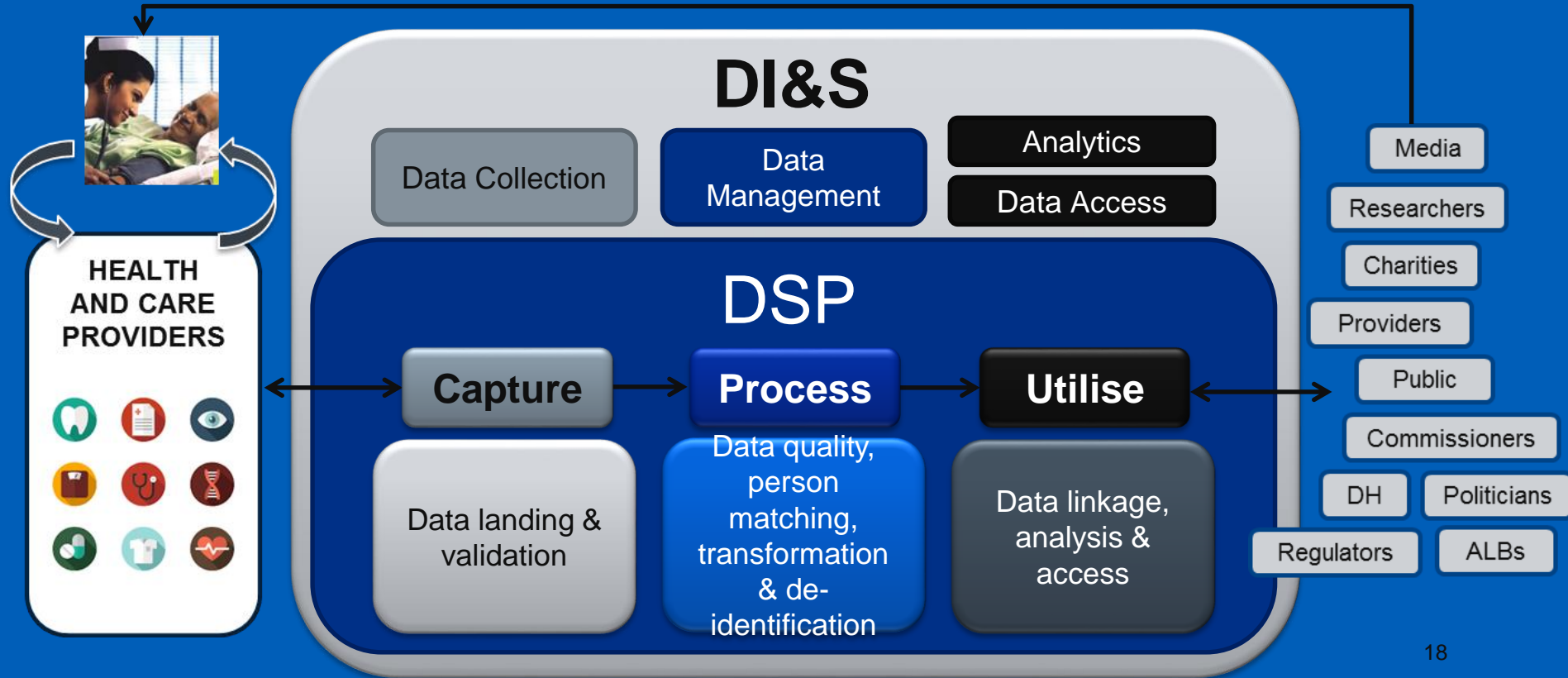
The Data Services Platform

"Transforming the way data is used to improve health and care"

- **Data senders:** ✓ improved security ✓ reduced burden
- **NHS Digital:** ✓ simpler, faster processes ✓ enhanced capacity ✓ focus on value ✓ innovative uses
- **Customers:** ✓ more timely data ✓ wider access to data ✓ better quality data
- **Citizens:** ✓ more secure data ✓ more transparent use ✓ supporting better outcomes
- **Health & care system:** ✓ supporting integrated health & care

DSP is about…

That can…

- 'Handle larger volumes of data than we have ever had before'
- About to process, analyse and disseminate spine data, hundreds of millions of records for the first time
- This will only increase
  - Life science commitment to unlock more data
  - Apps and wearables
  - PHE onboarding

That can…

- Process data faster than we have ever processed before
- Bring about automation on a scale we have not previous seen
- Enable humans to do what only humans can do
- Analyst quote 'changes the way I work, rather than spending time designing the perfect data query (due to how long it takes to run) with the processing power we now have I do not have to'
- Automatically create data assets for dissemination

That can…

- Provide location agnostic / secure seamless access to data

- Remote data access labs / environments to our customers

- To enable customers to access pre canned data, load their own data

- Export allowed and appropriate outputs from these environments

That can…

- Enable advanced analytics on complex datasets
- Utilise the latest business intelligence tools
- Enable data science AI and machine learning techniques to be applied to data
- Enable complex statistical models to be applied to data
- Provide answers and insights to questions humans wouldn't think to ask.

