The Joys, Trials and Disappointments of Working Towards Sharing of Data from RCTs During a Pandemic

ICODA case study

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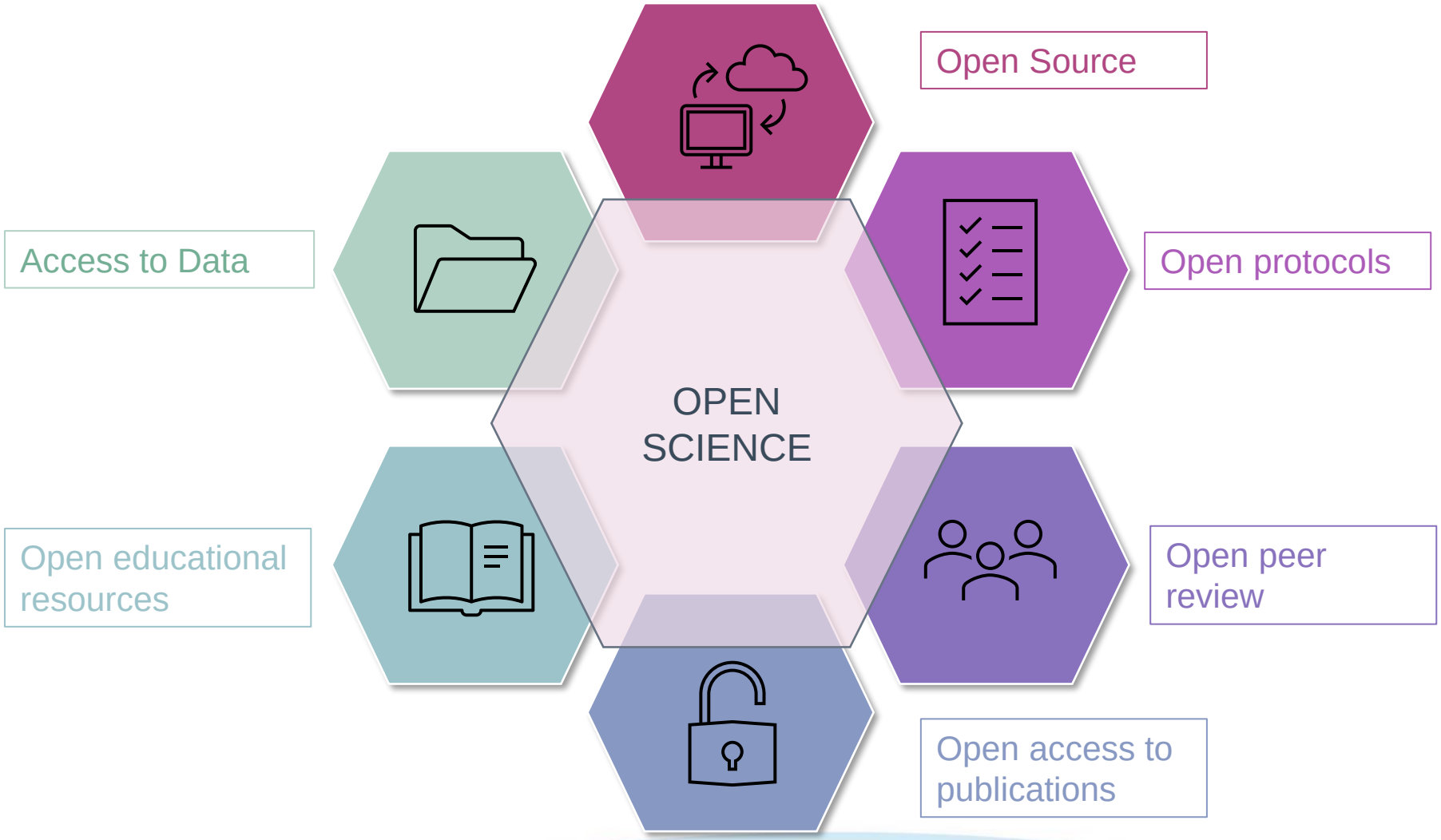
Access to Data is a key component of Open Science



