

# **NHS Digital Data Processing Services**

*Transforming the way we work with data to  
improve health and care*

UKAuthority, 11 October 2019

# Our mission

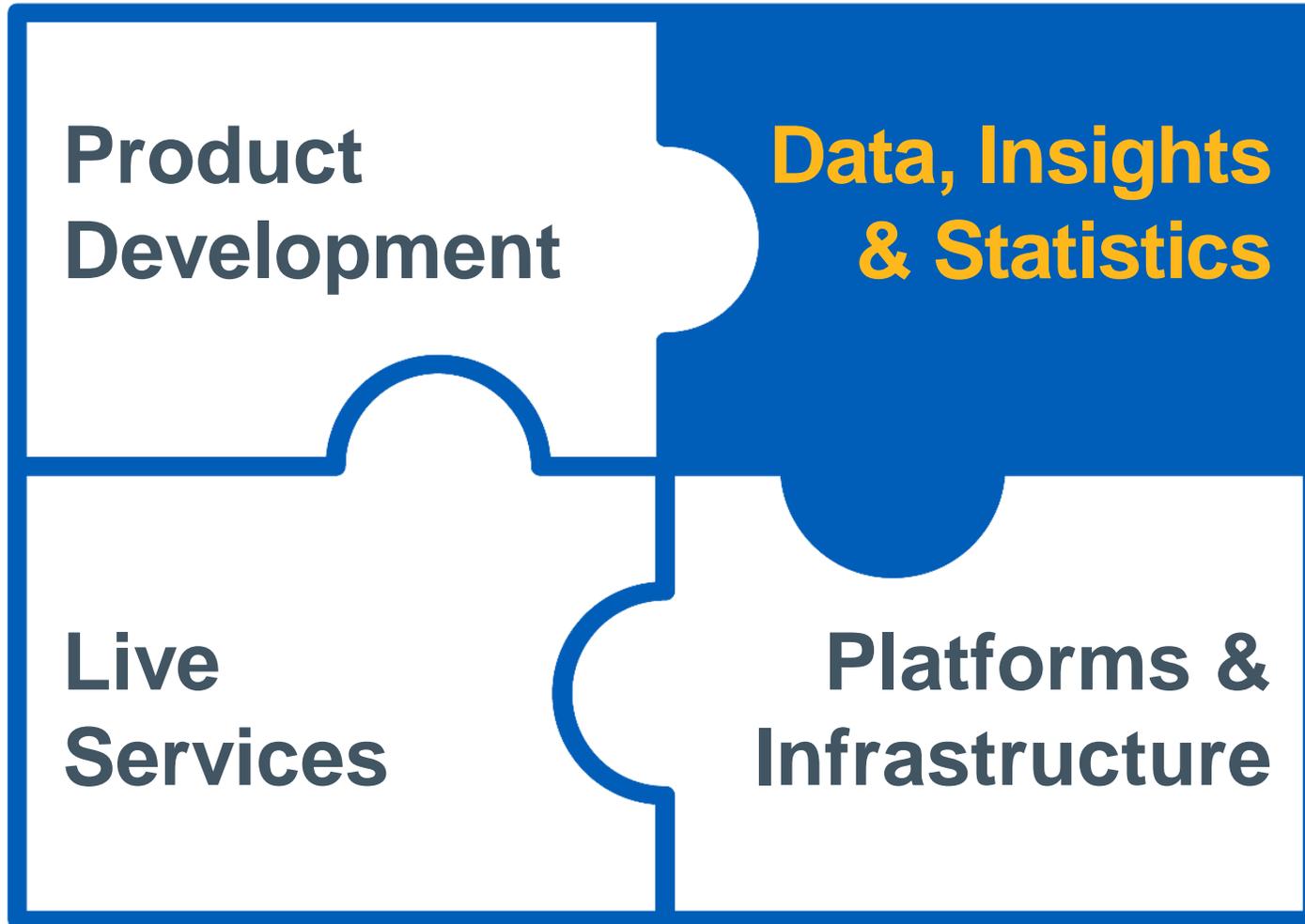
To harness the power of information and technology to make health and care better

