

Burden of disease of COVID-19: strengthening the collaboration for national studies
European Public Health Conference, 10-12th November 2021

Unravelling data for rapid evidence-based response to COVID-19: unCoVer

José L. Peñalvo

e-mail: jpenalvo@itg.be Twitter: [@JosePenalvo](https://twitter.com/JosePenalvo) [@uncoverEU](https://twitter.com/uncoverEU)

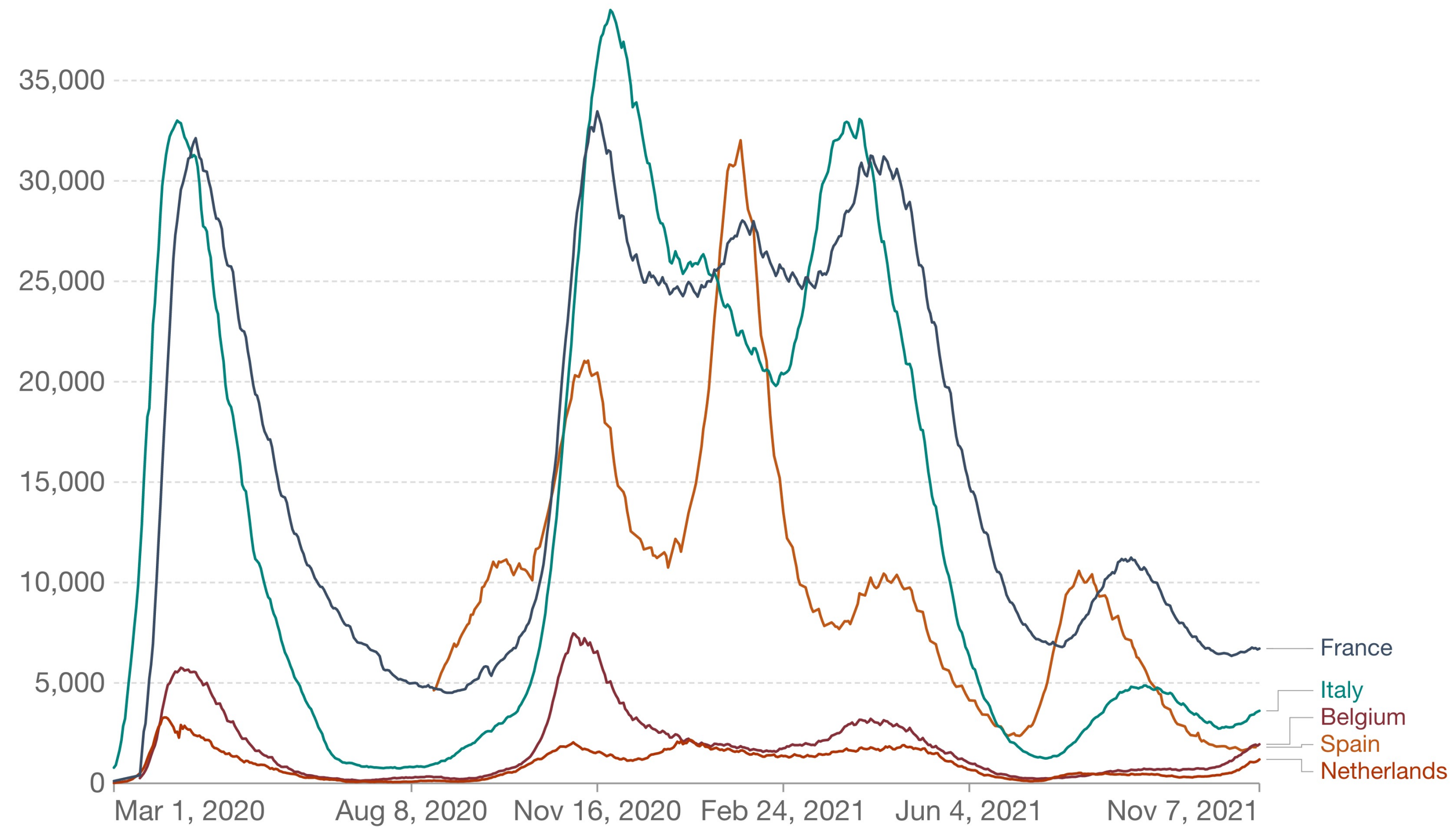
All about unCoVer

‘Unravelling Data for Rapid Evidence-Based Response to COVID-19’