That can…

- Is capable of receiving data flows and collections in real time….. And processing this data
- Submissions of data from NHS Providers from April 2018 in the standard contract states daily
- This frequency will only increase as we move forwards
- Real time processing and turnaround of data

That can…

- Link data by default, using a common single identifier
- Acquire multiple datasets
- Process, cleanse, and apply a common single ID across our datasets
- Check and apply re-identification rules as a result of data linkage
- Enable dissemination of linked data

That can…

- Receive data from a variety of sources and places in different formats
- Capable of receiving data from all parts of the health system.
- Enable collaborative working and unification of datasets with other ALBs

That can…

- Comply with the latest data security and governance requirements
- Ensuring all laws and legal basis for NHS Digital are complied with
- Including
  - GDPR
  - Health and social care act
  - Digital economy act
  - Human rights act
  - Common law duty of confidence
  - Many more…….

DSP components

Data Landing Portal (DLP) — Web application supporting secure local data transfers between data senders & recipients

Master Person Service (MPS) — Person tracing system that uses the Personal Demographic Service & enhanced matching algorithms

De-ID / Re-ID — Nationally consistent de-identification (De-ID) and re-identification (Re-ID) tool
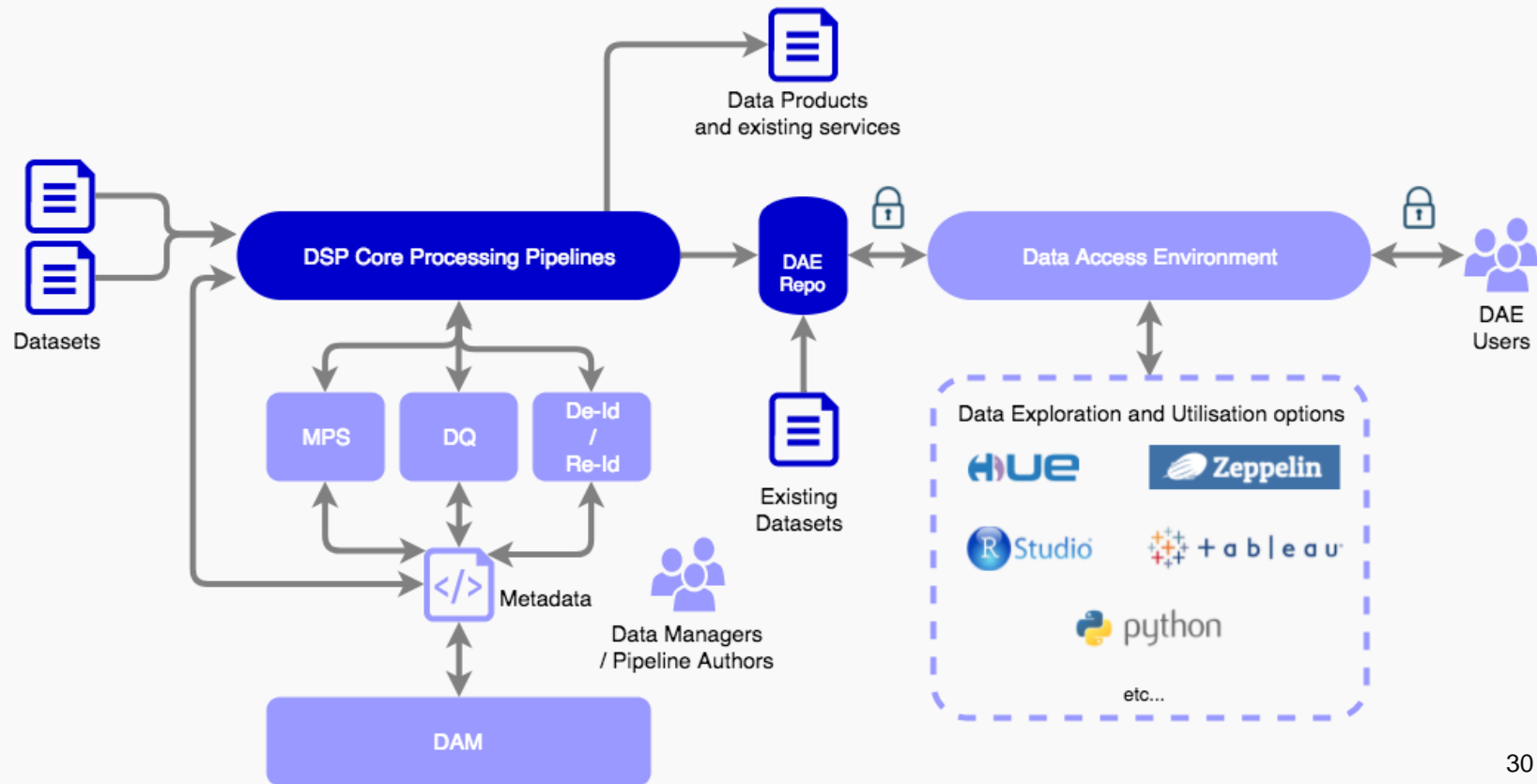
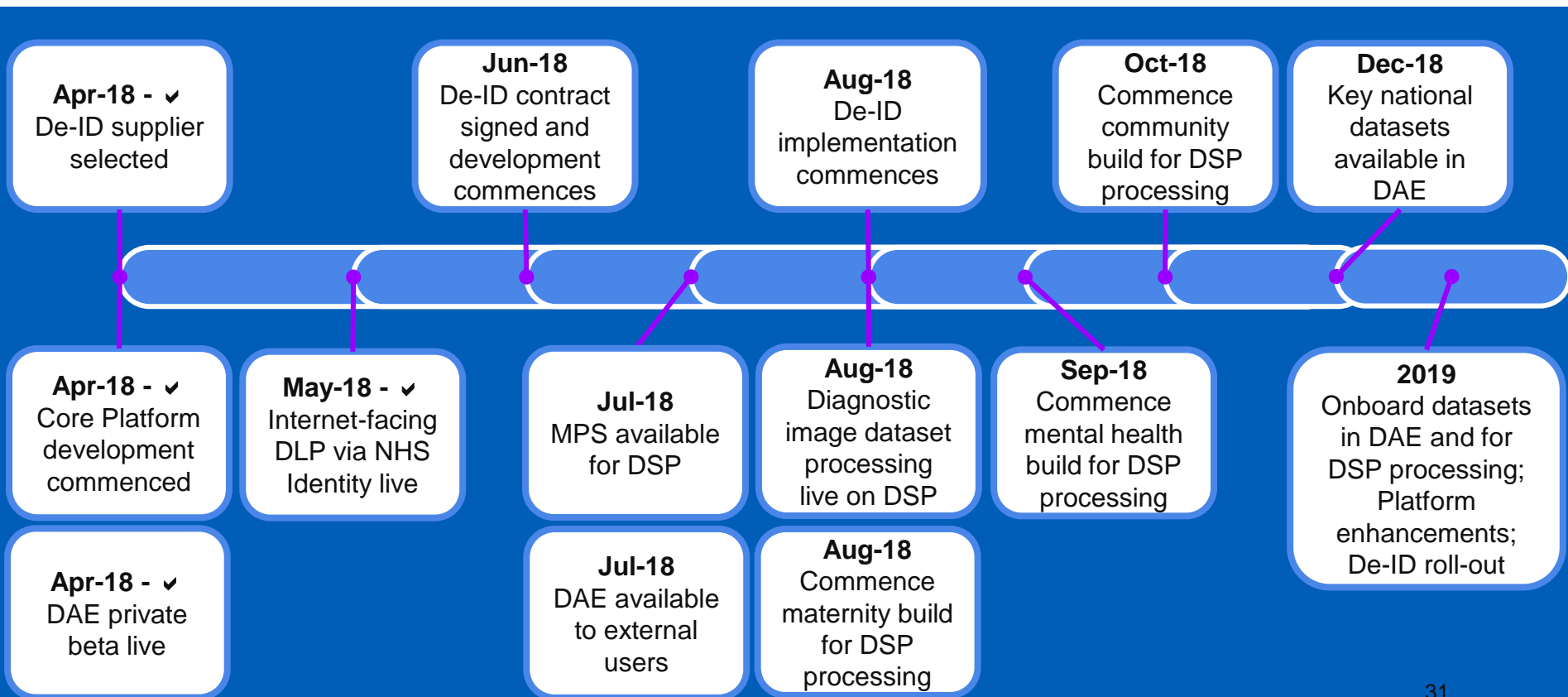**Core Platform** — Framework that integrates DSP's components, processing & storage