# Our role

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



## How we work...

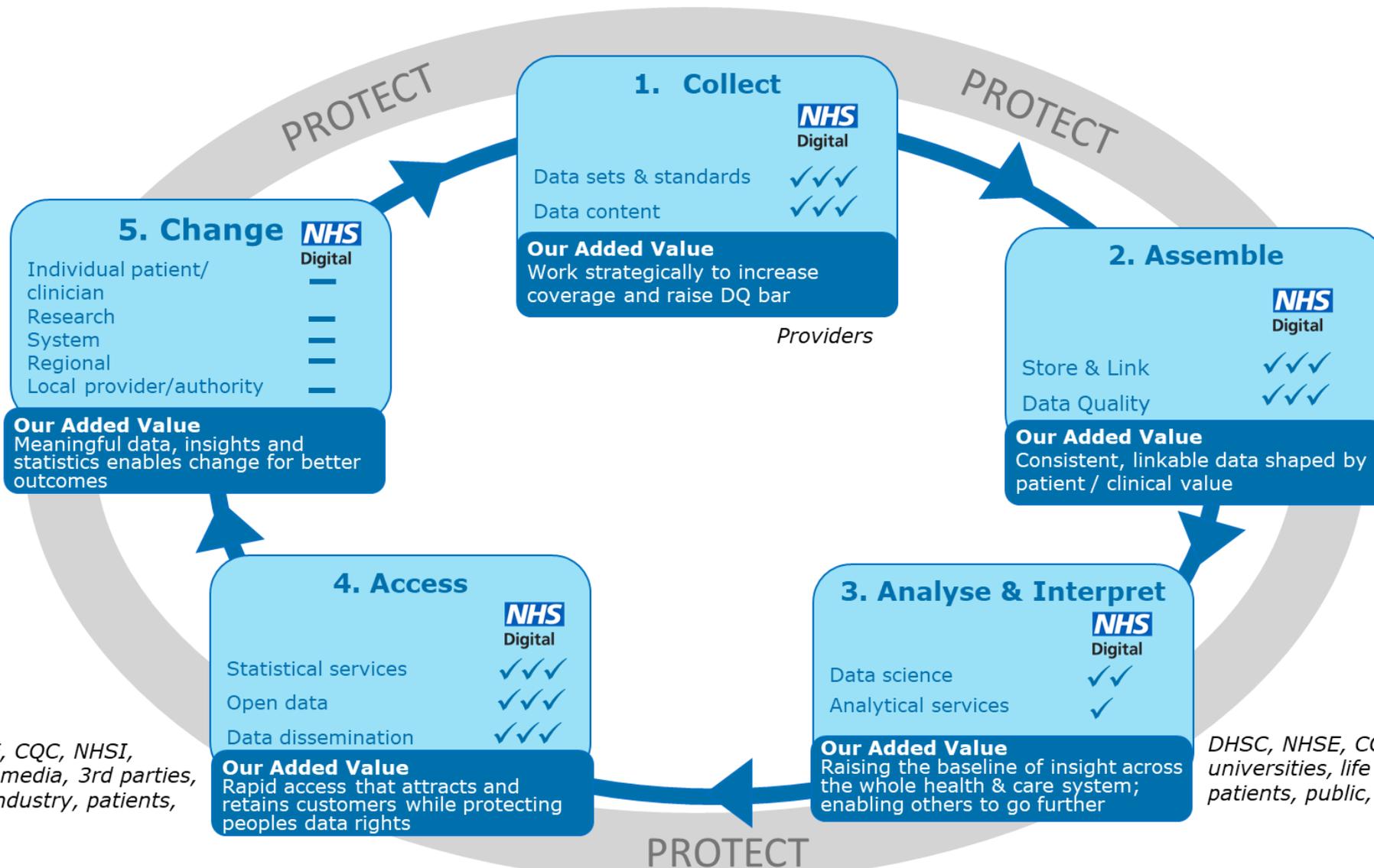


*Our vision is to improve the nation's health and well-being, while contributing to GDP, through innovative uses of data*

- Leading the market
- Driving demand
- Innovating together
- Commanding trust
- Providing recognised expertise

<https://digital.nhs.uk/dis>

# Adding value across a “learning health system”...



DHSC, NHSE, CQC, NHSI, universities, media, 3rd parties, life science industry, patients, public etc.

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# The Data Processing Service is now live



**Secure, internet-facing data collection portal:** to collect data from providers and provide data quality feedback



**Modern, cloud-based data processing platform:** to standardise the processing of data collected by NHS Digital



**Strategic master person service:** to improve the quality of person matching and facilitate improved data linkage



**Strategic de-identification/re-identification solution:** to provide consistent de-identification and controlled linkage and re-identification of data, for use in the DPS and across the NHS



**Modern, cloud-based data access environment:** to provide secure, remote access to data held by NHS Digital

# Providing our customers with...

Faster access to data that is...



