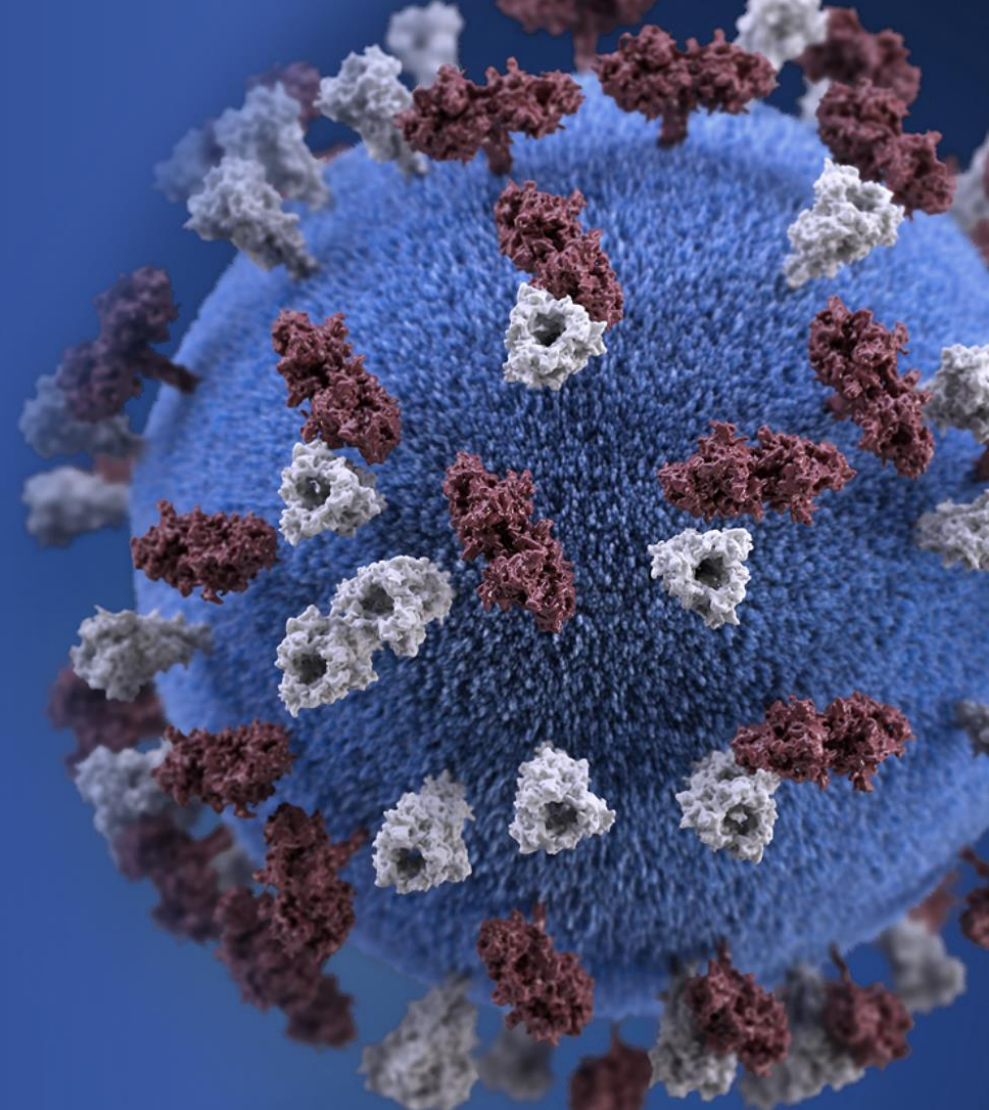


# COVID-19 Genomics UK Consortium

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



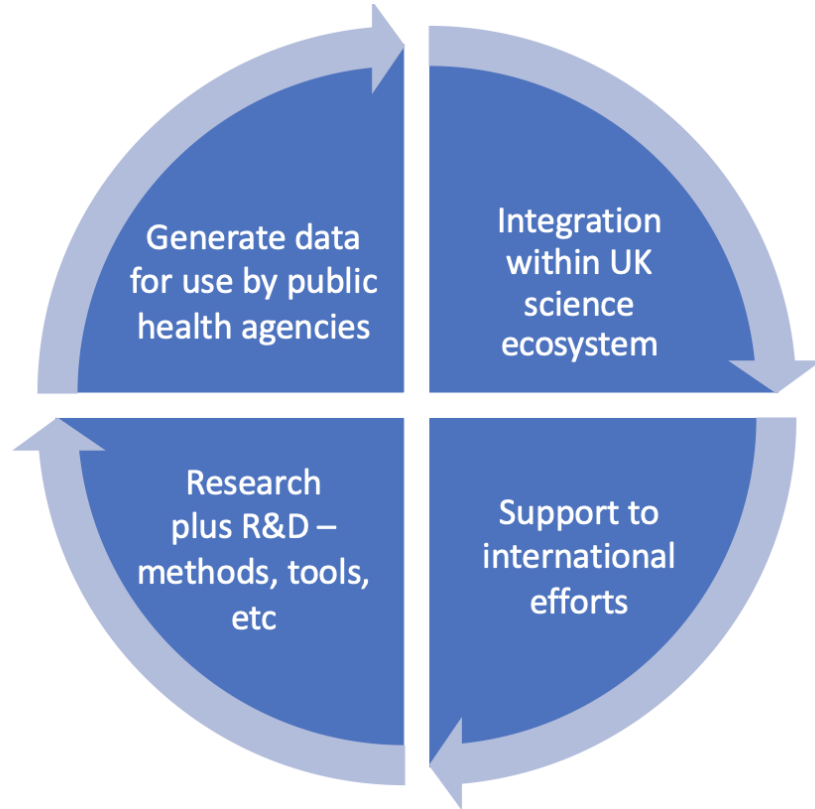
Four public health agencies



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

## Sequence allocation

### Random community and hospital genomic surveillance

#### National studies

- Surveillance (ONS & REACT)  
Vaccine trials
- Transmission (care homes, prisons, hospitals)
