



COVID-19 Health Data Research

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Health data research community highlights this period



37 COVID-19 taskforce calls with **183** clinical and health data research leaders engaged



1,266 COVID-19 pre-print publications, and **174** papers published



771 academic, industry and NHS participants in COVID-19 Slack channel with 10 sub-channels



111 health data research questions identified



Patient and Public Voice Feedback:

As we continue to come out of lockdown and restrictions, we must not lose momentum:

- Research is urgently needed to better understand and monitor those who contract the virus following the double vaccination now that more and more people have had both doses - this will also be helpful in monitoring emergence of new variants.
- With restrictions lifting and people no longer being required to work from home, urgent research needed to understand any trends in different workplace settings who have been working through the pandemic so that any relevant monitoring programmes can effectively be put in place as people return to work.
- Recent research suggesting women, older people, ethnic minorities, and people in a disadvantaged social class are more likely to experience disruptions in access to medication, procedures, and appointments - inequalities are already widening, but after a certain point in time they will become set and it will be too late to bring them back in. There needs to be urgent research to understand how far these inequalities could go as well as monitoring the effects of any interventions.

Click [here](#) to read more feedback



Click [here](#) for a list of regularly updated COVID-19 research questions from the health data community

Research topics with new insights generated in last 4 weeks

Health data research outputs on COVID-19 continues to grow, now reaching 1,266 (+24) non-peer-reviewed pre-prints & 174 (+16) published papers.

Topic	Insights from ongoing studies (links provide further details):
Surveillance & Epidemiology	<ul style="list-style-type: none">Ethnically diverse genomic and electronic health record data from ~20,000 participants across 3 sources (Africa 6K, 1000 Genomes Project, and Penn Medicine Biobank) has revealed variations in several genes (ACE2, TMPRSS2, DPP4, and LY6E) may play a role in co-morbidities associated with COVID-19 severity. This serves a starting point to investigate the impact of these variations on susceptibility and resistance to COVID-19 across ethnic groups.The latest analyses from the community survey, REal-time Assessment of Community Transmission study-1 (REACT-1), showed an exponential increase in COVID-19 prevalence across England from May to early June as the Delta variant replaced Alpha.
Immunity & Vaccines	<ul style="list-style-type: none">Analyses of linked health data from 2.53 million Scottish adults derived from the Early Pandemic Evaluation and Enhanced Surveillance of Covid-19 (EAVE II) database revealed that a first dose of the Oxford–AstraZeneca vaccine, but not Pfizer-BioNTech, is associated with a small increased risk of an autoimmune bleeding disorder (idiopathic thrombocytopenic purpura). The small increase in risk is similar to figures for flu and MMR vaccines, and should be balanced with benefits of vaccination.A substudy of 400 individuals as part of the Phase 3 Trials for the Novavax vaccine suggests that co-vaccination with a seasonal flu vaccine is safe. Co-administration of the vaccines resulted in a small decrease in Novavax efficacy, whilst no change was observed for the flu vaccine. Studies with larger sample sizes are needed.
Longitudinal health & wellbeing	<ul style="list-style-type: none">Time-series analyses of primary care electronic health records from 2.8 million people in Greater Manchester indicate that the pandemic and associated restrictions have had a prolonged impact on people seeking help for self-harm – particularly amongst people living in deprived areas and men. This raises concerns around untreated deterioration in mental health and demand for primary care and mental health services.Analyses of electronic staff records for 959,356 NHS workers in England revealed that prolonged absence due to mental ill-health surged by >50% in the first few months of the pandemic (though this subsided by June 2020). Increased support for health professionals in the event of a 3rd wave is required.Self-reported data on healthcare disruptions during the pandemic from >65,000 participants across 12 UK longitudinal studies suggests women, older people, ethnic minorities, and people in a disadvantaged social class are more likely to experience disruptions in access to medication, procedures, and appointments. This adds to a growing body of evidence that the pandemic is exacerbating existing health inequalities that should not be left unaddressed.Brain images from >700 participants of the UK Biobank project, including pre and post-infection images for 394 COVID-19 patients, revealed significant impact of COVID-19 on smell, taste, and memory-related brain regions. Further work to understand how changes in the brain are linked to infection, permanency, etc.A collaboration of 8 UK longitudinal studies using data from >55,000 participants found that people on furlough had similar health behaviours (i.e. diet, physical activity, and sleep) as those who remained employed during the early stages of the pandemic. This suggests furlough may be protective against unhealthy behaviours - a consideration for policymakers provisioning the current furlough scheme and post-pandemic support.A study combining survey data from 10 UK longitudinal studies with electronic health records has identified sociodemographic and pre-existing health factors that increase the risk of long COVID. Further work is required to inform long COVID treatment and prevention.
Transmission & Environment	<ul style="list-style-type: none">Analyses of routine electronic health record data from NHS England for 2.6 million surgical patients indicate that patients with Covid-19 have a much higher risk of severe postoperative respiratory complications and death – reinforcing the importance of infection control and prevention during the pandemic.
Clinical Trials	<ul style="list-style-type: none">Preliminary results from the Randomised Evaluation of COVid-19 thERapY (RECOVERY) trial involving 9,785 patients indicate that Regeneron’s monoclonal antibody combination reduces deaths for hospitalised COVID-19 patients who have not mounted their own immune response.

