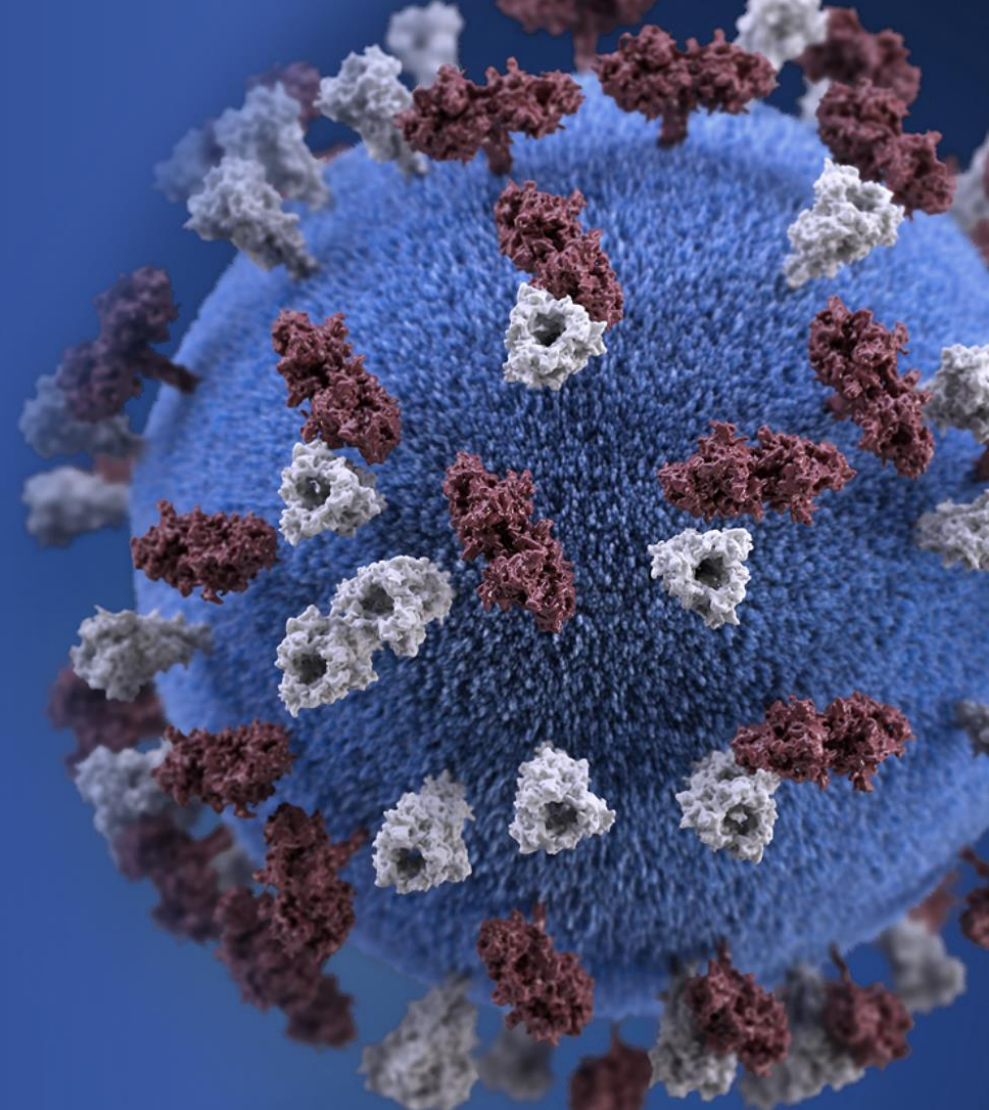


COVID-19 Genomics UK Consortium

COG-UK is a pioneer in the use of large-scale, rapid whole-genome sequencing of SARS-CoV-2, the virus causing the COVID-19 pandemic, to understand viral transmission and evolution, and to inform public health responses and vaccine development.