Why

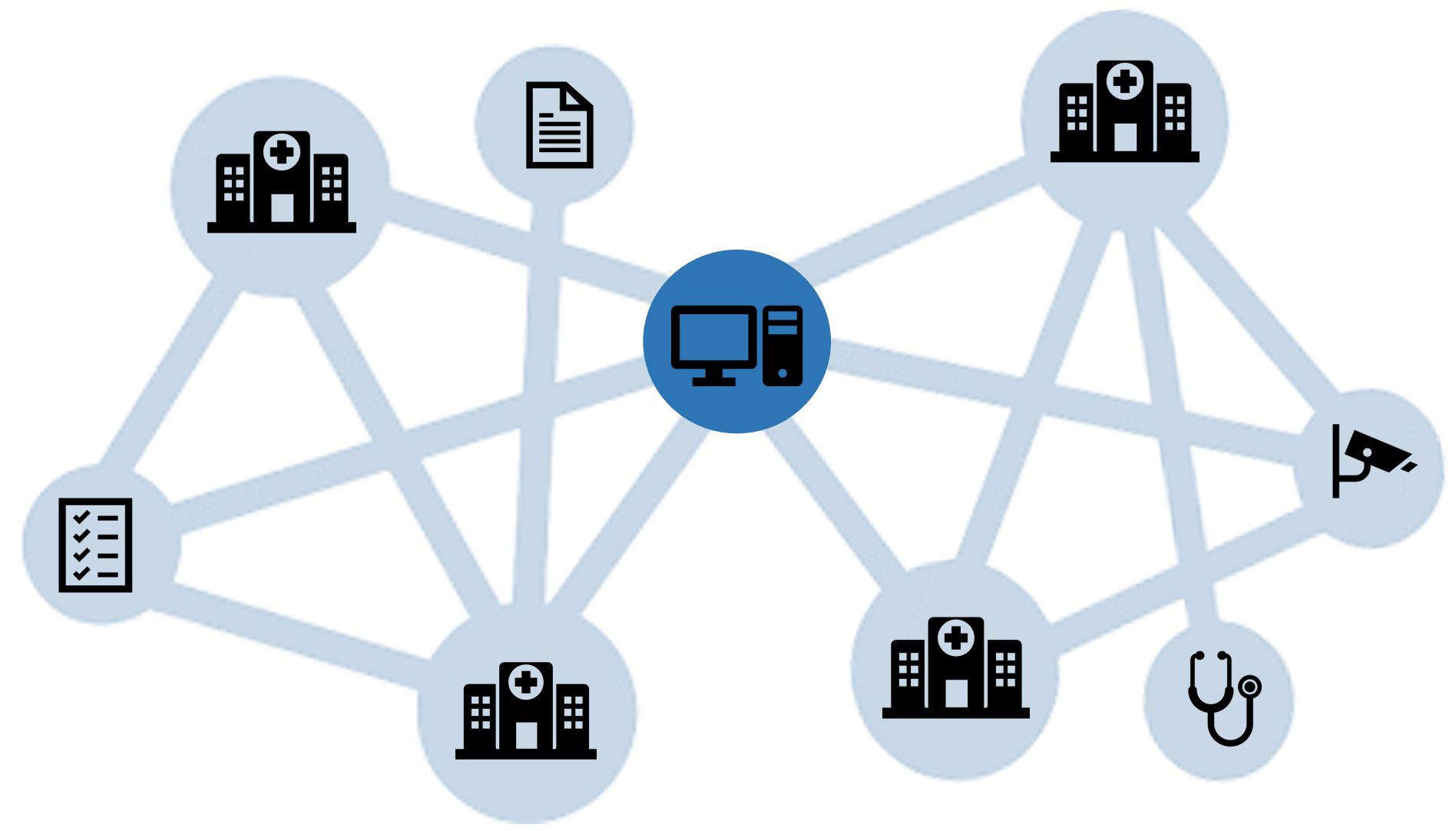
Number of COVID-19 patients in hospital

Our World
in Data



Source: European CDC for EU countries, government sources for other countries – Last updated 11 November 2021, 13:50 (London time)
OurWorldInData.org/coronavirus • CC BY

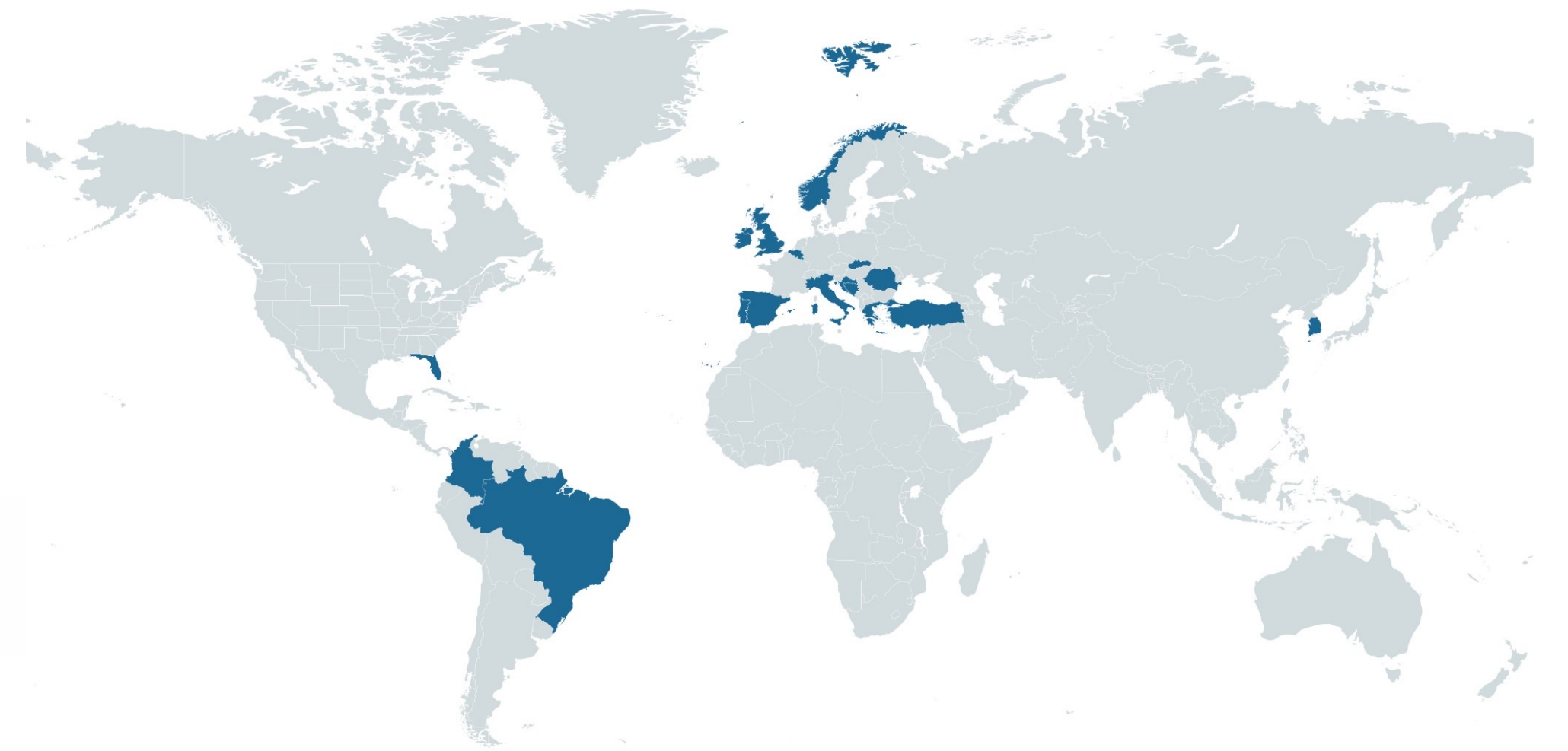
What



Functional network of partners capable of collecting and utilizing **real world data [RWD]** derived from the response and provision of care to **COVID19 Patients** by the health systems across Europe, and elsewhere

