



COVID-19 Health Data Research

11 May 2021 - Fortnightly update for SAGE, National Core Studies & UKRI/DHSC

Authors:

Alice Turnbull, Health Data Research UK
 Andrew Morris, Health Data Research UK
 David Seymour, UK Health Data Research Alliance
 Caroline Cake, Health Data Research UK (lead)
 Sinduja Manohar, Health Data Research UK
 Susheel Varma, Health Data Research UK
 Cathie Sudlow, BHF Data Science Centre
 Sophie Morris, Health Data Research UK
 Ashleigh Smith, Health Data Research UK
 Hollydawn Murray, Health Data Research UK
 James Pickett, Health Data Research UK
 Lara Edwards, Health Data Research UK
 Melissa Lewis-Brown, Health Data Research UK

John Deanfield, NICOR
 Mark Parsons, Scotland National Safe Haven
 Charlie Davie, DATA-CAN
 Members of the HDR UK Public Advisory Board & COVID-19 PPIE Group
 Ming Tang, NHS England and Improvement
 Nilesh Samani, British Heart Foundation
 National Core Study Programme Leads
 Pete Stokes, Office for National Statistics
 Ronan Lyons, SAIL Databank (UKRI/DHSC sponsor)
 Carole Morris, Public Health Scotland
 Garry Coleman, NHS Digital
 Ian Young, Health & Social Care Northern Ireland

Health data research community highlights this period



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



1,222 COVID-19 pre-print publications, and **147** 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 - Lot of positive progress has been made but as we continue to move out of a national lockdown, we must sustain momentum:

- Those who are immunosuppressed have no certainty about vaccine effectiveness as there is no/limited evidence. Understanding and publicising the resulting data must be a priority to ensure immunosuppressed people do not put themselves at risk unnecessarily.
- Whilst more and more of the population become vaccinated and evidence has shown effectiveness against the UK variant, it is imperative to better understand and communicate the effects of the vaccine on the different and emerging variants as well as the effect of the variants on transmission.
- Urgent research is needed in the broader long-term follow up of COVID-19 patients, looking at all age groups and all of those ranging from clinically vulnerable to “healthy” adults.
- Urgently, with restrictions becoming much lighter on 17 May 2021 onwards, research needs to explore the effects on cases, hospitalisations and deaths and should include the impact of removing the requirement for pupils to wear masks in schools.

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 2 weeks

Health data research outputs on COVID-19 continues to grow, now reaching 1,222 (+8) non-peer-reviewed pre-prints & 147 (+9) published papers.

Topic	Insights from ongoing studies (links provide further details):
Surveillance & Epidemiology	<ul style="list-style-type: none">A multi-ethnic population study using linked primary and secondary care electronic health records of >15,000 patients with hepato–pancreato–biliary conditions such as liver cancer, pancreatic cancer, and gallstones found that the risk of COVID-19 was heightened for patients with a history of substance misuse.
Immunity & Vaccines	<ul style="list-style-type: none">Real-world data from the vaccine rollout in Scotland suggest that the 1st dose of the Pfizer-BioNTech and the Oxford-AstraZeneca vaccines are 91% and 88% effective at reducing COVID-19 hospitalisation, respectively. The study used the Early Pandemic Evaluation and Enhanced Surveillance of COVID-19—EAVE II—database comprising linked vaccination, primary care, real-time reverse transcription-PCR testing, and hospital admission patient records for the entire Scottish population.Preliminary analyses combining vaccination and COVID-19 testing data for University Hospitals Birmingham healthcare workers revealed that a high proportion of workers vaccinated with a 1st dose acquired COVID-19 – calling for healthcare workers to remain vigilant after a 1st vaccine dose.A real-world study using PCR-test results from a representative cohort of >300,000 participants as part of the Office for National Statistics (ONS) COVID-19 Infection Survey (CIS) has found that a single dose of Oxford-AstraZeneca or Pfizer-BioNTech vaccines, or two doses of Pfizer-BioNTech, reduced new infections. Both vaccines appear to be effective against the UK variant.As part of the same survey, a separate study of post-vaccine antibody levels in 45,965 UK adults found that vaccine response differs with demographics (including age, gender and previous infection status) and – if vaccine supplies become limited – prioritising vaccines for people not previously infected, and 2nd doses to those over the age of 60 may be warranted.
Longitudinal health & wellbeing	<ul style="list-style-type: none">Analyses of COVID-19 Symptom Study survey responses from >2.7 million people in the US, UK,, and Sweden found no association between use of non-steroidal anti-inflammatory drugs (including Aspirin) and COVID-19 infection – suggesting patients and healthcare providers should continue to use these drugs to prevent cardiovascular disease, treat chronic secondary pain, etc.Analyses by the OpenSAFELY Collaborative of linked patient-level data revealed that people using routinely prescribed oral anti-coagulants (n=70,464) had a lower risk of severe COVID-19 outcomes and showed no evidence that warafin users (n=372,746) have an increased risk of COVID-19 outcomes (versus other anti-coagulants). These results provide reassurance that these treatments can continue to be used safely during the pandemic.
Transmission & Environment	<ul style="list-style-type: none">Responses from >20,000 participants of the VirusWatch household study indicate that people living in deprived areas are more likely to use public transport, work/attend school outside the home, and visit essential shops –suggesting interventions to prevent exposure during these activities may reduce risk inequalities.A matched cohort study of >200,000 care home residents using primary care electronic health from the Clinical Practice Research Datalink Aurum Database in England confirmed the disproportionate impact of the 1st wave on the care home population and highlights the need to protect these individuals in future outbreaks.A study exploring feasibility of point-of-care COVID-19 testing from ~200 care home staff and residents across 4 sites suggests that both standard operating procedures and training materials require adjustments specific to the care home environment to minimise sources of contamination.
Clinical Trials	<ul style="list-style-type: none">Recent results from ATOMIC2 an open-label, randomised superiority clinical trial at 19 centres in the UK found that azithromycin (an anti-inflammatory antibiotic) does not reduce hospitalisation in patients (n=298) with mild-moderate COVID-19.