Viruses sequenced

561,663



Improving health through enhanced data linkage to UK SARS-CoV-2 genomes

Professor Sharon Peacock, 23 June 2021

Importance of sequencing during the pandemic

SARS-CoV-2 genome sequencing provides actionable information:

- Reveals patterns of SARS-CoV-2 **introduction and transmission**
- Detects **emergence** of Variants of Concern and Variants of Interest
- **Maps** the distribution of variants **to inform policy and interventions**
- **Monitors effectiveness** of vaccines/non-pharmaceutical interventions
- Enables variant-informed **development of diagnostics, vaccines and therapeutics**

COG-UK: who we are and how we work together



Project administration



COG-UK Director
Professor Sharon Peacock



Funders providing
£20M



Central sequencing
hub and cloud
infrastructure



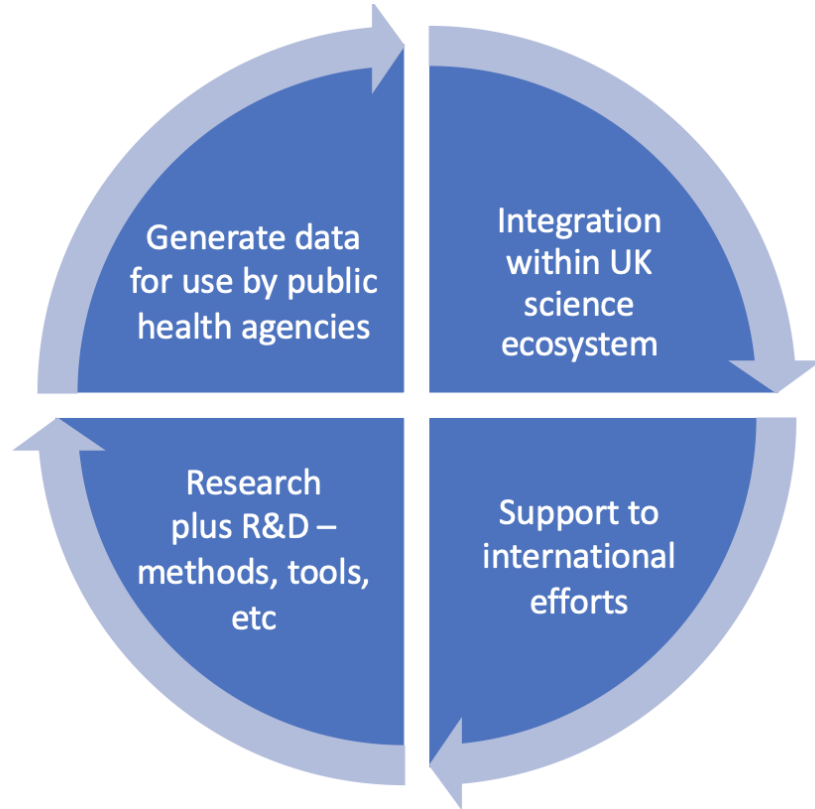
Four public health
agencies



16 regional
sequencing sites

Belfast, Birmingham, Cardiff (PHW), Cambridge, Edinburgh, Exeter, Glasgow, Liverpool, Newcastle, Norwich, Nottingham, Oxford, Portsmouth, London (UCL), London (PHE), Sheffield

COG-UK objectives, outputs & who we support



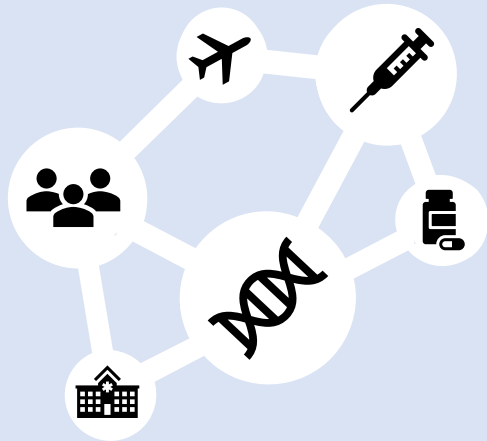
- >560,000 viral genomes sequenced
- ~10% of reported positive cases in the UK
- Data used by PHA's in variant horizon scanning, surveillance and public health interventions

Random community and hospital genomic surveillance	
National studies	Public health
<ul style="list-style-type: none">• Surveillance (ONS & REACT)• Vaccine trials• Transmission (care homes, prisons, hospitals)• <u>GenOMICC</u> (host genome)• SIREN (reinfection, vaccines)	<ul style="list-style-type: none">• Severe disease• Vaccine failure• Reinfection• Importations• Surge testing