Data Access Environment (DAE) — A secure way for users to remotely access better linked information faster

DSP design

Delivery plan

Apr-18 - ✔
De-ID supplier selected

Jun-18
De-ID contract signed and development commences

Aug-18
De-ID implementation commences

Oct-18
Commence community build for DSP processing

Dec-18
Key national datasets available in DAE

Apr-18 - ✔
Core Platform development commenced

May-18 - ✔
Internet-facing DLP via NHS Identity live

Jul-18
MPS available for DSP

Aug-18
Diagnostic image dataset processing live on DSP

Sep-18
Commence mental health build for DSP processing

2019
Onboard datasets in DAE and for DSP processing; Platform enhancements; De-ID roll-out

Apr-18 - ✔
DAE private beta live

Jul-18
DAE available to external users

Aug-18
Commence maternity build for DSP processing

What DSP means for researchers

Faster access to data that is…

Secure Better-linked High quality More timely Transparent

…whilst benefitting from…

- ✓ DARS Integration
- ✓ Interrogation and Analysis Tools
- ✓ 'Bring Your Own Data' capability

Engaging with the research community

- Research Advisory Group – innovation events
- Health Data Research UK
- DAE Private Beta testing and feedback
  - Public Health organisations, research community members
  - Testing and deployment of a range of analytical tools

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