Data & Connectivity National Core Study: COVID-19 dataset availability – 6 July

Viral genome data is now available in the Office for National Statistics SRS, and will be available to request via the Innovation Gateway shortly.



KEY

1. Custodian engagement

2. Dataset available in secure Trusted Research Environment

3. Linkages established to other priority datasets (within TRE)

4. Datasets available for COVID-19 research via Gateway

Further information about **Data & Connectivity** can be found [here](#), along with our [latest monthly sprint report](#)

Data and Connectivity National Core Study [webpages](#) and [dashboard](#) now live

Core COVID-19 Datasets available for linkage	Office for National Statistics Secure Research Service	England (NHS Digital Data Processing Service)	Scotland (National Data Safe Haven)	Wales (SAIL Databank)	Northern Ireland (Honest Broker Service)
C-19 vaccine data collection	To be made available shortly. Accepting applications now	Vaccines Events & Adverse Reactions	Scottish Vaccination Data	COVID Vaccination Dataset	Data access agreed. Data to be transferred to TRE shortly from Vaccine Management System
COG-UK viral genome	Viral variant data in SRS. Available via Gateway shortly.	N/A	Viral variant data available in TRE Subset also linked to CO-CIN data	Viral variant and full sequence data available in TRE	Governance agreed, automation of data flow to PHA in progress
Pillar 1 COVID-19 Testing Data	To be linked to Test and Trace data	COVID-19 Second Generation Surveillance System (SGSS)	Electronic Communication of Surveillance in Scotland (ECOSS)	COVID-19 Test Results	COVID antigen testing - Pillar 1
Pillar 2 Testing data (UK Gov)	To be linked to Test and Trace data	COVID-19 UK Non-hospital Antigen Testing Results (Pillar 2)	Electronic Communication of Surveillance in Scotland (ECOSS)	COVID-19 Test Results	Missing results prior to 26 Apr – Data quality issue
Primary Care	Census-Mortality-HES-GPES linked data asset now available (ONS/NHSD)	GPES extract – 98% practice coverage, large subset of codes (4bn items) Community Prescribing	Albasoft ESCRO GP Extraction* Prescribing Information System	80%+ coverage of full longitudinal record, with 100% coverage for COVID codes	Enhanced Prescribing Database as proxy
Secondary Care	Census-Mortality-HES-GPES linked data asset now available (ONS/NHSD)	100% coverage – HES. SUS via DARS extract only, available in TRE soon	100% coverage	100% coverage	Admissions & Discharges
Personal Demographic Service	Internal use only	100% coverage (via DARS extract only)	100% coverage	100% coverage	
Death registry	Provisional Monthly Extract & Linked Census and death occurrence	100% coverage Civil Registrations - Deaths	100% coverage	100% coverage	
C-19 Infection Survey (CIS)	Linked to Test and Trace data	N/A	Awaiting DEA accreditation	Awaiting decision on data access	Awaiting decision on data access
COVID-19 Clinical Information Network (CO-CIN)	Being linked to 2011 census	Data for English CO-CIN participants available in Scottish Nation Data Safe Haven	Limited metadata. Includes English linked data, and COGUK/CO-CIN data asset	Awaiting decision on data access	Discussions ongoing to collect data in NI
Census 2011	Household structure	N/A			N/A
Covid Opinions Survey		N/A	N/A	Awaiting decision on data access	N/A
Business Impact of Covid Survey	c. 5,000 businesses	N/A	N/A	Awaiting decision on data access	N/A
Labour Force Survey	40,000 households, 100,000 individuals	N/A	N/A	Awaiting decision on data access	N/A
Intensive Care data	Preparing data sharing agreement for ICNARC	HES Critical Care (ICNARC available in June)	SICSAG (updated weekly)	ICNARC COVID weekly, ICNARC quarterly all admissions and critical care routine data (CCDS) monthly	ICNARC to be acquired
Pillar 3 Testing data (NHS labs)	Captured within Test and Trace data	N/A		COVID-19 Test Results	
Pillar 3 Testing data (iELISA)	N/A	COVID-19 UK Non-hospital Antibody Testing Results (Pillar 3)			Data to be validated
Other Pillar 4 Testing data	VIVALDI, REACT II				
ZOE Symptom Study - App Data	Finalising data sharing agreement	N/A		UK wide (unlinked)	