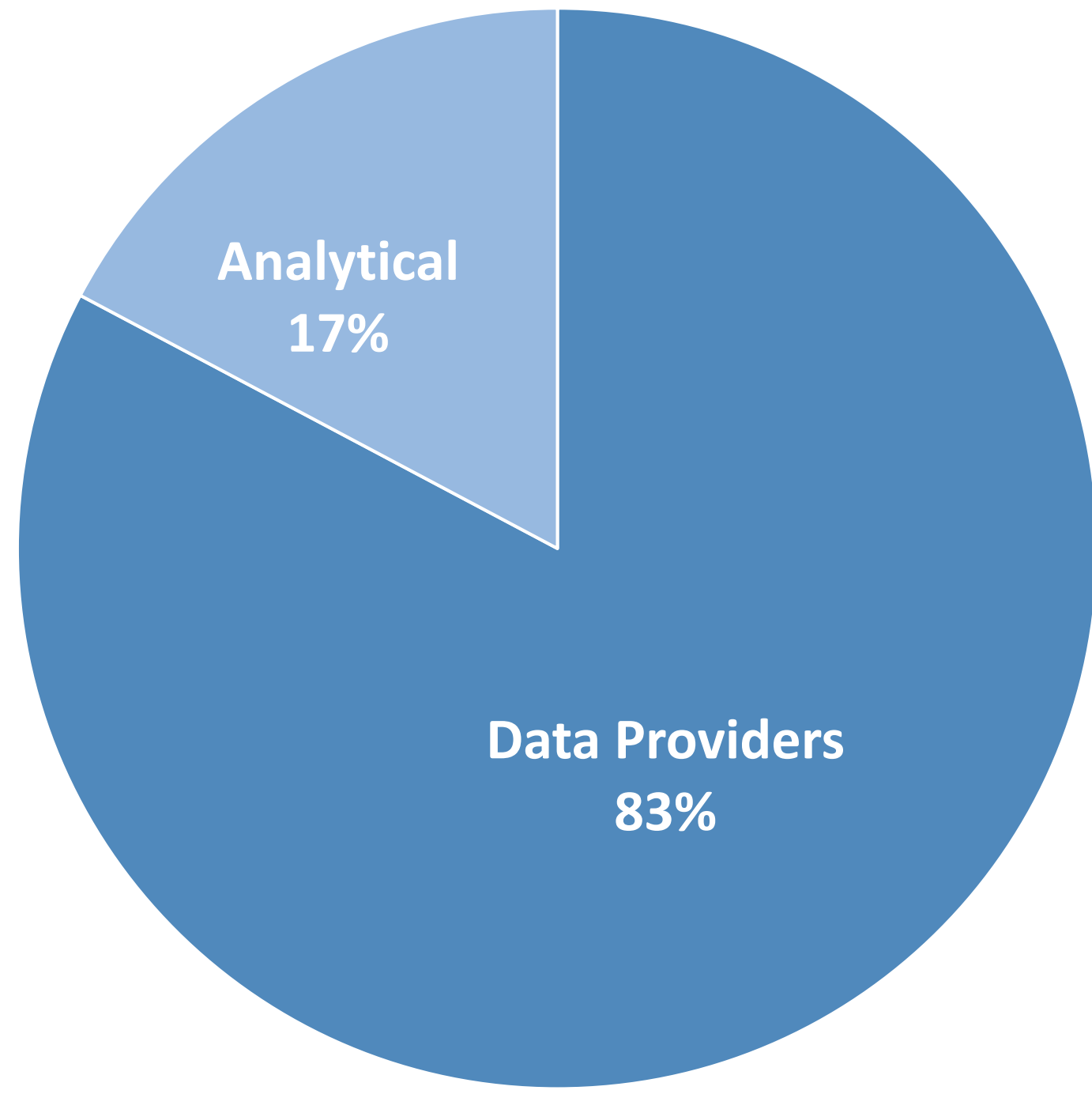


How

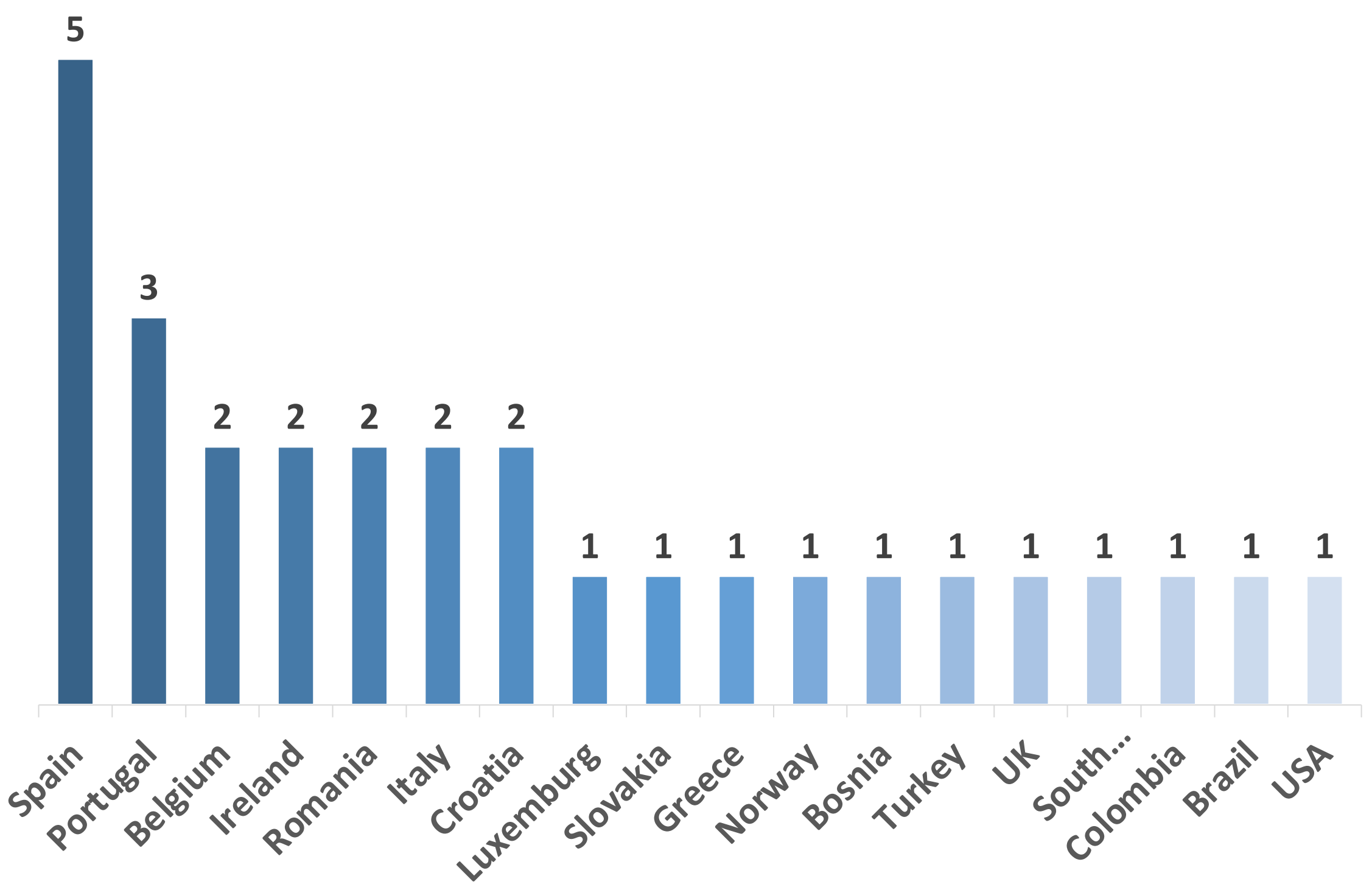


What

29 partners

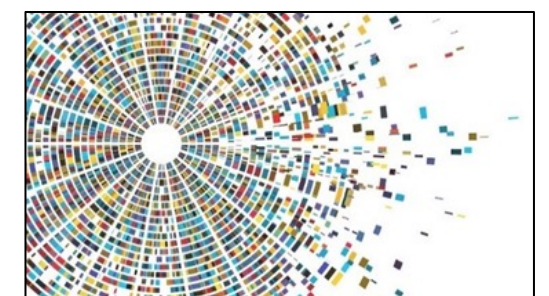
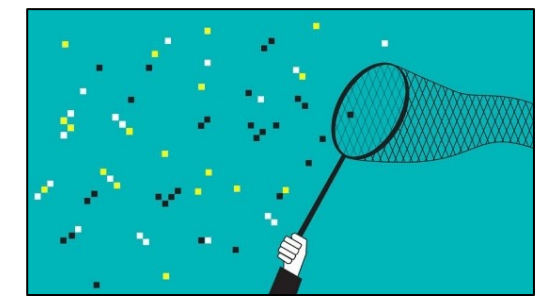


18 countries



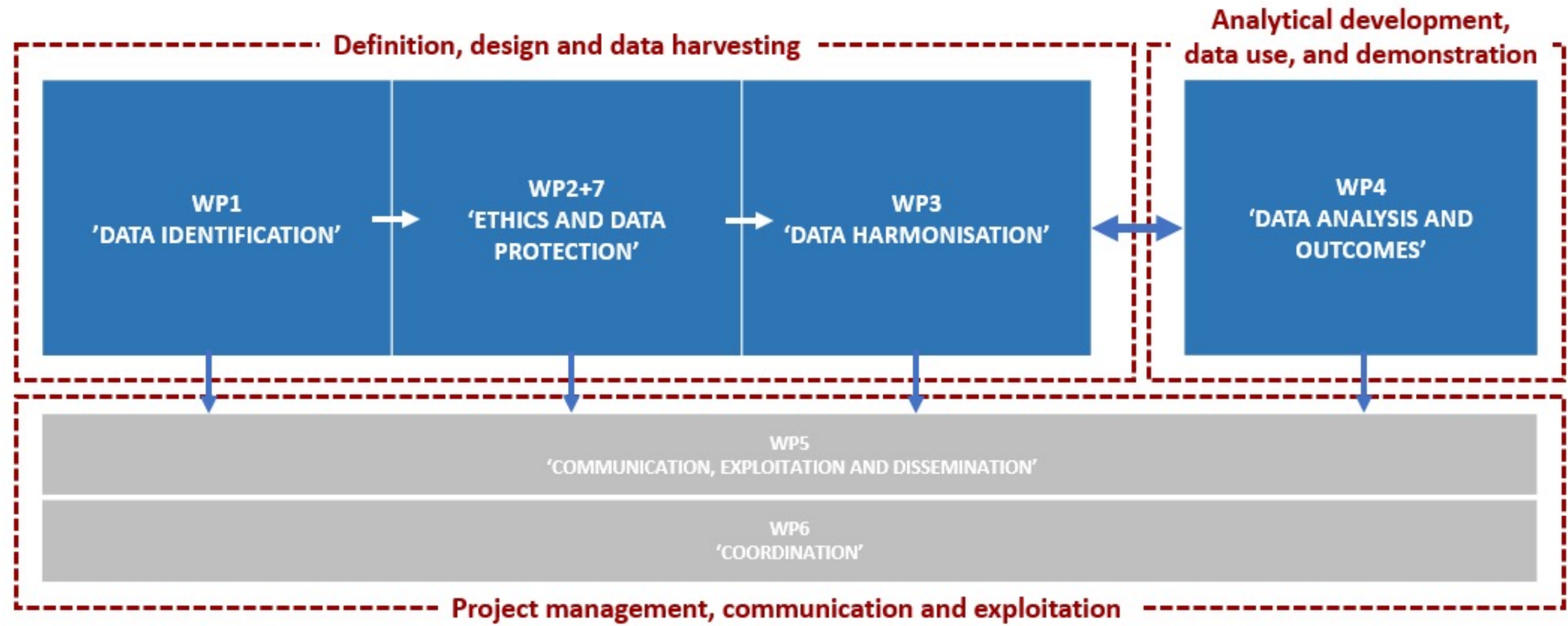
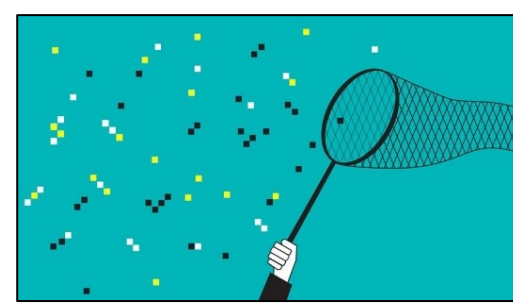
Objectives

- ▶ Bring together European and international expertise
- ▶ Monitor, identify, and facilitate the access and use of COVID-19-related RWD
- ▶ Identify data gaps, and marginalized populations and proactively seek synergies with complementary existing and planned clinical databases related to COVID-19
- ▶ Provide a **platform for the use of dissimilar data sources capable of streamlining ethical and legal aspects**, by innovative computational resources
- ▶ **Bring together expertise on the use of advanced computational, epidemiological and biostatistical methods** to handle heterogeneous, and multi-layered information
- ▶ **Broadcast the use and results of the platform** to attract new partners and to pursue complementarity with existing similar networks in Europe and internationally to **save lives and optimize resources**.