Secure



Better-linked



High quality



More timely



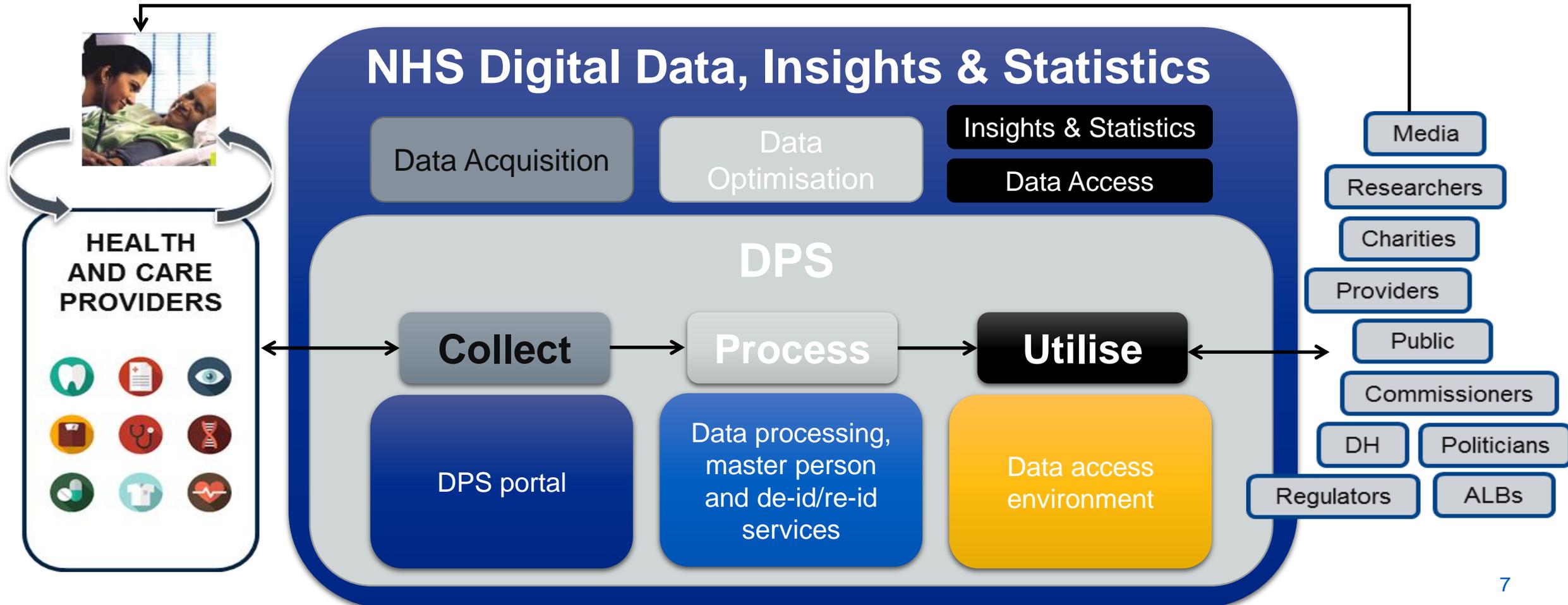
Transparent

whilst benefitting from...

- ✓ DARS integration – simplifying governance
- ✓ Interrogation and analysis tools – more functionality
- ✓ 'Bring Your Own Data' capability – greater utility

# A modern data platform...

*Delivering modern data processing services to significantly enhance our ability to increase the security, reduce the cost and increase the efficiency of our data services; and, ultimately, to deliver faster and higher quality information and insights to customers to improve health and care*



