



Plan S

Making full & immediate
Open Access a reality

Open Access, COVID-19 and Plan S

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**Stellenbosch University Library Symposium:
12th October 2021**

cOAlition S



COVID-19 has changed everything



Importance of OA recognized from the start

Sharing research data and findings relevant to the novel coronavirus (COVID-19) outbreak

31 January 2020



The outbreak of the novel coronavirus (COVID-19) represents a significant and urgent threat to global health.

We call on researchers, journals and funders to ensure that research findings and data relevant to this outbreak are shared rapidly and openly to inform the public health response and help save lives.

We affirm the commitment to the principles set out in the 2016 Statement on data sharing in public health emergencies, and will seek to ensure that the World Health Organization (WHO) has rapid access to emerging findings that could aid the global response.

Specifically, we commit to work together to help ensure:

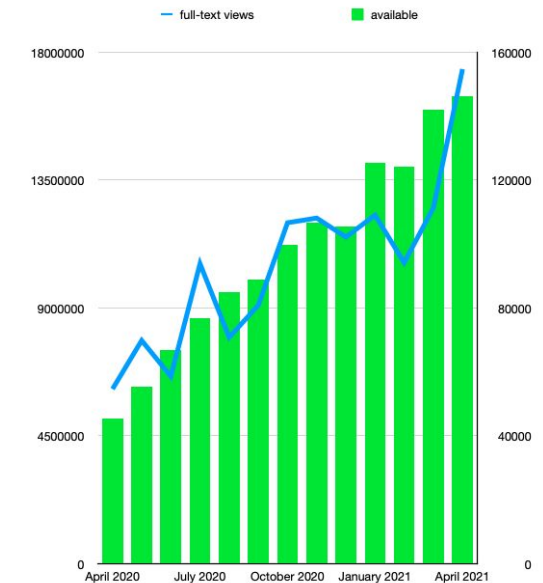
- all peer-reviewed research publications relevant to the outbreak are made immediately open access, or freely available at least for the duration of the outbreak
- research findings relevant to the outbreak are shared immediately with the WHO upon journal submission, by the journal and with author knowledge
- research findings are made available via preprint servers before journal publication, or via platforms that make papers openly accessible before peer review, with clear statements regarding the availability of underlying data
- researchers share interim and final research data relating to the outbreak, together with protocols and standards used to collect the data, as rapidly and widely as possible - including with public health and research communities and the WHO

Publishers respond

- Over 50 publishers signed the statement have made more than 150k COVID related articles **free to read** at PMC.
- In April 2021 alone, these articles were viewed more than 17m times

xmldata_phe_pmc_summary (14)

Month	full-text view	available
April 2020	6149195	45346
May 2020	7857034	55401
June 2020	6591477	66913
July 2020	10555910	76924
Aug use 2020	7967693	84895
September 2020	9100746	89004
October 2020	11998859	99723
November 2020	12164093	106547
December 2020	11494387	105575
January 2021	12268518	125291
February 2021	10594588	124353
March 2021	12524907	142090
April 2021	17404838	146165



Authors changed their publishing behaviours

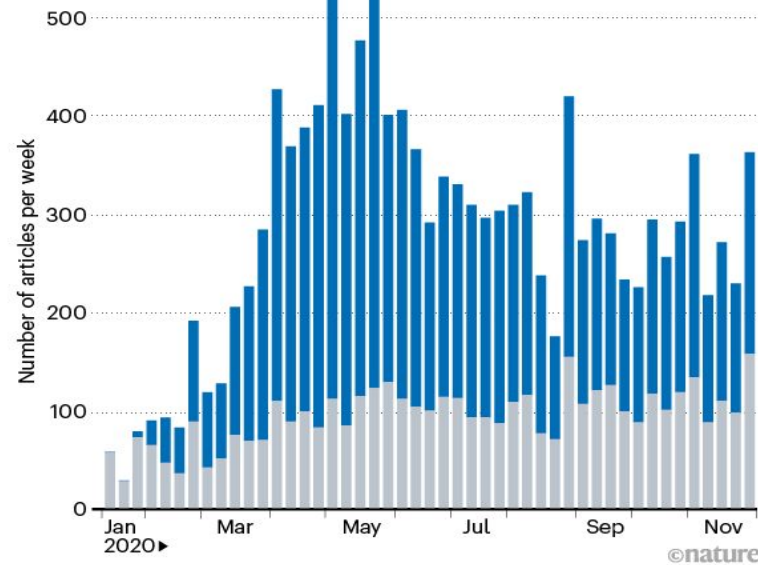
- Posting research on preprint servers became more prevalent
- medRxiv and bioRxiv host over 18k COVID-19 related preprints

