

PHIRI

Population Health Information
Research Infrastructure

Building a federated research infrastructure for a rapid policy response

Stakeholders' meeting January 14th, 2021

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ROBERT KOCH INSTITUT



Instituto Aragonés de
Ciencias de la Salud



This project has received
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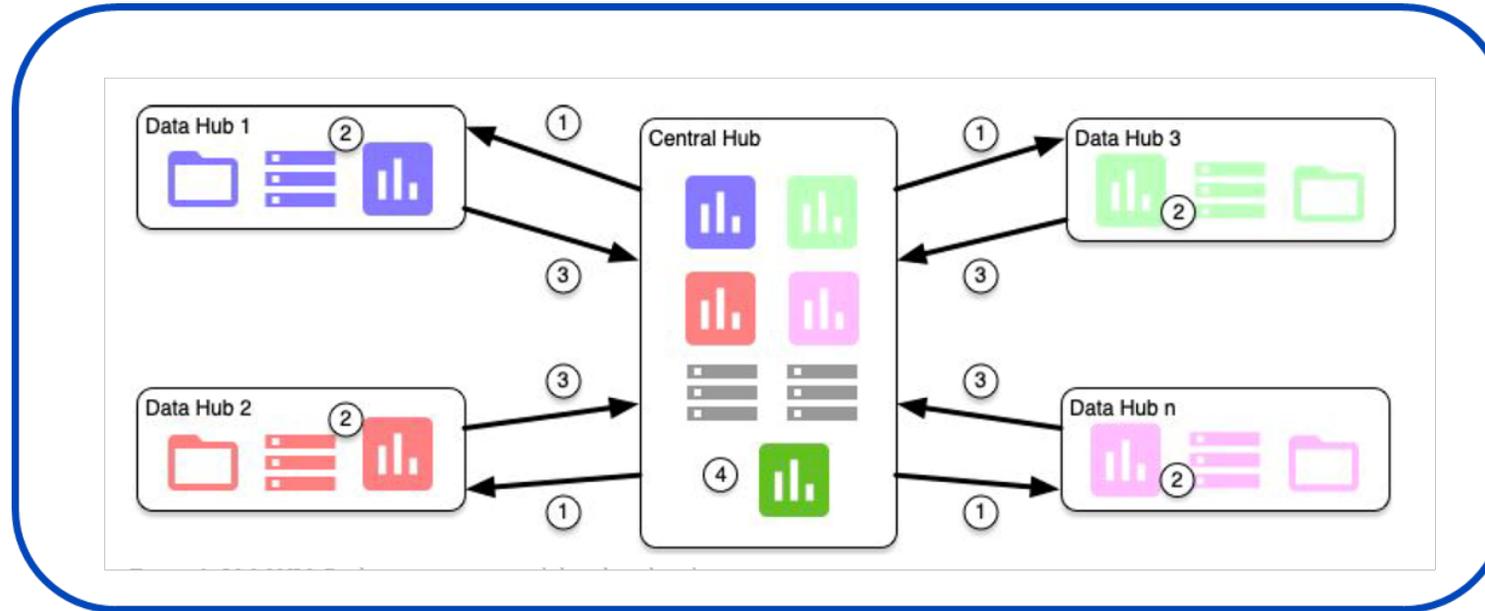
Outputs

- 1) A federated demonstration pilot on rapid cycle analysis on COVID19
 - Open source dashboard with trends and predictions on a number of measures
- 2) Validated solutions for a federated research infrastructure on COVID19
 - Based on use cases WP6 & demonstration pilot 7.1
 - Feeding PHIRI portal
- 3) A network of IT developers capable of sustaining and upgrading the FRI
 - Those technical people in the data hubs
 - Linked to capacity building activities in WP4