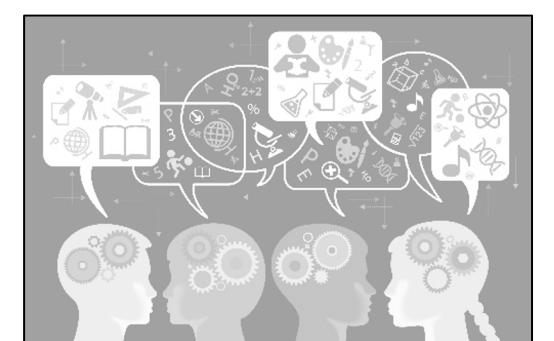
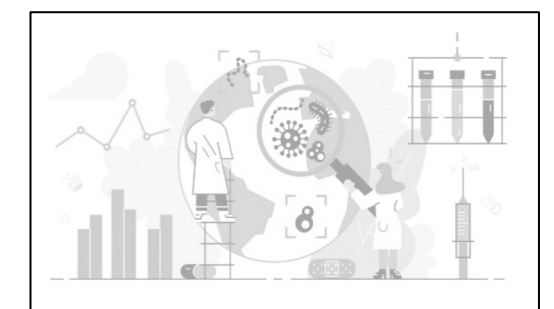
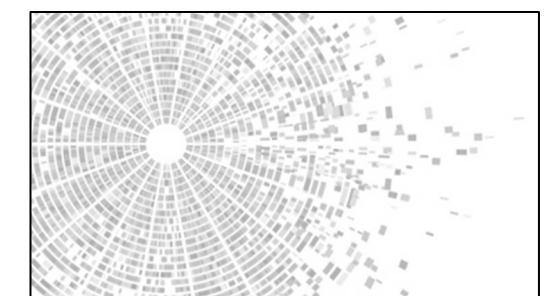
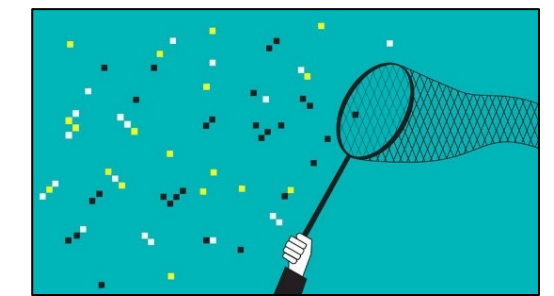
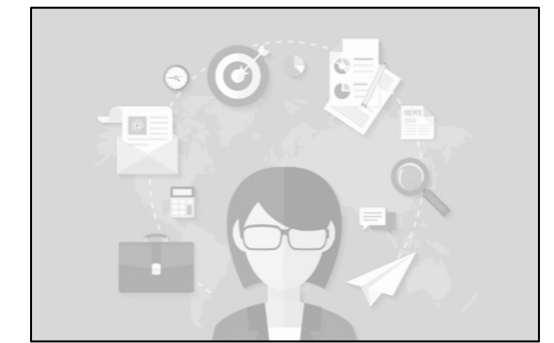
WP Structure

- ▶ WPs are divided into **three blocks of activities**:
 - **Block 1 'Definition, design and data harvesting'** [WP1, WP2+WP7 and WP3]
 - **Block 2 'Analytical development, data use and demonstration'** [WP4]
 - **Block 3 'Project management, communication and exploitation'** [WP5 and WP6]



WP1 'Data identification'

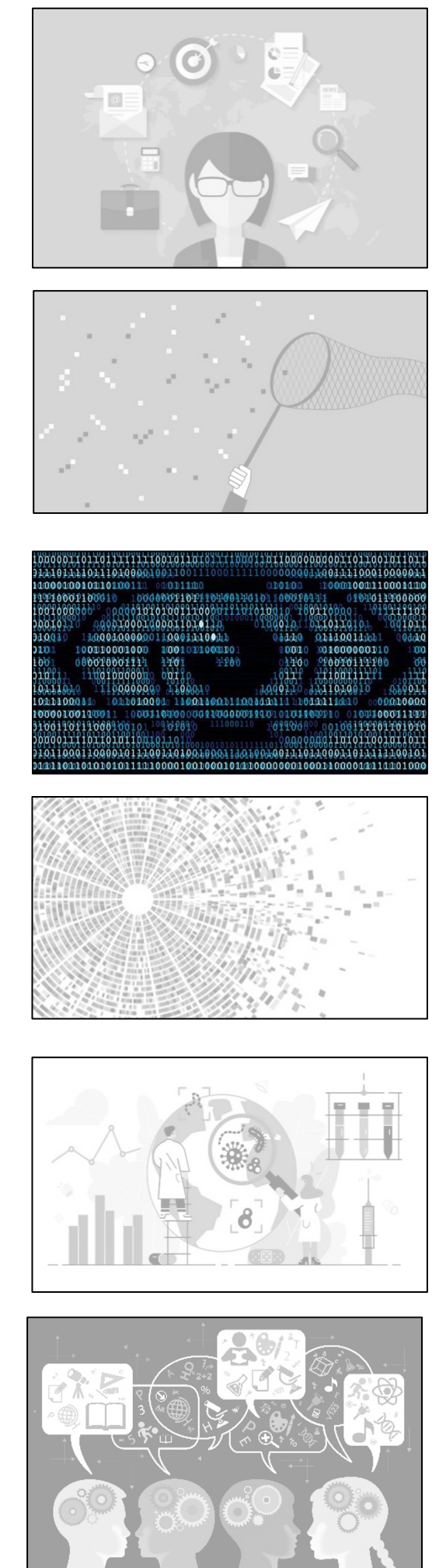
- ▶ **16 databases of electronic medical records** from 10 different countries, **6 national registries**, **4 observational cohorts**, and **2 databases on population screening**.
- ▶ At least **two-time points of data collection**: at admission and discharge.
- ▶ **Demographics, clinical/epidemiological data** and other data types (**bio-specimens, imaging data, social network-/contact-tracing related data, movement-related data** and **mental health data**).



