



# COVID-19 Health Data Research

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## Health data research community highlights this period



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



**1,173** COVID-19 pre-print publications



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



**111** health data research questions identified



### This Week's Patient and Public Voice Feedback:

As we move towards an easing of restrictions, key areas of research that need to be prioritised to increase understanding and inform decisions include:

- Ways to overcome vaccine hesitancy, low vaccine coverage, and impact of the vaccine programme on transmission.
- How presentation of COVID-19 symptoms may vary between different groups and populations. This will ensure the list of symptoms that trigger a COVID test are as accurate as possible and therefore help monitor and reduce transmission rates.

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 1173 (+5) non-peer-reviewed pre-prints & 103 (+5) published papers.

Topic	Insights from ongoing studies (links provide further details):
<b>Surveillance &amp; Epidemiology</b>	<ul style="list-style-type: none"><li>Comparing electronic health records of COVID-19 patients admitted to University Hospital Birmingham in wave 1 vs wave 2 revealed <a href="#">a reduction in COVID-19 severity and mortality in wave 2; however wave 2 patients were younger, even less likely to be of white ethnicity, and even more likely to live in socially deprived areas</a>.</li><li><a href="#">Analyses of data from the Office for National Statistics Public Health Data Asset including nearly 29 million people in England have disaggregated ethnic differences in COVID-19 mortality across waves 1 and 2</a>. Whilst all ethnic minority groups were at a greater risk of COVID-19 related death in wave 1, there was a reduction in COVID-19 mortality for most ethnic groups in wave 2 – except people from South Asian backgrounds, in particularly people from Bangladeshi and Pakistani backgrounds, who continued to have higher mortality rates.</li><li>Recent modelling of various triage strategies, using UK intensive care unit (ICU) admissions data from nearly 10,000 patients, indicates that <a href="#">employing a ‘reverse-triage’ approach in ICUs during the COVID-19 pandemic could reduce life-years lost by 12%</a> (i.e. promptly discharging patients that do not meet triage criteria if admission cannot otherwise be guaranteed for a patient who does meet said criteria).</li></ul>
<b>Immunity &amp; Vaccines</b>	<ul style="list-style-type: none"><li>Analyses of linked health data from 5.4 million people derived from the Early Pandemic Evaluation and Enhanced Surveillance of COVID-19 (EAVE II) database revealed <a href="#">that a single dose of the Pfizer/BioNTech or Oxford/AstraZeneca vaccine was 85% and 94% effective, respectively, against COVID-19 related hospitalisation</a>. This is supported by Public Health England monitoring data suggesting that <a href="#">COVID-19 cases in older vaccinated people are ~½ as likely to lead to hospitalisation and/or death</a>.</li><li>Exploratory analyses of <a href="#">Oxford/AstraZeneca vaccine trial data from &gt;17,000 participants support the 4-12 week interval between doses recommended by many global regulators</a>, including the UK’s Joint Committee on Vaccination and Immunisation recommendation of a 12-week interval.</li><li>Emerging data from the Israeli Health Ministry are reported to show that <a href="#">the Pfizer/BioNTech vaccine is 89% effective at preventing symptomatic and asymptomatic COVID-19 infections</a>. Similarly, retrospective analyses of data from &gt;9,000 healthcare workers have shown <a href="#">that the Pfizer/BioNTech vaccine is 75% effective at preventing COVID-19 (including asymptomatic cases)</a>. These studies are the first to suggest that vaccination may curb the spread of COVID-19.</li></ul>
<b>Longitudinal health &amp; wellbeing</b>	<ul style="list-style-type: none"><li><a href="#">Prescription of metformin does not influence COVID-19 risk or mortality, according to analyses of primary care records from across the UK</a> – indicating that the drug, commonly used to control blood sugar levels in people with type 2 diabetes, can continue to be used during the pandemic.</li><li>A study leveraging national patient-level data from the Welsh Dispensing Data Set found <a href="#">changes in patterns of drugs dispensed by community pharmacies during the pandemic, such as a dramatic reduction in non-COVID-related vaccines</a> (possibly due to a decrease in travel-related vaccinations). The study includes an <a href="#">interactive tool that is likely to prove useful in monitoring and visualising real-time dispensing trends as the pandemic evolves</a>.</li></ul>
<b>Transmission &amp; Environment</b>	<ul style="list-style-type: none"><li>Research linking health and administrative data for &gt;500,000 staff and students in Wales has shown that <a href="#">primary and secondary school openings in September-December 2020, with strict mitigation measures in place, posed no increased risk of SARS-CoV-2 infection in staff</a>. Separate analyses of data from England’s Department for Education further suggest that <a href="#">teachers are not at an increased risk in primary and secondary schools where more students are infected</a>; whilst data from the Office of National Statistics indicate <a href="#">teachers have a higher probability of testing positive for COVID-19 compared with some other occupations</a>. Taken together, these studies provide valuable evidence for decision-makers responsible for school openings.</li></ul>
<b>Clinical Trials</b>	<ul style="list-style-type: none"><li>Preliminary results from the Randomised Evaluation of COvId-19 thERapY (RECOVERY) trial indicate that <a href="#">tocilizumab, an anti-inflammatory used to treat arthritis, reduces deaths in patients hospitalised with COVID-19</a>. The data suggest the drug’s impact is even more substantial when used in combination with dexamethasone.</li></ul>



