



# COVID-19 Health Data Research

12 January 2021 -Fortnightlyupdate for SAGE, National Core Studies & UKRI/DHSC

**Authors:**

Alice Turnbull, Health Data Research UK  
 Andrew Morris, Health Data Research UK  
 Ben Gordon, Health Data Research UK  
 Carole Morris, Public Health Scotland  
 Caroline Cake, Health Data Research UK (lead)  
 Cathie Sudlow, BHF Data Science Centre  
 Charlie Davie, DATA-CAN  
 Sophie Morris, Health Data Research UK  
 Hollydawn Murray, Health Data Research UK  
 David Seymour, UK Health Data Research Alliance  
 Garry Coleman, NHS Digital  
 Ian Young, Health & Social Care Northern Ireland  
 John Aston, Home Office (SAGE sponsor)

JohnDeanfield, NICOR  
 Mark Parsons, Scotland National Safe Haven  
 Melissa Lewis-Brown, Health Data Research UK  
 Members of the HDR UK Public Advisory Board & COVID-19 PPIE Group  
 Ming Tang, NHS England and Improvement  
 National Core Study Programme Leads  
 Nilesh Samani, British Heart Foundation  
 Pete Stokes, Office for National Statistics  
 Ronan Lyons, SAIL Databank (UKRI/DHSC sponsor)

# Health data research community highlights this period\*



**27** COVID-19 taskforce calls with **182** academic and health data research leaders engaged



**1,153** COVID-19 pre-print publications



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



**141** health data research questions identified



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

“There is great public interest in the organisation, coverage and efficacy of the vaccine programme. The vaccination programme as a whole needs to be a top priority for both HDR UK and SAGE with clear and meaningful patient and public involvement given the high level of public interest and huge potential to affect public trust.”

Click [here](#) and [here](#) to read more feedback



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

\*Following on from the establishment of the National Core Studies Programme we will be tracking the SAGE-endorsed recommendations from November 10, 2020 through this report going forward.

# Research topics with new insights generated in last 4 weeks

Health data research on COVID-19 continues to grow, now reaching 1153 (+31) non peer-reviewed pre-prints & 87 (+12) published papers.

## Topic Insights from ongoing studies (links provide further details):

<b>Surveillance &amp; Epidemiology</b>	<ul style="list-style-type: none"> <li>Analyses of genome sequencing data from the COVID-19 Genomics UK (COG-UK) of over 1000 SARS-CoV-2 samples from the UK found that <a href="#">the majority of mutations are due to host attempts to edit RNA, rather than viral errors in replication</a>. Of note, 4% of cases showed co-infection with more than one variant at a time with more infections yielding more mutations.</li> <li>New research investigating the role of a human enzyme, furin, in protection against SARS-CoV-2, identified <a href="#">a key antiviral protein (IFITM2), which prevents SARS-CoV-2 entry - the mode of action is related to the furin-cleavage site in the virus's spike protein</a>. The data suggest that therapeutics acting on furin-mediated cleavage of SARS-CoV-2 S may reduce viral replication.</li> <li>An international data sharing collaborative, The Consortium for Clinical Characterization of COVID-19 by EHR (4CE), involving over 36,000 patients from 342 hospitals in the US and Europe, revealed that <a href="#">laboratory test values at admission can be used to predict severity in patients with COVID-19</a>. This addresses the largely unmet need to predict severity across hospitals/regions, and given the multinational cohort, it is likely that these results will generalise well.</li> <li>Use of the OpenSAFELY platform to analyse routinely collected electronic primary care data linked to national death registrations has revealed that <a href="#">people with HIV in the UK are at increased risk of COVID-19 mortality</a>. As the pandemic response evolves, targeted policies could be considered to address this increased risk.</li> </ul>
<b>Immunity &amp; Vaccines</b>	<ul style="list-style-type: none"> <li>Results from the ONS Opinions and Lifestyle Survey over Christmas and New Year show <a href="#">a marginal increase in public willingness to be vaccinated, whilst support for mass testing remained the same</a>. Specifically, 85% of adults would be either <i>very likely</i> or <i>fairly likely</i> to have the COVID-19 vaccine if offered and 81% of adults <i>strongly supported</i> or <i>tended to support</i> mass testing for COVID-19.</li> <li>The ZOE COVID Symptom study has now pivoted to track vaccine side effects, with <a href="#">the most recent app update including improved COVID-19 vaccine questions</a>. This data will provide important insight into the vaccines people are having and how they are responding.</li> </ul>
<b>Longitudinal health &amp; wellbeing</b>	<ul style="list-style-type: none"> <li>Longitudinal analyses of the CovidLife surveys, including over 11,000 participants, revealed that <a href="#">wearing a face mask is associated with better rather than poorer mental health and wellbeing</a> (even after controlling for behavioural, social, and psychological confounders). These findings may spur policymakers to introduce further, or more stringent, guidelines on face coverings.</li> </ul>
<b>Transmission &amp; Environment</b>	<ul style="list-style-type: none"> <li>Two independent analyses of the new SARS-CoV-2 variant (VOC 202012/01) have found it to be <a href="#">more transmissible than other variants by over 50%</a> (and <a href="#">here</a>) presenting a major challenge for on-going control of COVID-19. Further research to understand the nuances of the transmissibility changes as well as any changes in severity is crucial.</li> <li>A systematic review combining global data found that <a href="#">migrants in high income countries are at high risk of COVID-19 infection and over-represented in confirmed COVID-19 cases including deaths</a>. This work highlights the urgent need for engagement with migrants, particularly surrounding barriers and facilitators to vaccination.</li> </ul>
<b>Clinical Trials</b>	<ul style="list-style-type: none"> <li>The latest trial data from A Randomised, Embedded, Multifactorial, Adaptive Platform Trial for Community-Acquired Pneumonia (REMAP-CAP) showed that <a href="#">two medicines (immune modulators, tocilizumab and sarilumab), improved survival in critically ill patients with Covid-19</a>. Updated guidance from the government and NHS has been issued to Trusts across the UK, effective immediately, encouraging the use of tocilizumab in the treatment of COVID-19 patients who are admitted to intensive care units.</li> </ul>