Access to Data benefits all stakeholders…

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Researchers	Research Teams	Funders	The General Public	Policy Makers
• Visibility • Insights • Funding • Networking	• Access to full information sources • Speed • Funding • Cost-effectiveness • Networking	• Decisions to fund based on complete data • Increased impact of funding • Accountability	• Transparency to generate trust • Answers to their questions	• Decisions based on complete data • Enhanced accountability

but even a pandemic hasn't been enough incentive to achieve timely data sharing
We need to reflect and ACT differently

Case Study: International COVID-19 Data Alliance (ICODA)

ICODA is an open and inclusive global collaboration of leading life science, philanthropic and research organisations that have come together to harness the power of health data to respond to the COVID-19 pandemic. ICODA is convened by Health Data Research UK, the national institute for health data in the UK.

VISION

To unite international health research data to enable discoveries that benefit everyone, everywhere, by reducing the harm of COVID-19; and enable an efficient data response to future pandemics and other health challenges.

MISSION

To build an open international partnership that demonstrates trustworthiness to support a rapid response to COVID-19 and a long-term alliance for making data accessible to researchers and scientists around the world.

Convened by

HDRUK Health Data Research UK

Therapeutics Accelerator Funders

Bill & Melinda Gates foundation

Chan Zuckerberg Initiative

mastercard

Microsoft AI for Health

Minderoo Foundation

wellcome

Thousands of COVID-19 trials are now underway…

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… but researchers are often unable to explore the data.

Imagine identifying specific treatments for at risk subgroups as part of a Precision Public Health policy approach

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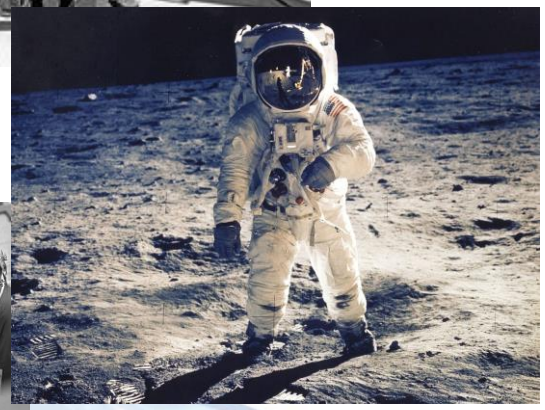
- The specific benefits of a treatment
- The safety profile of a treatment
- Assessment of sources of heterogeneity in treatment response
- Evaluation of multiple drug classes
- Methods to account for evolving Standard of care
- Endpoint definitions informed by past trials
- Control rates better defined to improve trial design

- We undertake studies only where we know there remains uncertainty
- We design new trials with the best available information
- We align our resources where they have the most impact



A full year's effort has not yet been fruitful

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July-Aug	Sept-Dec	Jan-Mar	April-June
• Launch • Logistics • Data Dictionary developed • 2 contracts	• 5 more contracts • 3 data sets • Review panel set up • Test with Wave 1 researchers • Incorporation of Certara's machine readable data sweep from public sources • Commentary in TIRS journal	• REMAP-CAP and 3 more contracts • 1 more data set • 20 academic trials approached, and 5 other platform trials	• Data Service Center pilot • New data partners • More data sets • Researchers work with data • More collaborations with other data sharing platforms and research initiatives