# How you access the data - Data Access Environment



Log in

Username

Password

Next

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The screenshot shows the Hue Data Access Environment interface. The browser address bar indicates the URL: `beta.data.digital.nhs.uk/guacamole/#/client/MTIAYwBteXNxbA==`. The interface includes a navigation menu, a search bar for saved documents, and a list of tables on the left. The main area displays a Hive query in the editor, which is a complex SELECT statement filtering fracture data by age band and year. Below the query, the execution progress is shown with a progress bar and a log of the command execution. At the bottom, a table displays the results of the query, showing columns for fracture type and name, and multiple columns of counts for different categories.

```

3 SELECT T2.FRACTURE_NAME,
4        T2.FRACTURE_TYPE,
5        CASE WHEN FLOOR(STARTAGE_CALC/10)=0 THEN '0_9'
6              WHEN FLOOR(STARTAGE_CALC/10)=1 THEN '10_19'
7              WHEN FLOOR(STARTAGE_CALC/10)=2 THEN '20_29'
8              WHEN FLOOR(STARTAGE_CALC/10)=3 THEN '30_39'
9              WHEN FLOOR(STARTAGE_CALC/10)=4 THEN '40_49'
10             WHEN FLOOR(STARTAGE_CALC/10)=5 THEN '50_59'
11             WHEN FLOOR(STARTAGE_CALC/10)=6 THEN '60_69'
12             WHEN FLOOR(STARTAGE_CALC/10)=7 THEN '70_79'
13             WHEN FLOOR(STARTAGE_CALC/10) BETWEEN 8 AND 15 THEN '80+'
14             ELSE 'Unknown' END AS AGE_BAND,
15        SUM(CASE WHEN FYEAR='0708' THEN FAE ELSE 0 END) AS 2007_08,
16        SUM(CASE WHEN FYEAR='0809' THEN FAE ELSE 0 END) AS 2008_09,
17        SUM(CASE WHEN FYEAR='0910' THEN FAE ELSE 0 END) AS 2009_10,
18        SUM(CASE WHEN FYEAR='1011' THEN FAE ELSE 0 END) AS 2010_11,
19        SUM(CASE WHEN FYEAR='1112' THEN FAE ELSE 0 END) AS 2011_12,
20        SUM(CASE WHEN FYEAR='1213' THEN FAE ELSE 0 END) AS 2012_13,
21        SUM(CASE WHEN FYEAR='1314' THEN FAE ELSE 0 END) AS 2013_14,
22        SUM(CASE WHEN FYEAR='1415' THEN FAE ELSE 0 END) AS 2014_15,
23        SUM(CASE WHEN FYEAR='1516' THEN FAE ELSE 0 END) AS 2015_16,
24        SUM(CASE WHEN FYEAR='1617' THEN FAE ELSE 0 END) AS 2016_17
25 from HES.HES_APC T1 inner join
26 (SELECT 'S02' as FRACTURE_TYPE, 'Skull' as FRACTURE_NAME union all
27  SELECT 'S12' as FRACTURE_TYPE, 'Neck' as FRACTURE_NAME union all
28  SELECT 'S22' as FRACTURE_TYPE, 'Rib' as FRACTURE_NAME union all
29  SELECT 'S32' as FRACTURE_TYPE, 'Spine and Pelvis' as FRACTURE_NAME union all
30  SELECT 'S42' as FRACTURE_TYPE, 'Shoulder' as FRACTURE_NAME union all
  
```

3: 36/36 Map 34: 48/48 Map 35: 42/42 Map 36: 46/46 Map 37: 49/49 Map 38: 49/49 Map 39: 53/53 Map 4: 1/1 Map 40: 56/56 Map 11: 57/57 Map 10: 58/58 Map 1: 3: 60/60 Map 44: 77/77 Map 45: 21/21 Map 5: 1/1 Map 6: 1/1 Map 7: 1/1 Map 8: 1/1 Map 9: 1/1 Reducer 14: 1009/1009 application\_1570167798012\_0072

INFO : Completed executing command(queryId=hive\_20191007122038\_bd93ae82-5447-439b-a156-8c124817a742); Time taken: 151.846 seconds

INFO : OK

Query	Fracture Type	Fracture Name	Count 1	Count 2	Count 3	Count 4	Count 5	Count 6	Count 7	Count 8	Count 9	Count 10	Count 11	Count 12
1	Skull	S02	0_9	1977	2103	2234	2314	2445	2312	2454	2433	2562	2641	
2	Skull	S02	10_19	8647	8293	8173	7832	7321	6122	6020	5461	5402	5370	
3	Skull	S02	20_29	10605	10916	11428	11235	11131	10350	9949	9376	9338	9286	
4	Skull	S02	30_39	5704	5745	5862	5856	6166	5523	5723	5553	5712	5811	
5	Skull	S02	40_49	4115	4400	4641	4696	4757	4504	4701	4574	4655	4627	

# Data Access Tools

## Currently



## Later this year



# Protecting people's data...



## Where we are now

- Historic HES Data ✓
- Mental Health ✓
- Maternity ✓
- Primary Care Medicines
- Secondary Care Medicines
- IAPT
- Community
- PROMS
- DIDS
- 111 Pathways
- SUS+ Hospital CDS & AHAS (HES)
- Emergency Care Dataset
- GP Appointments
- ONS Births & Deaths
- PLICS – Acute, Amb, IAPT, MH
- Aggregate datasets
- More...
- Other sources of data...