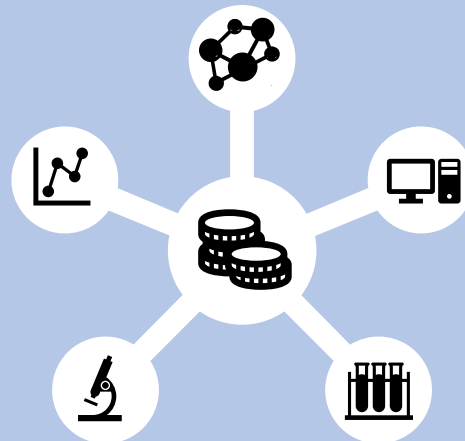
COG-UK focus in 2021-2022

A refocusing of efforts around research and expertise

Data linkage across the UK science ecosystem



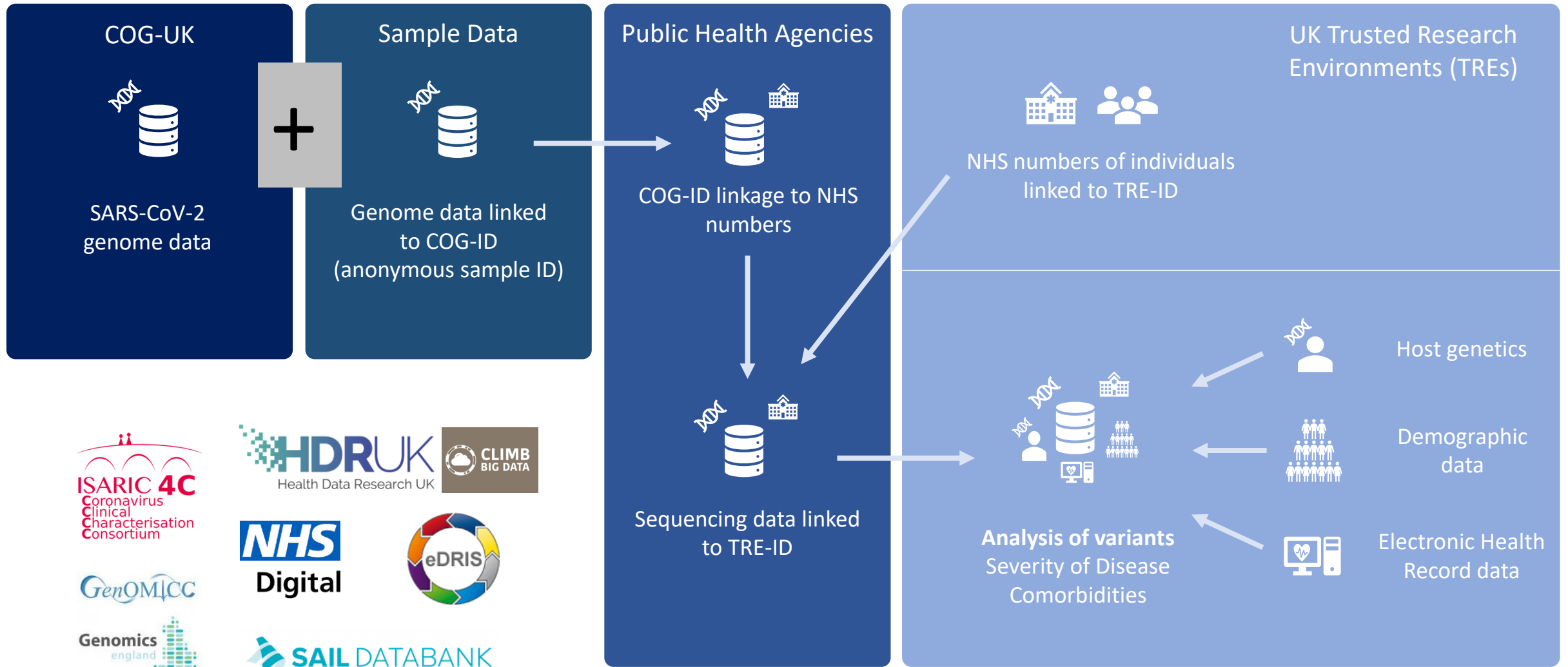
Internal funding release to capitalize on data linkage