Significant Variation in cycle times: Driver Project 1 observations

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Delay due to Publication lag and Regulatory reviews	• Data Sharing contingent on publication, even of failed trial. This can cause a significant delay. • Health Authority review of successful file may be hampered by others having access to data
Legal Considerations	• Data Originator may call for a systems audit • Balance between protecting IP of data originator vs licensing construct to enable data research • Data Governance constructs
Reliance on individual relationships	• Senior level champion not always available to address roadblocks that inevitably come up in large complex organisations • Data delivery team is critical – may not be aware of organizational commitments
Lack of standards and resources to enable rapid data delivery	• Data Dictionary must be applied, so educations and orientation are required • Lack of resources to prepare and submit data – those who know the study are busy (if trial was positive) or reassigned (if the trial was negative)
Recognition for originators of the data and potential misuse	• Recognition only for publications or business outcomes, this is extra 'volunteer' work • Concerns about the quality of the work done with their data • May have their own collaborations on 'meta-analyses'

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The burning platform that wasn't

All stakeholders can be active to enact solutions

Investigators enable onward use of data after the primary research is complete	• Researchers consider secondary uses when designing their studies, • Adoption of standards and common data definitions where these exist • Use “Opt-Out” as default participant permission strategy
Funders and Policy Makers create new requirements	• Data sharing and specific timing as an explicit condition of funding – and a future funding contingency • Data Sets and Software repositories link to ORCID • Mandates for accountability to the public and patient groups (& engagement)

An open and transparent research information infrastructure which links all research inputs and outputs to individual contributors.

Data Sharing Logistics made Standard	• Create 'ISO' like credentialling for data sharing platforms • Invest in data services centre to facilitate standardisation and onboarding • Convene stakeholders to develop streamlined data governance models and analysis approaches to ensure reliable inference • Showcase results
Incentives Aligned with Desired Behaviours	• 1-2% of total grant added to resource for data sharing • Metrics of productivity and impact include publications, citations and data research work based on secondary use of data

We must honour the context in which the data was originally generated but also challenge ourselves to do better

"I like friends who have independent minds because they tend to make you see problems from all angles."

–Nelson Mandela

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RECOVERY
Randomised Evaluation of COVID-19 Therapy

Lessons learned from the RECOVERY trial on the use of routine health data for regulatory standard clinical trials – and going international

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Senior Clinical Fellow, Clinical Trial Service Unit and Epidemiological Studies Unit, University of Oxford
Honorary Nephrologist, Oxford University Hospitals NHS Foundation Trust

Conflicts of interest

RECOVERY is funded by Medical Research Council of United Kingdom Research and Innovation and the National Institute for Health Research (NIHR); and by core funding provided by NIHR Oxford Biomedical Research Centre, Wellcome, the Bill and Melinda Gates Foundation, the Department for International Development, Health Data Research UK, the Medical Research Council Population Health Research Unit, the NIHR Health Protection Unit in Emerging and Zoonotic Infections, and NIHR Clinical Trials Unit Support Funding.

Tocilizumab was provided free of charge for this study by Roche. AbbVie contributed some supplies of lopinavir–ritonavir for use in the trial. Regeneron contributed supplies of REGN-COV2 for use in the clinical trial. Other medications, including dexamethasone, that were used in the trial were supplied by the National Health Service (NHS).

- I am employed by the Nuffield Department of Population Health (NDPH), University of Oxford
- I have an Honorary contract with Oxford University Hospitals NHS Foundation Trust
- I receive no honoraria or personal payments from industry in compliance with the NDPH policy for maintaining scientific independence*
- I am a co-applicant on research grants from The Medicines Company/Novartis and Novo Nordisk to the University of Oxford

* https://www.ndph.ox.ac.uk/files/about/ndph-independence-of-research-policy-jun-20.pdf/@@download

RECOVERY: Key impact

Dexamethasone

- Death reduced by a third in patients on a ventilator

Tocilizumab

- Death reduced by 15% among those with hypoxia and inflammation

REGEN-COV2

- Death reduced by one fifth in those without anti SARS-CoV-2 antibodies

Hydroxychloroquine, Lopinavir-ritonavir, Azithromycin, Convalescent plasma, Colchicine, Aspirin