- GenOMICC (host genome)
- SIREN (reinfection, vaccines)

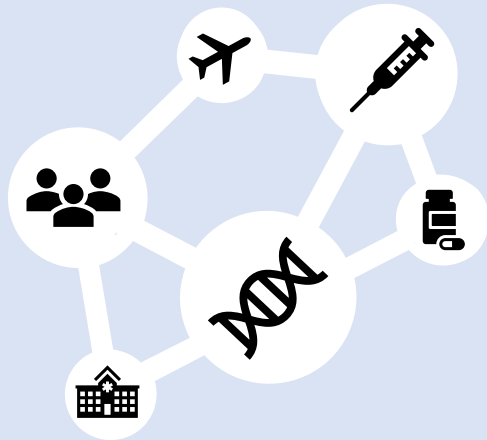
#### Public health

- Severe disease
- Vaccine failure
- Reinfection
- Importations
- Surge testing

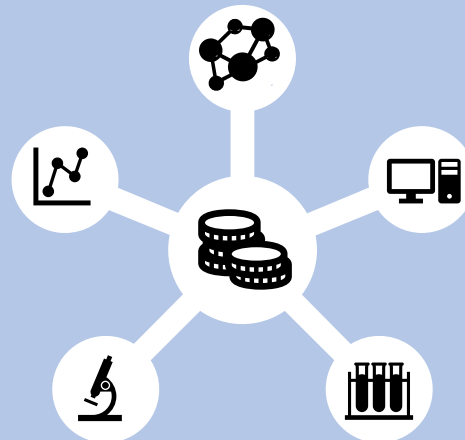
# COG-UK focus in 2021-2022

## A refocusing of efforts around research and expertise

Data linkage across the UK science ecosystem



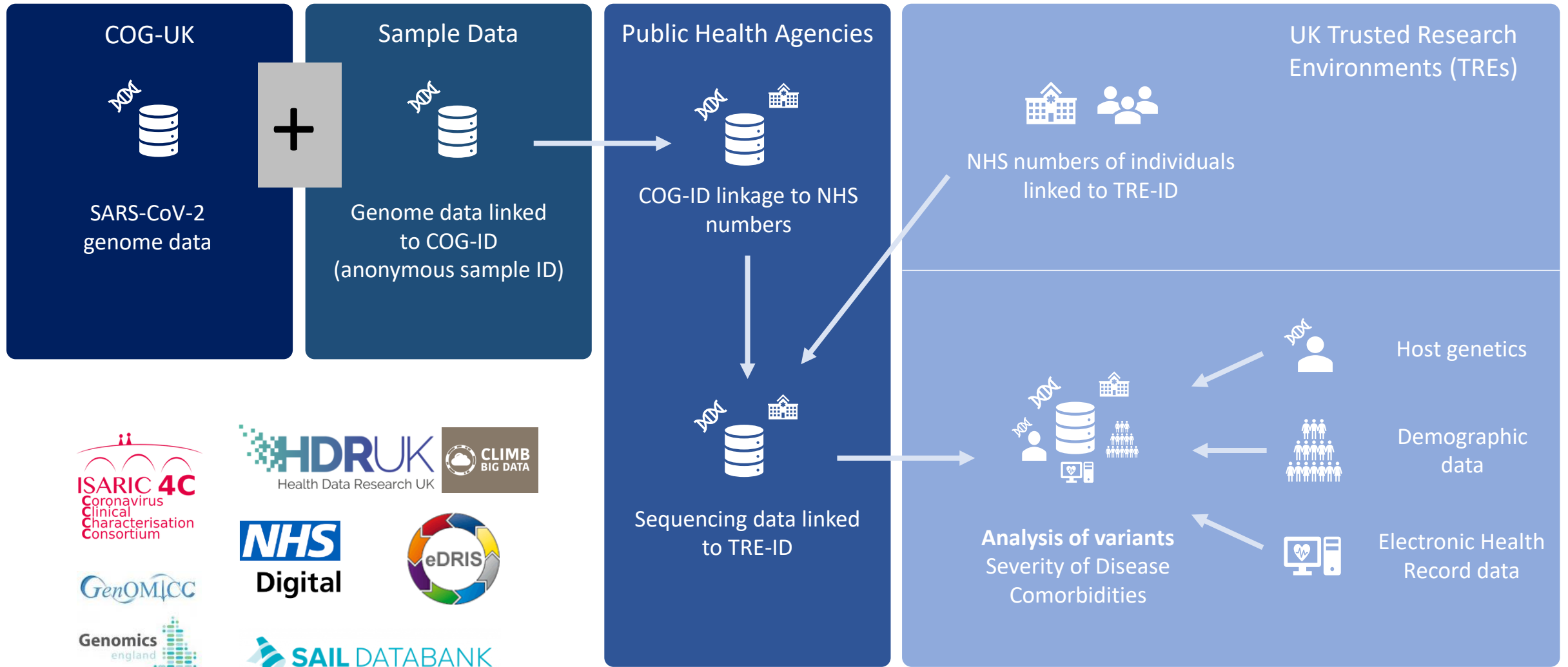
Internal funding release to capitalize on data linkage