# Data & Connectivity National Core Study: COVID-19 dataset availability – 23 February

Vaccine data for Wales now available to access from SAIL databank. English vaccine data available to researchers shortly from ONS and NHSD

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 datasets in TRE, available soon	Data to be transferred soon	COVID Vaccination Dataset	Data to be transferred shortly
COG-UK viral genome	Awaiting data flow from Public Health England		Subset linked to CO-CIN data Awaiting remaining data flow from Public Health Scotland	Awaiting data flow from Public Health Wales	Governance agreed, to be linked shortly
Pillar 1 COVID-19 Testing 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)		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	HES – available for internal access only. 100% coverage	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)		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	HES Critical Care, ICNARC	HES Critical Care (via DARS extract only – soon in TRE) Reviewing IG to share ICNARC.	SICSAG (updated weekly)	ICNARC COVID weekly, ICNARC quarterly all admissions and critical care routine data (CCDS) monthly	Critical Care Minimum dataset to be acquired
Pillar 3 Testing data (NHS labs)	Available in COVID Infection Survey	N/A		COVID-19 Test Results	
Pillar 3 Testing data (iELISA)	N/A	COVID-19 UK Non-hospital Antibody Testing Results (Pillar 3) - via DARS only, available in TRE soon			Data to be validated
Other Pillar 4 Testing data	VIVALDI, REACT II				
ZOE Symptom Study App Data				UK wide (unlinked) Wales (linked)	

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](#). Including the recently published **[Sprint 4 report](#)**.

New [Trusted Research Environment collection](#) added to Gateway collections.

## Status of COVID-19 projects using the data – 23 February 2021

6 projects completed since last report and net increase of 7 projects in development. Total number of active research projects remains over 290. 15 data access requests covering 63 data assets now submitted via the Gateway for the 12 rapid funded projects.

# 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	11 (-)	40 (+8)	36 (-4)	95 (+5)	4 (-2)	186 (+7)
- a/w researcher	11 (-)	28 (+3)	22	57 (+2)	2 (-4)	120
- a/w data custodian	0 (-)	12 (+5)	14	38 (+3)	2 (+2)	66
Submitted for Information Governance approval	1(-3)	3 (-4)	7 (+3)	1 (+1)	0 (-)	12 (-4)
Approved but not yet active	3 (+1)	4 (+1)	7 (-2)	3 (-)	1 (-)	18 (-)
<b>Active research taking place</b>	<b>13 (-2)</b>	<b>91 (+4)</b>	<b>65 (-4)</b>	<b>121 (-)</b>	<b>1 (-)</b>	<b>291 (-2)</b>
Active Number of Researchers	179	43	190	206 (+1)	Not yet available	
Average time from application to active research	Not yet available	Not yet available	13.5 days	3 days	Not yet available	

### Participation in key UK wide studies:

- [PRINCIPLE](#): 4,296 participants (+6% in last 2 weeks, with continuing data flow of Pillar 2 COVID +ve test results to support recruitment)
- [RECOVERY](#): 37,697 participants across 178 active sites (+6% in last 2 weeks, and +1 active site)
- [CO-CIN \(ISARIC 4C\)](#)
  - 185,239 Tier 0 (case report) (+5% in last 2 weeks)
  - 646 Tier 1 (single sample)
  - 1,612 Tier 2 (serial sampling)
- [GENOMICCC](#): 11,167 participants (+8% in last 2 weeks) across 212 ICUs with a total of 5091 intensive care beds
- [COVID-19 ZOE symptom study](#): 4,609,103
- [COG-UK](#): 250,673 viral genomes sequenced

### Data & Connectivity National Core Study projects now underway

15 data access requests covering 63 data assets from 12 studies now submitted via [HDRUK's Innovation Gateway](#). 2 requests approved so far.

Examples include:

- [How is COVID-19 impacting women and men's working lives in the UK?](#) led by Professor Tracey Warren, University of Nottingham
- [Economic scarring from the COVID-19 induced crisis: monitoring inequality in economic and education outcomes](#) - led by Professor Machin at London School of Economics
- [CovPall-Connect. Evaluation of the COVID-19 pandemic response in palliative and end of life care: Connecting to boost impact and data assets.](#) led by Professor Higginson, King's College London

### Data Access 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.