- Not effective in patients hospitalised with COVID-19

RECOVERY Routine Health Data Two Worlds

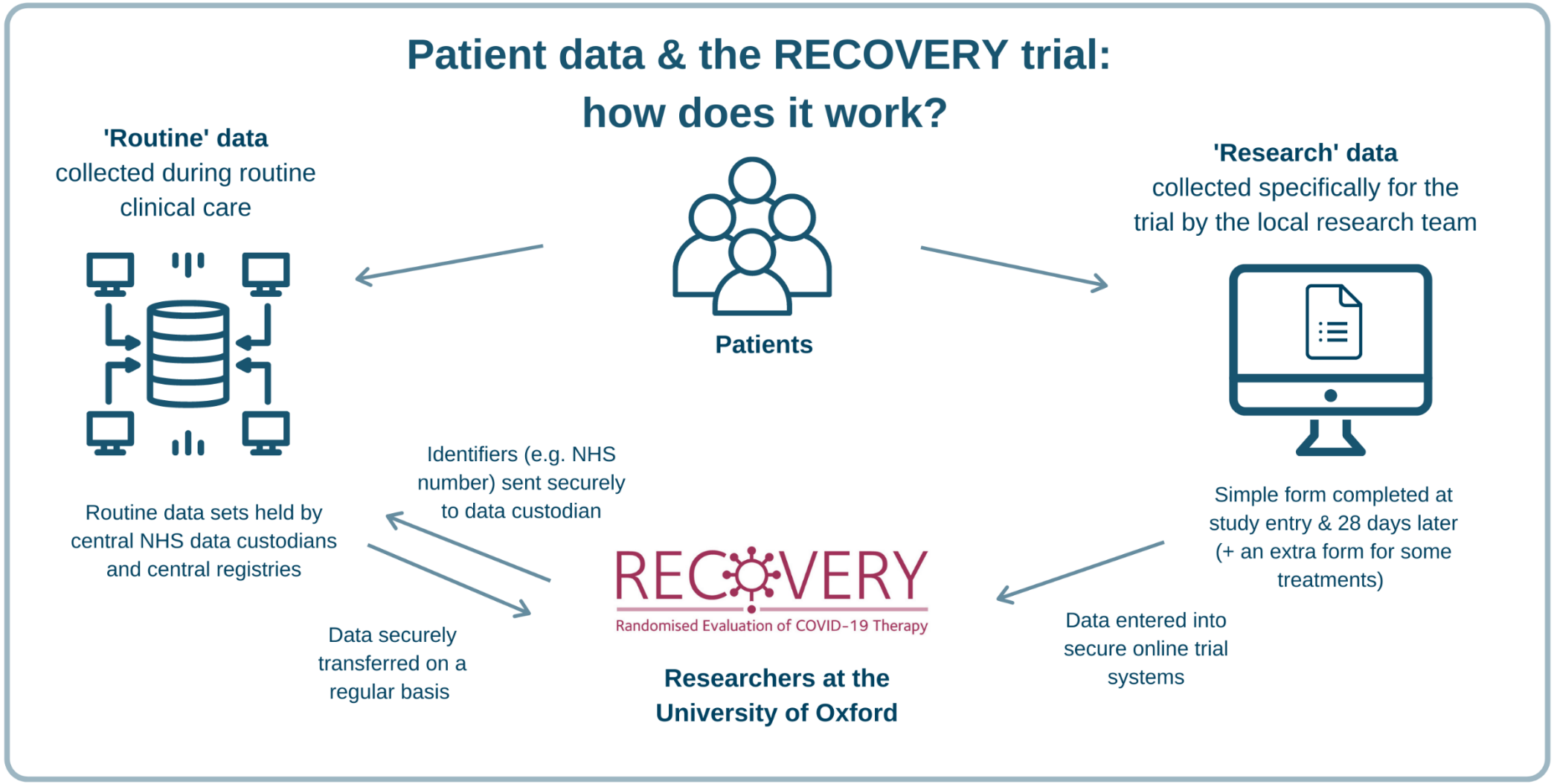
Clinical Trials

- Highly regulated
- Specific methodological issues
- Traditionally uses research data
- Processing identifiable data
- Real-time outcomes