Status of COVID-19 projects using the data – 6 July

33 additional research projects now taking place, with most projects using the Scottish National Data Safe Haven from the ISARIC 4C and PHOSP consortium.

# of COVID-19 Projects by stage (change from previous report)	Office for National Statistics Secure Research Service	England (NHS Digital Data Processing Service)	Scotland (National Data Safe Haven)	Wales (SAIL Databank)	Northern Ireland (Honest Broker Service)	Total
In development	6 (-2)	17 (-7)	20 (-3)	48 (-)	4 (-1)	95 (-13)
Submitted for Information Governance approval	0 (-)	18 (+6)	3 (-1)	2 (-)	1 (+1)	24 (+6)
Approved but not yet active	2 (-4)	0 (-1)	21 (-)	2 (-)	1 (-1)	26 (-6)
Active research projects taking place	34 (+8)	111 (+11)	96 (+18)	123 (-5)	3 (+1)	367 (+33)
Completed projects	3	0	3	30	0	36
Active Number of Researchers	378 (+11)	16 (-32)	173 (+19)	241 (+8)	24 (+14)	832 (+20)
Average time from application to active research	125 days	168 days	10 days	6 days	89 days	
Disclosure requests in last 4 weeks*	Not available	257	57	Not available	40	
Items in disclosure requests*	Not available	701	472	Not available	2845	

* These are requests by researchers to export safe and anonymous data from the Trusted Research Environments. These requests include 'items' such as graphs or data tables

New research that started this month (source: Data and Connectivity Delivery Partners reports)

- ONS** The University of Essex are exploring COVID-19 and social inequalities.
- NHSD** The University of Oxford are investigating COVID-19 vaccines.
- NDSH** The University of Leicester are exploring post-hospitalization for COVID-19 patients.
- SAIL** Work continues by the Department of Health and Social care to explore data from the Zoe Symptom App.
- NI HBS** Queen's University in Belfast are exploring COVID-19 vaccinations.

Participation in key UK wide studies:

- PRINCIPLE:** 5,199 participants (+4% in last 2 weeks)
- RECOVERY:** 40,399 participants across 181 active sites (+1% in last 2 weeks)
- CO-CIN (ISARIC 4C)**
 - 213,003 Tier 0 (case report) (+2% in last 2 weeks)
 - 2377 Tier 1/2
- GENOMICC:** 13,590 participants (+4% in last 2 weeks) across 212 ICUs with a total of 5091 intensive care beds
- COVID-19 ZOE symptom study:** 4,675,008
- COG-UK:** 610,918 viral genomes sequenced (+19% in last 2 weeks)

Data Use Registers

For more information on the active projects:

- ONS Secure Research Service:** List of accredited researchers and research projects under the Research Strand of the Digital Economy Act)
- NHS Digital:** Register of approved data releases (includes all access)
- Scotland:** Public Benefit and Privacy Panel approvals
- SAIL Databank:** COVID-19 projects listed on gateway
- NI Honest Broker Service:** Projects currently being carried out.