Data & Connectivity National Core Study: COVID-19 dataset availability – 11 May

No change in dataset availability in last 2 weeks. Progress is ongoing to link viral genome data in England, Wales and Northern Ireland.

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	Awaiting data flow from Public Health England	Awaiting data flow from Public Health England (to follow flow into ONS)	COG-UK data available in TRE Subset also linked to CO-CIN data	Awaiting data from Public Health Wales	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	GPES linked to census, mortality and hospital data for internal access only	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 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) Wales (linked)	

Status of COVID-19 projects using the data – 11 May

41 new projects in development, most of which are using the SAIL databank in Wales. 3 new research projects taking place, bringing the total to 337. 11 of 12 rapid funded projects now have at least one data request approved.

# 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	5 (+5)	40 (-)	32 (-)	46 (+34)	5 (+2)	128 (+41)
Submitted for Information Governance approval	2 (+1)	10 (-)	8 (-1)	1 (+1)	0 (-4)	21 (-3)
Approved but not yet active	4 (+1)	4 (-)	12 (-2)	1 (-2)	3 (-)	24 (-3)
Active research projects taking place	28 (+2)	100 (-)	78 (-)	130 (+1)	1 (-)	337 (+3)
Completed projects	1	0	0	11	0	12
Active Number of Researchers	352 (+4)	45 (-11)	239 (+4)	255 (-1)	2	893 (-2)
Average time from application to active research	109 days	TBC	10 days	TBC	200 days	

Participation in key UK wide studies:

- [PRINCIPLE](#): 4,860 participants (+0.8% in last 2 weeks, with continuing data flow of Pillar 2 COVID +ve test results to support recruitment)
- [RECOVERY](#): 39,775 participants across 181 active sites (+0.2% in last 2 weeks)
- [CO-CIN \(ISARIC 4C\)](#)
 - 207,094 Tier 0 (case report) (+0.8% in last 2 weeks)
 - 2309 Tier 1/2
- [GENOMICC](#): 12,597 participants (+0.2% in last 2 weeks) across 212 ICUs with a total of 5091 intensive care beds
- [COVID-19 ZOE symptom study](#): 4,653,168
- [COG-UK](#): 466,708 viral genomes sequenced (+8% in last 2 weeks)

Data & Connectivity National Core Study projects now underway.

Examples include:

- [Real-time Assessment of Community Transmission \(REACT\) Study 2 - COVID antibody \(Data & Connectivity NCS\)](#) Led by Professor Elliot, Imperial College London
- [Is exposure to airborne fine and ultrafine particulate matter a determining factor in COVID-19 infection and outcome within the UK?](#) led by Professor Wyche, University of Brighton
- [How is COVID-19 impacting women and men's working lives in the UK?](#) led by Professor Tracey Warren, University of Nottingham

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.