WP2 ‘Ethics and data protection’

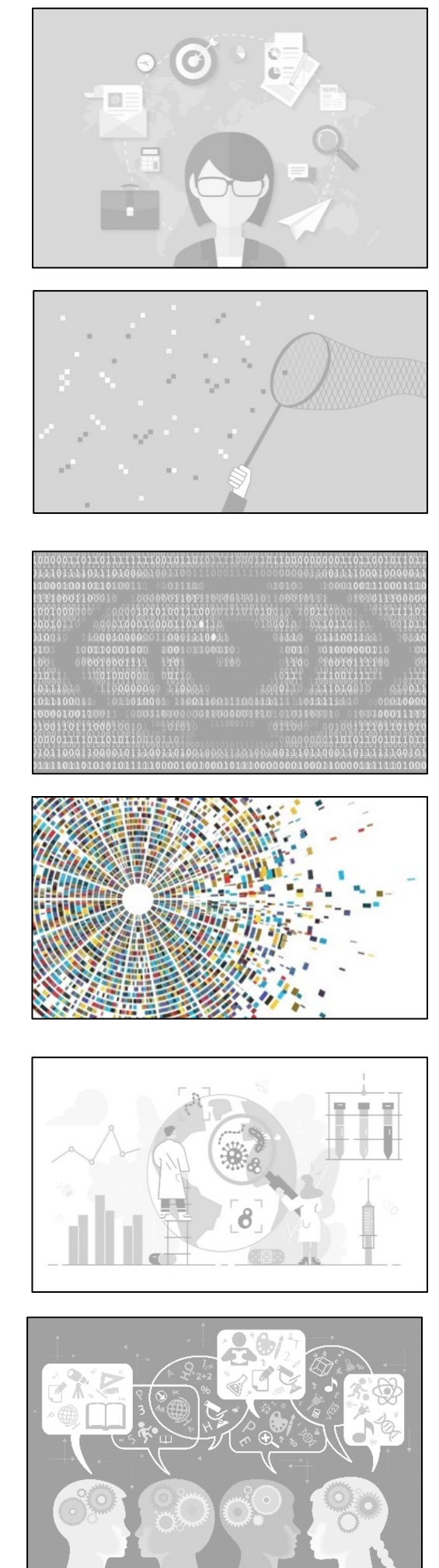
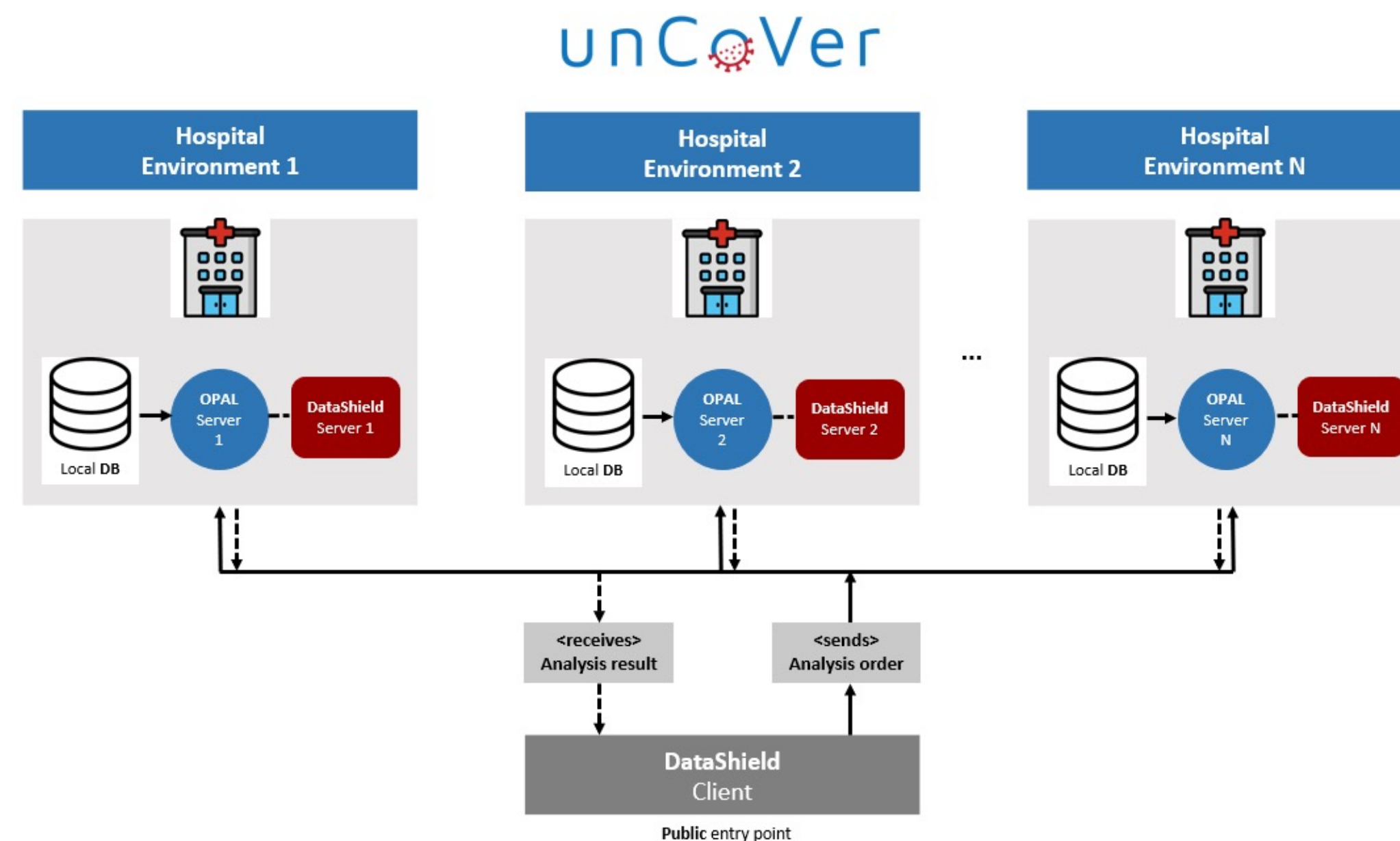
Information and documentation collected from each data provider since the project started:

- ▶ Data sources & types
- ▶ Informed/Explicit consent
- ▶ Pseudonymized/anonymized data
- ▶ Personal data or not
- ▶ Data minimization
- ▶ Ethical approval
- ▶ DPIA
- ▶ DPO identified/DPO letter
- ▶ Third party sharing (within EU and outside EU)
- ▶ Data workflow
- ▶ Vulnerable group
- ▶ Good Clinical Practice (GCP) training



WP3 'Data harmonization'