Developing a research infrastructure based on the secondary use of routine data



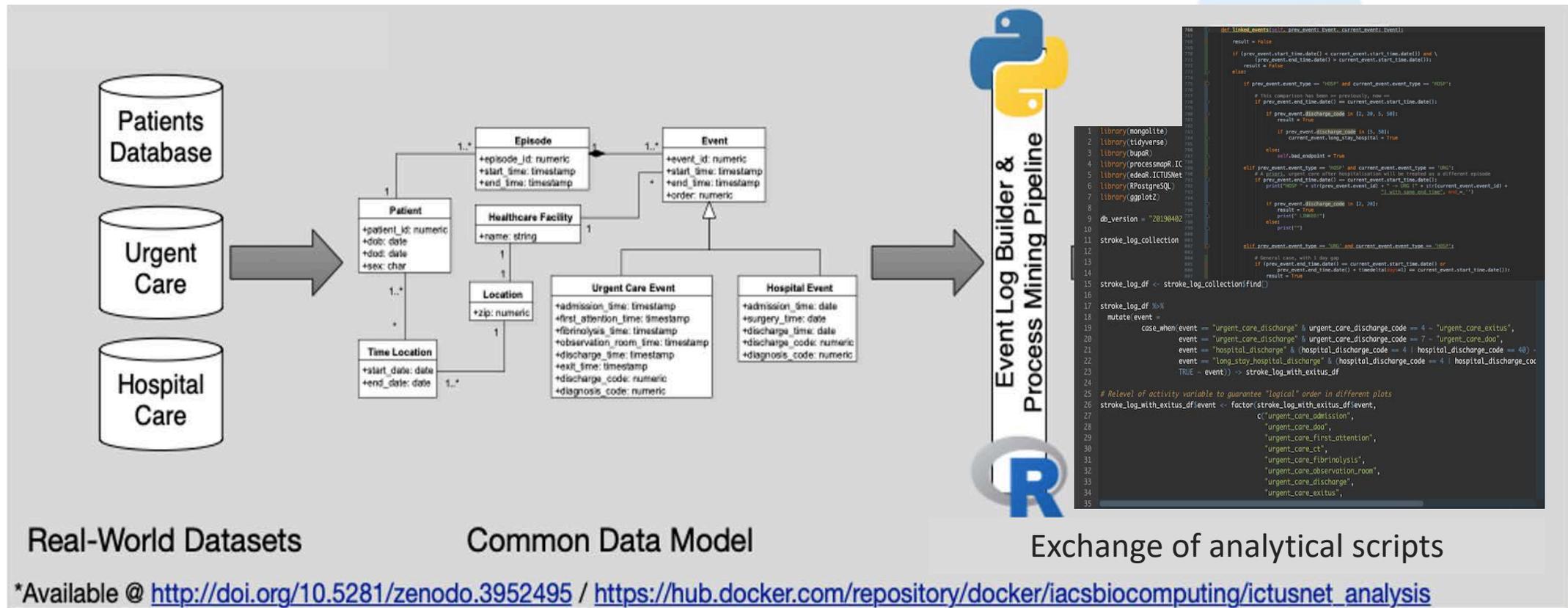
The architecture



- Privacy and safety by design
- No data motion across the FRI – just scripts move
- Data hubs host and curate data and/or have “easy” access to data
- Coordination hub: develops code, coordinates code exchange and supports hubs

Routine linkable data
Individual level (anonymised or pseudonymised)