Health Data Science

- Less regulation
- Rapid development
- Novel, evolving methods
- Often using anonymised data
- Often retrospective

RECOVERY: Linkage to routine healthcare data



RECOVERY: Going National

Hospitalisation datasets

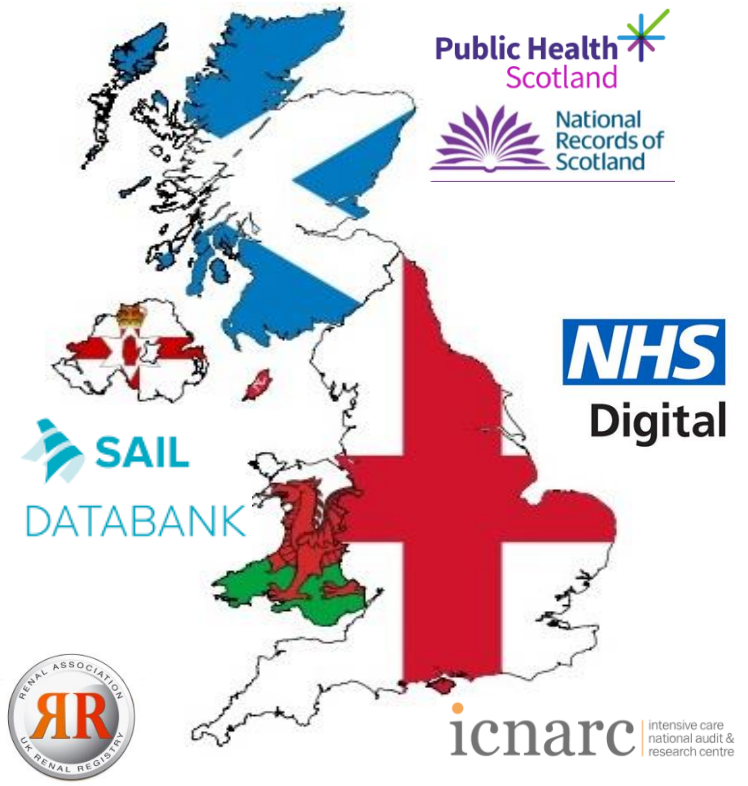
- ✓ Scottish Morbidity Records (SMR)
- ✓ Hospital Episode Statistics Admitted Patient Care (HESAPC)
- ✓ Secondary Uses Service Admitted Patient Care (SUSAPC)
- ✓ Patient Episode database for Wales (PEDW)

Mortality datasets

- ✓ Personal Demographics Service
- ✓ Civil Registrations
- ✓ NHS Scotland Central Register PDS
- ✓ Welsh Demographics Extract

Disease specific datasets

- ✓ UK Renal Registry
- ✓ Cancer Registry



Primary care datasets

- ✓ Business Services Authority (BSA) prescribing and dispensing data
- ✓ General Practice Extraction Service (GPES) Data for pandemic planning and research (GDPPR)

Critical care datasets

- ✓ Scottish Intensive Care Society Audit Group (SICSAG)
- ✓ Intensive Care National Audit and Research Centre (ICNARC)
- ✓ HES Critical Care Dataset (CCDS)
- ✓ PEDW Critical Care Dataset (CCDS)

COVID datasets

- ✓ COVID-19 Hospitalisation in. England Surveillance System
- ✓ Second Generation Surveillance System (SGSS)
- ✓ Electronic Communication of Surveillance in Scotland (ECOSS)
- ✓ Welsh Results Reporting Service (WRRS)

Challenges


UK sites
UK health systems
International sites
International health systems
RECOVERY
Randomised Evaluation of COVID-19 Therapy
Participants
Regulators
Researchers