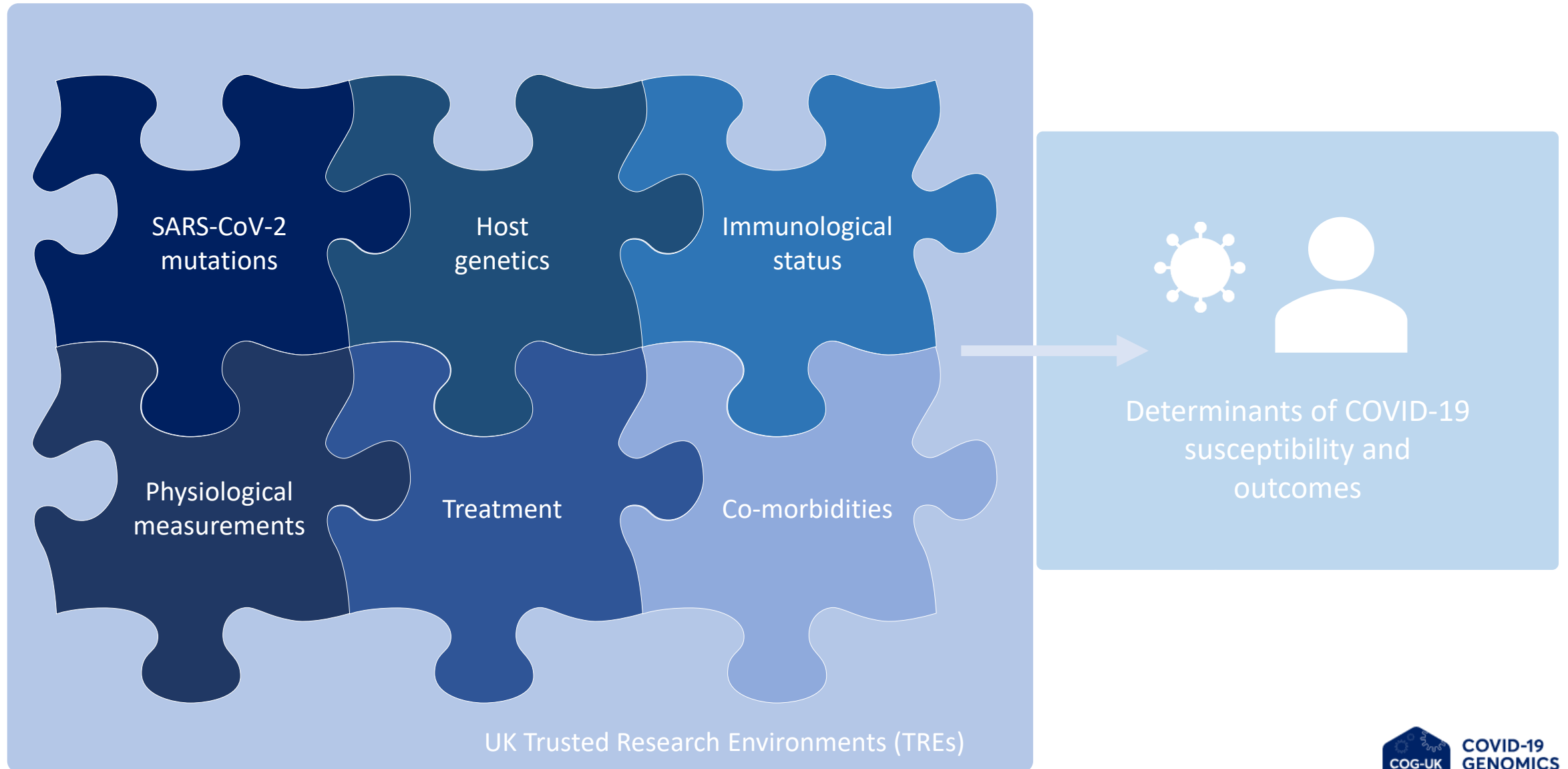
COG International



Linking sequencing to other health record data



Joining it all up



Thank you