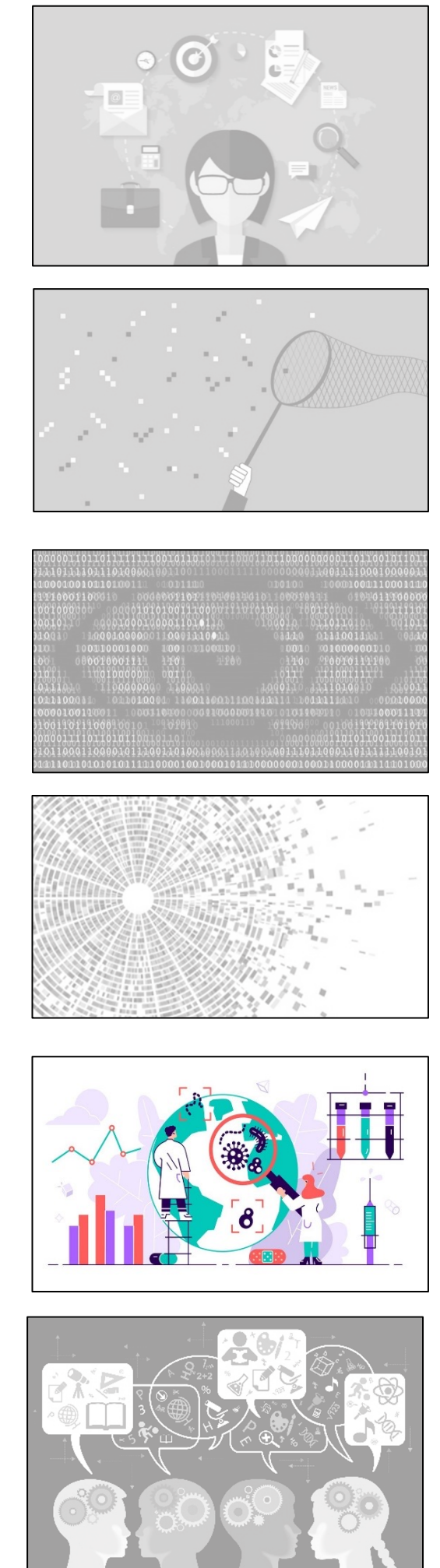
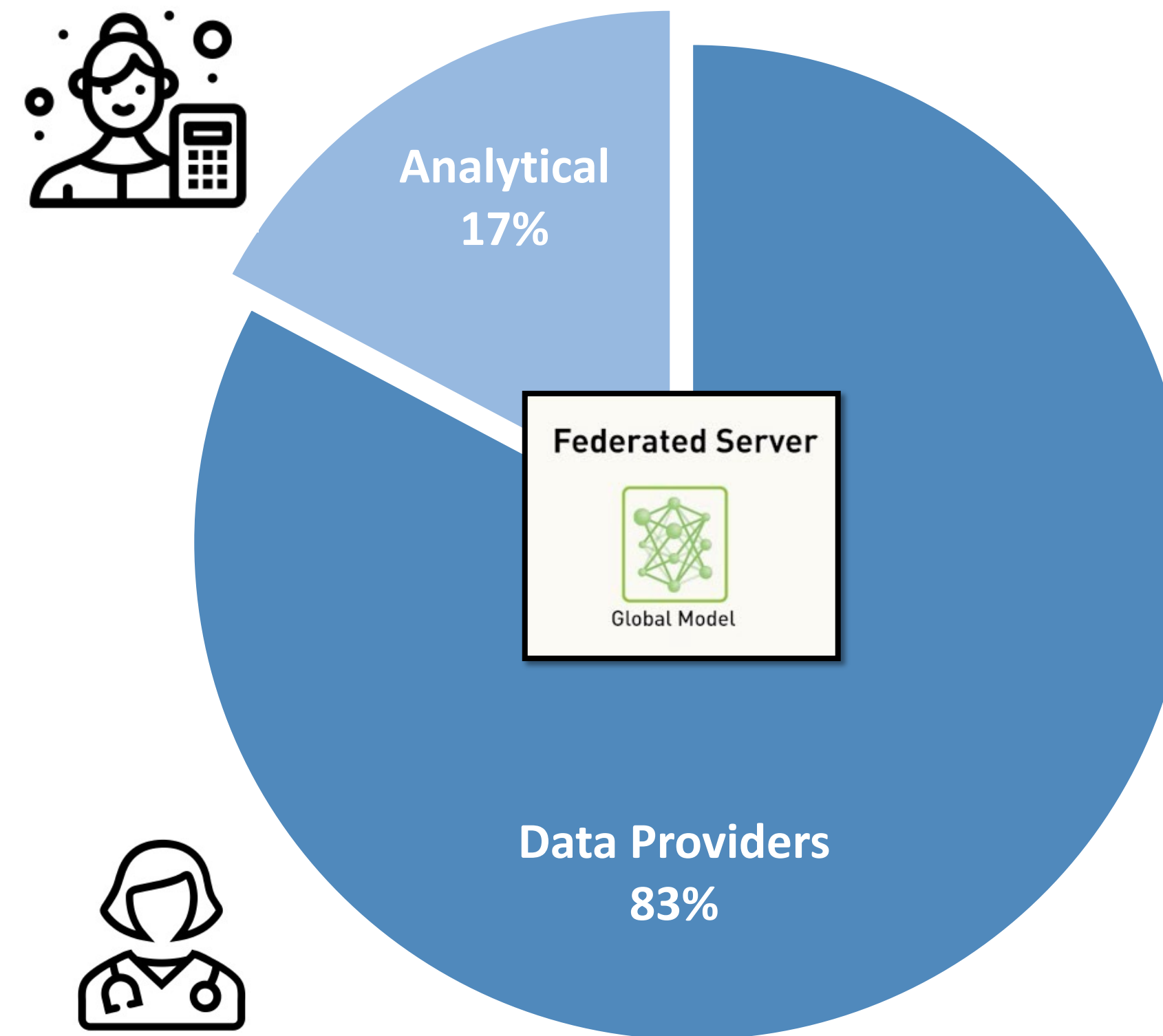
- ▶ **Federated learning:** machine learning procedure where the goal is to train a **high-quality model with data distributed over several independent providers.**
- ▶ The **data remains locked on their server, and the algorithms and predictive models travel between them.**
- ▶ **Opal 4.1 (OBiBa suite, Maelstrom Research, Montreal, Canada):** <https://www.obiba.org/>



WP4 'Data analysis and outcomes'