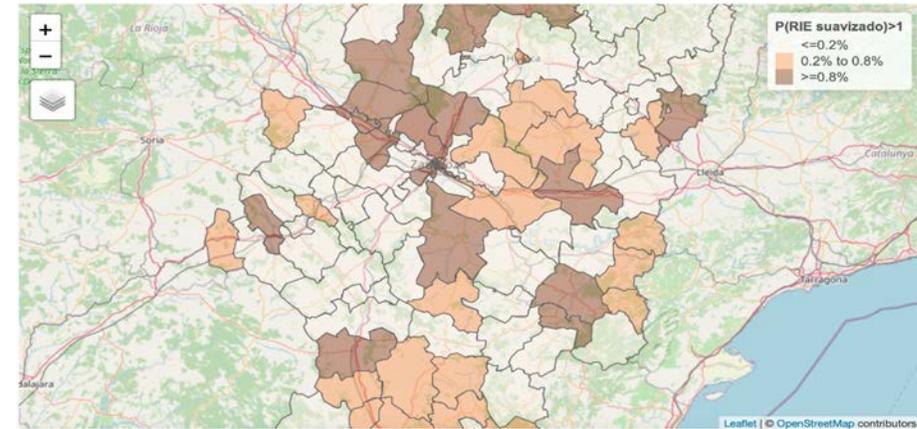
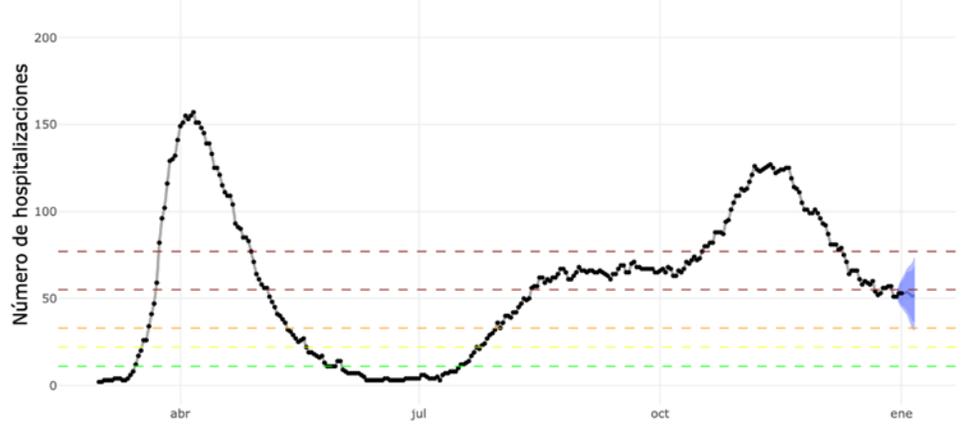
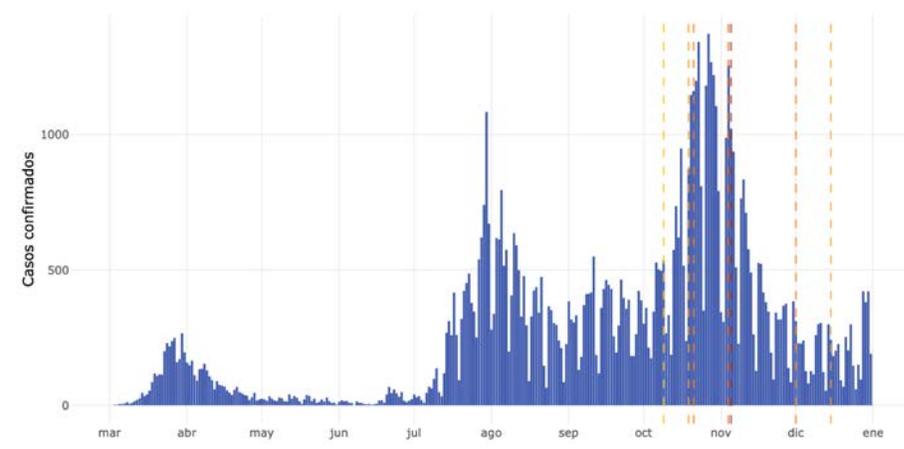
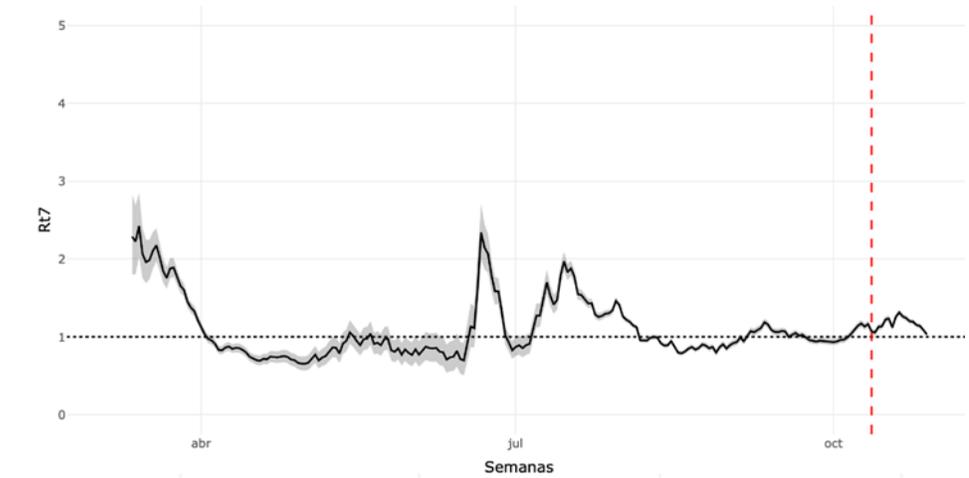
Qs



*Available @ <http://doi.org/10.5281/zenodo.3952495> / https://hub.docker.com/repository/docker/iacsbiocomputing/ictusnet_analysis

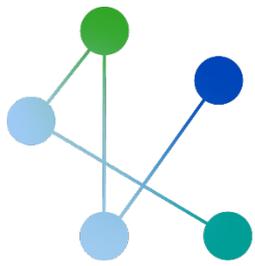


Demonstration pilot on rapid cycle analysis



WP6 use cases ...