MEDRXIV GROWTH

More than two-thirds of the preprints at medRxiv were related to COVID-19.

medRxiv submissions

■ COVID-19 papers ■ Other papers



Benefits of data sharing became evident

- Just **6 days** after the Chinese government had alerted the WHO to “*cases of pneumonia of unknown etiology ... detected in Wuhan*” - the first SARS-CoV2 genome sequence was published by Professor Edward C. Holmes, University of Sydney on behalf of the consortium led by Professor Yong-Zhen Zhang, Shanghai.
- The sharing of the SARS-CoV-2 sequence data was crucial – it helped to inform how public health officials should respond and gave researchers a starting point to develop the tools needed to tackle the virus.
- And, as of August 2021, this sequence has been cited in more than 1700 research articles and played a key role in the development of the BioNtech vaccine (and probably all of them)

Wuhan seafood market pneumonia virus isolate Wuhan-Hu-1, complete genome

GenBank: MN908947.1

⚠ This sequence has been updated. [See current version.](#)

[FASTA](#) [Graphics](#)

Go to:

LOCUS	MN908947	30473 bp ss-RNA	linear	VRL 12-JAN-2020
DEFINITION	Wuhan seafood market pneumonia virus isolate Wuhan-Hu-1, complete genome.			
ACCESSION	MN908947			
VERSION	MN908947.1			
KEYWORDS	.			
SOURCE	Wuhan seafood market pneumonia virus			
ORGANISM	Wuhan seafood market pneumonia virus Viruses; Riboviria; Nidovirales; Coronaviridae; Orthocoronavirinae; Betacoronavirus; unclassified Betacoronavirus.			
REFERENCE	1 (bases 1 to 30473)			
AUTHORS	Zhang,Y.-Z., Wu,F., Chen,Y.-M., Pei,Y.-Y., Xu,L., Wang,W., Zhao,S., Yu,B., Hu,Y., Tao,Z.-W., Song,Z.-G., Tian,J.-H., Zhang,Y.-L., Liu,Y., Zheng,J.-J., Dai,F.-H., Wang,Q.-M., She,J.-L. and Zhu,T.-Y.			
TITLE	A novel coronavirus associated with a respiratory disease in Wuhan of Hubei province, China			
JOURNAL	Unpublished			
REFERENCE	2 (bases 1 to 30473)			
AUTHORS	Zhang,Y.-Z., Wu,F., Chen,Y.-M., Pei,Y.-Y., Xu,L., Wang,W., Zhao,S., Yu,B., Hu,Y., Tao,Z.-W., Song,Z.-G., Tian,J.-H., Zhang,Y.-L., Liu,Y., Zheng,J.-J., Dai,F.-H., Wang,Q.-M., She,J.-L. and Zhu,T.-Y.			
TITLE	Direct Submission			
JOURNAL	Submitted (05-JAN-2020) Department of Zoonoses, National Institute of Communicable Disease Control and Prevention, Chinese Center for Disease Control and Prevention, Changping Liuzi 5, Beijing 102206, China			
COMMENT	[WARNING] On Jan 14, 2020 this sequence was replaced by MN908947.2 .			
	##Assembly-Data-START## Assembly Method :: Megahit v. V1.1.3 Sequencing Technology :: Illumina			

Funders supported infrastructure to make these data accessible

AI2 Allen Institute for AI

Research Papers **Data** Videos Demos Leaderboards Software

CORD-19: COVID-19 Open Research Dataset

Semantic Scholar • 2020

CORD-19 is a free resource of tens of thousands of scholarly articles about COVID-19, SARS-CoV-2, and related coronaviruses for use by the global research community.