# Data & Connectivity National Core Study: COVID-19 dataset availability –12 January 2021

Pillar 1 and 2 data is now linked in the ONS Secure Research Service, and death registry data now is available in Northern Ireland's Honest Broker Service.



## 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 **Sprint 2 report**.

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)
Pillar 1 COVID-19 Testing	Initial linkage completed				
Data Pillar 2 Testing data (UK Gov)	Initial linkage completed				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	AlbasoftESCRO 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	100% coverage	100% coverage	
Personal Demographic Service	100% coverage	100% coverage	100% coverage	100% coverage	
Death registry	Provisional Monthly Extract & Linked Census and death occurrence	100% coverage	100% coverage	100% coverage	
C-19 Infection Survey (Pillar 4)		N/A			
COVID-19 Clinical Information Network (CO-CIN)	Being linked to 2011 census	Data for linkage in Scottish Data Safe Haven agreed		Awaiting decision on data access	
Census 2011	Household structure				N/A
Covid Opinions Survey		N/A	N/A		N/A
Business Impact of Covid Survey	c. 5,000 businesses	N/A	N/A		N/A
LabourForce Survey	40,000 households, 100,000 individuals	N/A	N/A	N/A	N/A
Intensive Care data	HES critical care	ICNARC –internal use only	SICSAG (updated weekly)	ICNARC: COVID-specific weekly extract	
Pillar 3 Testing data (NHS labs)		Internal use only			
Pillar 3 Testing data (iELISA)		Internal use only			
Other Pillar 4 Testing data	VIVALDI, REACT II	VIVALDI			
ZOE Symptom Study App Data				UK wide (unlinked) Wales (linked)	
COG-UK Viral Genome		Finalising governance	Finalising governance	Governance agreed, to be linked shortly	Governance agreed, to be linked shortly

# Status of COVID-19 projects using the data –12 January 2021

14 additions to active research taking place takes total over 240. Most new projects enabled by NHS Digital or the Scottish National Data Safe Haven. There is a decrease in the bottle neck at projects submitted for IG approval.

# 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 Safe Haven)	Wales (SAIL Databank)	Northern Ireland (Honest Broker Service)	Total
In development	18 (-)	32 (+3)	30 (-)	90 (-)	6 (-)	176 (+3)
- a/w researcher	10	24(+2)	Not available	56	6 (-)	N/A
- a/w data custodian	(-) 8	) 8	available	(-)	0 (-)	A
Submitted for Information Governance approval	(-) 9(-)	(+1) 3(-3)	Not available 4(-2)	0 (-) 0 (-) 17 (-4)	34 (-)	N/A
Approved but not yet active	7 (-)	4 (+1)	9 (+2)	2 (-) 1 (-) 23 (+2)		
<b>Active research taking place</b>	<b>6 (-)</b>	<b>82 (+7)</b>	<b>65 (+6)</b>		<b>89 (+2) 1 (-) 242 (+14)</b>	
Active Number of Researchers	Not yet available	Not yet available	Not yet available	180 (-)	Not yet available	
Average time from application to active research	Not yet available	Not yet available	Not yet available	3 days	Not yet available	

## 12 new COVID-19 research studies funded

- Selected following rapid funding call from HDRUK, ONS and UKRI to use and enrich the National Core Study data.
- Studies have been chosen for their potential to impact near real time Covid-19 responses.
- 12 studies cover topics including: **palliative care, long COVID, epidemiology, transmission, vaccines, ethnicity, inequalities, and employment.**
- 12 studies will use data from across the four nations and will make data accessible for other researchers.
- Researchers will request data for their studies via the new Data Access Form on [The Innovation Gateway](#) | 5

### Participation in key UK wide studies:

- PRINCIPLE:** 3,218 participants, an increase of around 25% in last 4 weeks following establishment of data flow of Pillar 2 COVID positive test results to support recruitment
- RECOVERY:** 26,555 participants across 176 active sites (an increase of 40% in last 4 weeks)
- CO-CIN (ISARIC 4C)**
- 140,089 Tier0 (case report)
- 661 Tier1 (single sample)
- 1,717 Tier2 (serial sampling)
- GENOMICC:** 7,896 participants across 210 ICUs with a total of 5075 intensive care beds
- COVID-19 ZOE symptom study:** 4,533,041
- COG-UK:** 117,375 viral genomes sequenced

### 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.