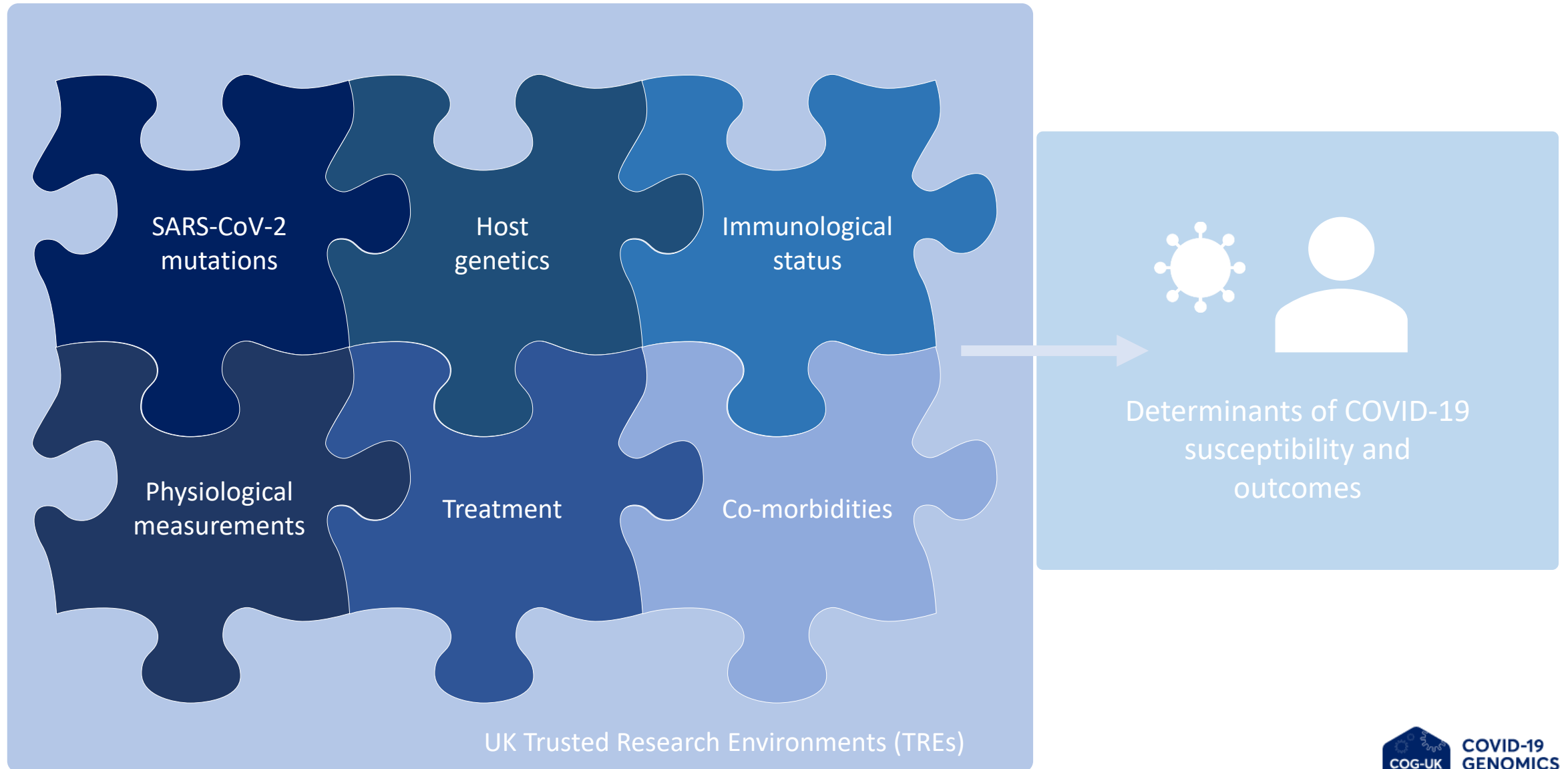
COG International



# Linking sequencing to other health record data



# Joining it all up



# Thank you