[Download](#) [Read Paper](#) [View Website](#)

License: [CORD-19 Dataset License](#)


CORD19 dataset: Allen Institute, CZI and NIH

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Accelerating research through data sharing

[Read and sign our letter in support of open COVID-19 data](#)



- Viral sequences**
Raw and assembled sequence and analysis of SARS-CoV-2 and other coronaviruses.
3,395,223 records >
- Host sequences**
Raw and assembled sequence and analysis of human and other hosts.
15,308 records >
- Expression**
Gene and protein expression data of human genes implicated in the virus infection of the host cells. Identifying cell types and genes with highest expression in SARS-CoV-2 infections.
103 records >
- Proteins**
Curated functional and classification data on the SARS-CoV-2 protein entries and associated protein receptors.
2,162 records >
- Biochemistry**
COVID-19 pathways, interactions, complexes, targets and compounds.
5,928 records >
- Imaging**
Biological images from microscopy and other platforms.
21 records >
- Literature**
Search for the latest literature about SARS-CoV-2.
477,845 publications >
- Related resources**
A range of related resources for studying the SARS-CoV-2 coronavirus and the COVID-19 disease

COVID-19 data portal: EC & EMBL/EBI

All good then.....?

The sharing of research data is far from universal

- A search of Europe PMC shows that less than 10% of COVID-related research articles have data availability statements
 - 255,298 COVID full text articles in EPMC; 24,052 have DA statements [Search executed, 25th Aug 2021]
- Even for those which include a DA statement, the data is often available only on request and the criteria for accessing the data is often ambiguous.
 - One study reported that 8% of data availability statements mention ‘reasonableness’ as one of the criteria for granting access
- Another study – focusing on clinical trial data – found that data is only being shared in a minority of cases (15.7%), with nearly half (47.6%) of the trial registry entries explicitly saying they are ‘not willing to share data’
- These examples highlight that there is still significant work to be done to shift to make all research more open

ARTICLES | VOLUME 397, ISSUE 10269, P99-111, JANUARY 09, 2021

Safety and efficacy of the ChAdOx1 nCoV-19 vaccine (AZD1222) against SARS-CoV-2: an interim analysis of four randomised controlled trials in Brazil, South Africa, and the UK

Data sharing

Anonymised participant data will be made available when the trials are complete, upon requests directed to the corresponding author. **Proposals will be reviewed and approved by the sponsor, investigator, and collaborators** on the basis of scientific merit. After approval of a proposal, data can be shared through a secure online platform after signing a data access agreement. All data will be made available for a minimum of 5 years from the end of the trial.

Table 1 Data sharing statements from ClinicalTrials.gov registrations

From: [COVID-19 trials: declarations of data sharing intentions at trial registration and at publication](#)

	Reported data sharing statement (ClinicalTrials.gov)	Number Reclassified			Re-classified (based on review of IPD data sharing description field) in ClinicalTrials.gov
Yes	15.7% (145)	13	3	2	17.3% (159)
Undecided	14.2% (131)	7	3		14.5% (135)
No	47.8% (440)	13	7	2	45.8% (421)
No response (missing)	22.5% (208)				22.2% (204)
Total	924				

GISAID: a case study

- The GISAID Initiative promotes the rapid sharing of data from all influenza viruses and the coronavirus causing COVID-19.
- GISAID, to protect the rights of researchers who have deposited these SARS2 sequences, only make the data available to registered users, who agree to make use of them under certain terms and conditions.
 - Supporters argue that this encourages data deposition
- Other researchers believe that the access and re-use rights that GISAID apply to these genome sequences are too restrictive
- At Wellcome we require that any COVID sequences that arises from our funding must be deposited in **both** GISAID and in the INSDC repositories. Wellcome-funded researchers can request that access to the data posted in the INSDC repositories be embargoed for 3 months

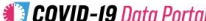
NEWS | 03 February 2021

Scientists call for fully open sharing of coronavirus genome data

Other researchers say that restrictions at the largest SARS-CoV-2 genome platform encourage fast sharing while protecting data providers' rights.

Critics decry access, transparency issues with key trove of coronavirus sequences

By Meredith Wadman | Mar. 10, 2021, 11:20 AM

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Open letter: Support data sharing for COVID-19

Sign our open letter

799

Signatures

Edith Heard
Director General, EMBL

Ewan Birney
Director, EMBL-EBI

Rolf Ameller
Director, EMBL-EBI

Niklas Blomberg
Director, ELIXIR

Guy Cochrane
Head of European Nucleotide Archive, EMBL-EBI

Katharina Lauer
COVID-19 Coordinator, ELIXIR

Aminda Zadissa
Senior Strategy Officer, EMBL-EBI

Emmanuelle Charpentier
Nobel Laureate, Scientific and Managing Director, Max Planck Unit for the Science of Pathogens

Sir Richard J. Roberts Ph.D. F.R.S
Nobel Laureate, Chief Scientific

We need open data, especially open SARS-CoV-2 sequence data, and open science to beat COVID-19 and to prepare for future outbreaks.