# 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**

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**

World leading birth cohort study, charting the health of 14,500 families in the Bristol area

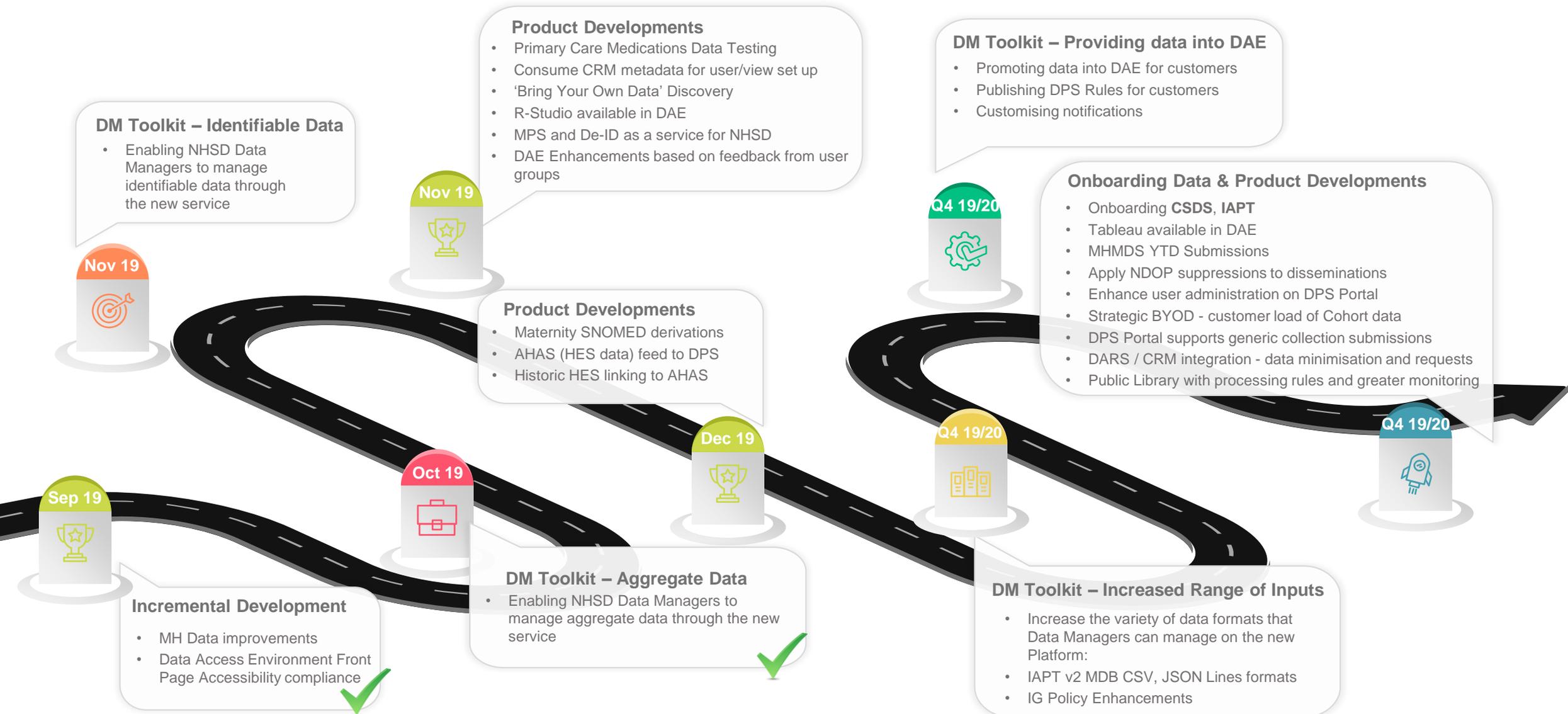
Provides a uniquely rich resource for studying environmental and genetic factors that affect a person's health and development.

Over 1,500 academic papers published

# Blue Alberta Skies



# DPS Technical Product Roadmap – October to March 2020





WHAT'S NEXT?

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