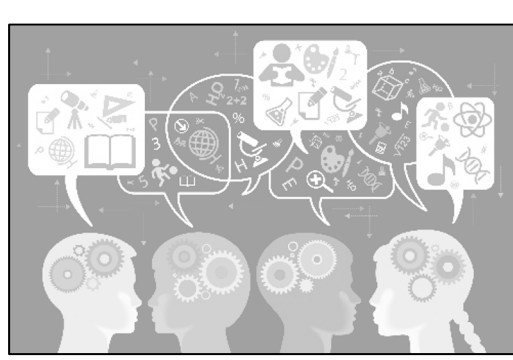
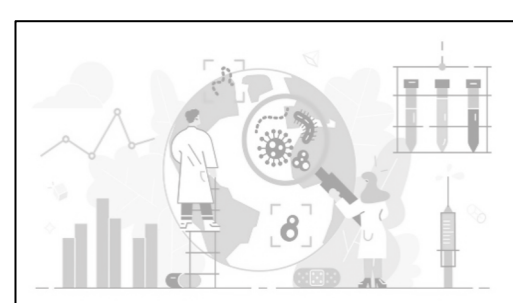
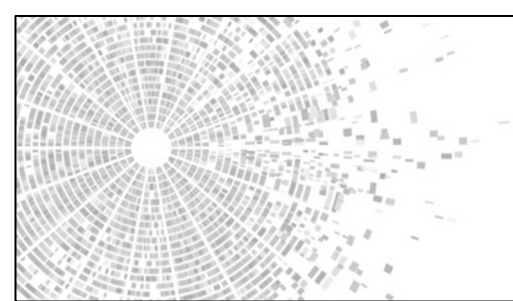
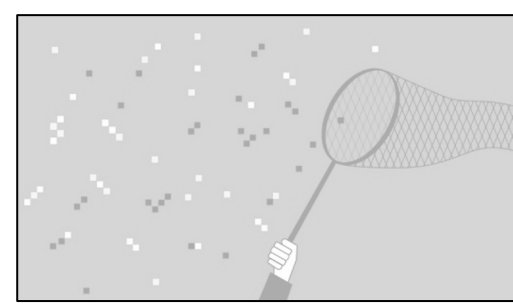
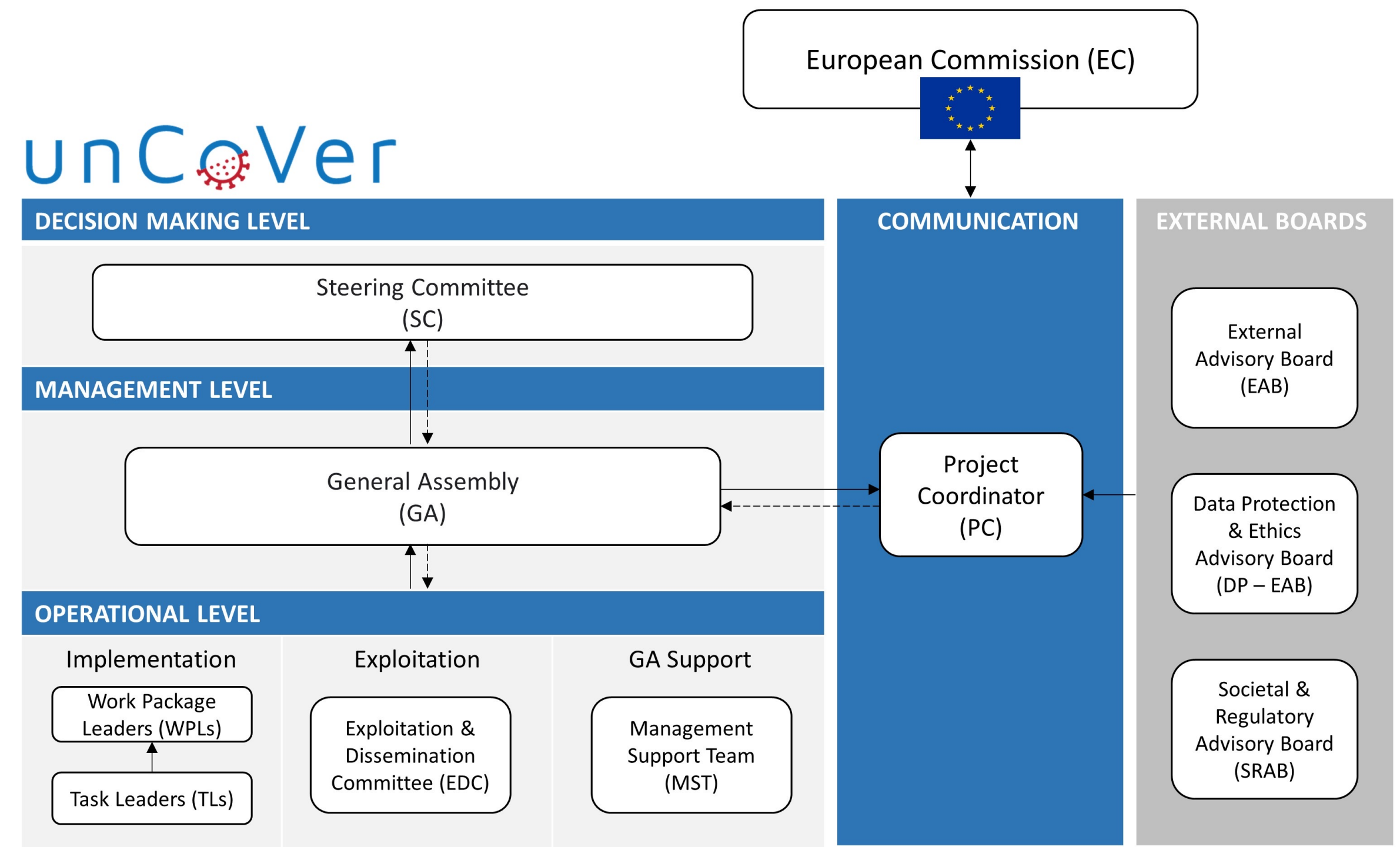
► To bring together expertise on the use of **advanced computational, epidemiological and biostatistical methods to handle heterogeneous**, and multi-layered information in order to facilitate rapid queries and robust findings related to

- **Vulnerable populations**
- **Underlying drivers of COVID-19 prognosis**
- **Safety and effectiveness of treatments, and sequelae**
- **Impact of COVID-19 in health system resources**



WP6 'Coordination'

► Governance structure



unCoVer



CONTACT

Email – info@uncover.com

Website – <https://uncover-eu.net/>



@uncoverEU



unCoVer Project