Why open data is so important

When responding to a health crisis, data play a critical role in understanding transmission, infection and symptoms, and in identifying drug targets, developing vaccines and designing public health responses. The COVID-19 pandemic has highlighted the critical value of open data and open science and international collaborations to progress scientific discovery when time is of the utmost importance.

We, the scientific community, need to ensure open science is a practised standard, and remove barriers that restrain effective data sharing. As much research and healthcare data as possible need to be taken out of silos and stored into an open, connected and FAIR (Findable, Accessible, Interoperable and Reusable) environment to prepare our healthcare systems for future pandemics, and to unleash the fast flow of research advances into clinical use for the benefit of society.

Commit to open data sharing

To aid these efforts, the signatories of this letter jointly call upon the data submitters, data users, policy makers and the wider research community to:

- Submit raw SARS-CoV-2 data to the databases of the International Nucleotide Sequence Database Collaboration (INSDC)
- Submit consensus/assembled SARS-CoV-2 data to the databases of the INSDC
- Provide information relating to the sequenced isolate or sample as part of the sequence submission; a minimum of time and place of isolation/sampling and an isolate/sample identifier should be provided to maximise the value of the sequences
- In cases where scientists have already established submissions to other databases, these submissions should continue in parallel to the INSDC submissions

Public access is not OA

- It is good that publishers have made the COVID literature free to read.
- However, this is **not** open access – as the right to reuse this content is restricted. For example most articles are published under an “All Rights Reserved” licence which restricts reuse
- Moreover, some publishers have made it clear that once the pandemic is declared to be over these articles will once again be placed behind a paywall
- **Solution?**
 - All funders to support OA and ensure that all research – COVID, climate change, or whatever – is made fully OA, CC BY, zero embargo.
 - **In short, all funders encouraged to align OA policy with Plan S**

Journal List > OUP Public Health Emergency Collection > PMC8374317



[Oper Neurosurg \(Hagerstown\)](#), 2021 Jul 9 : opab238.

PMCID: PMC8374317

Published online 2021 Jul 9. doi: [10.1093/ons/opab238](https://doi.org/10.1093/ons/opab238)

PMID: [34245154](https://pubmed.ncbi.nlm.nih.gov/34245154/)

Retrosigmoid Craniectomy and Suprameatal Drilling—3-Dimensionally Printed Microneurosurgical Simulation: 2-Dimensional Operative Video

Jaime L Martinez, MD, Aaron Damon, BS, Ricardo A Domingo, MD, Fidel Valero-Moreno, MD, and Alfredo Quiñones-Hinojosa, MD

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Oxford University Press Public Health Emergency Collection Oxford University Press



Access



Plan S: overview

Principles, Implementation Guidance & Challenges

Plan S: Strong Principles

- Research results are a public good and should be immediately available to accelerate science
- Open Access must be immediate: no embargo periods
- Publication under a CC-BY license by default, no copyright transfer
- No 'hybrid' model of publication, except as a transitional arrangement with a defined endpoint
- Pricing, contracts and publication fees should be transparent and reasonable
- Funders commit to support such publication fees, individual researchers do not pay
- A commitment to assess research outputs based on their intrinsic merit and NOT their venue of publication or quantitative metrics following DORA

Three routes to compliance

Gold route

Open Access journals / platforms

- Authors publish in Open Access journal...
- ... cOAlition S funders financially support publication fees for author

Green route

Subscription journals

- Authors **can** publish in a subscription journal...
- ...*IF* they make the Version of Record or Author Accepted Manuscript instantly available in a repository
- cOAlition S funders do ***NOT*** financially support publication fees in 'hybrid' subscription journals

Transformative route

Hybrid / subscription journals

- Authors publish in a journal with a Transformative Arrangement.
- cOAlition S funders ***CAN*** financially support Open Access under Transformative Arrangements

Organisations working jointly on the implementation of Plan S

National funders



Charitable and international funders & research organisations



European funders





**We are working to encourage
other funders to join the cOAlition**

**Only by funders working together
– in partnership with institutions
and researchers – will we change
scholarly communication system
and make it fit for the 21st century**

Questions