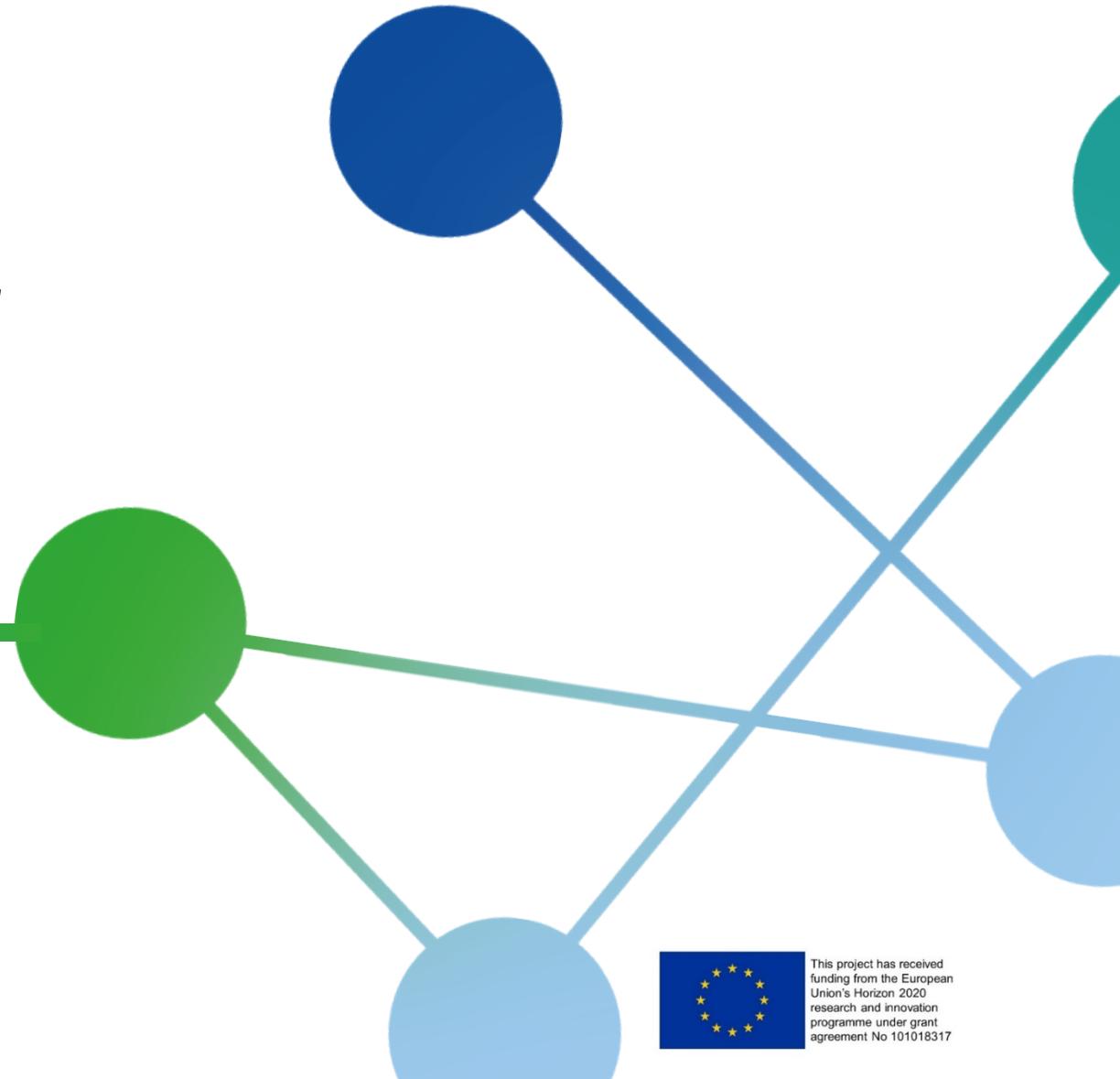


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Research use cases measuring the impact of COVID-19 on population health

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Objectives

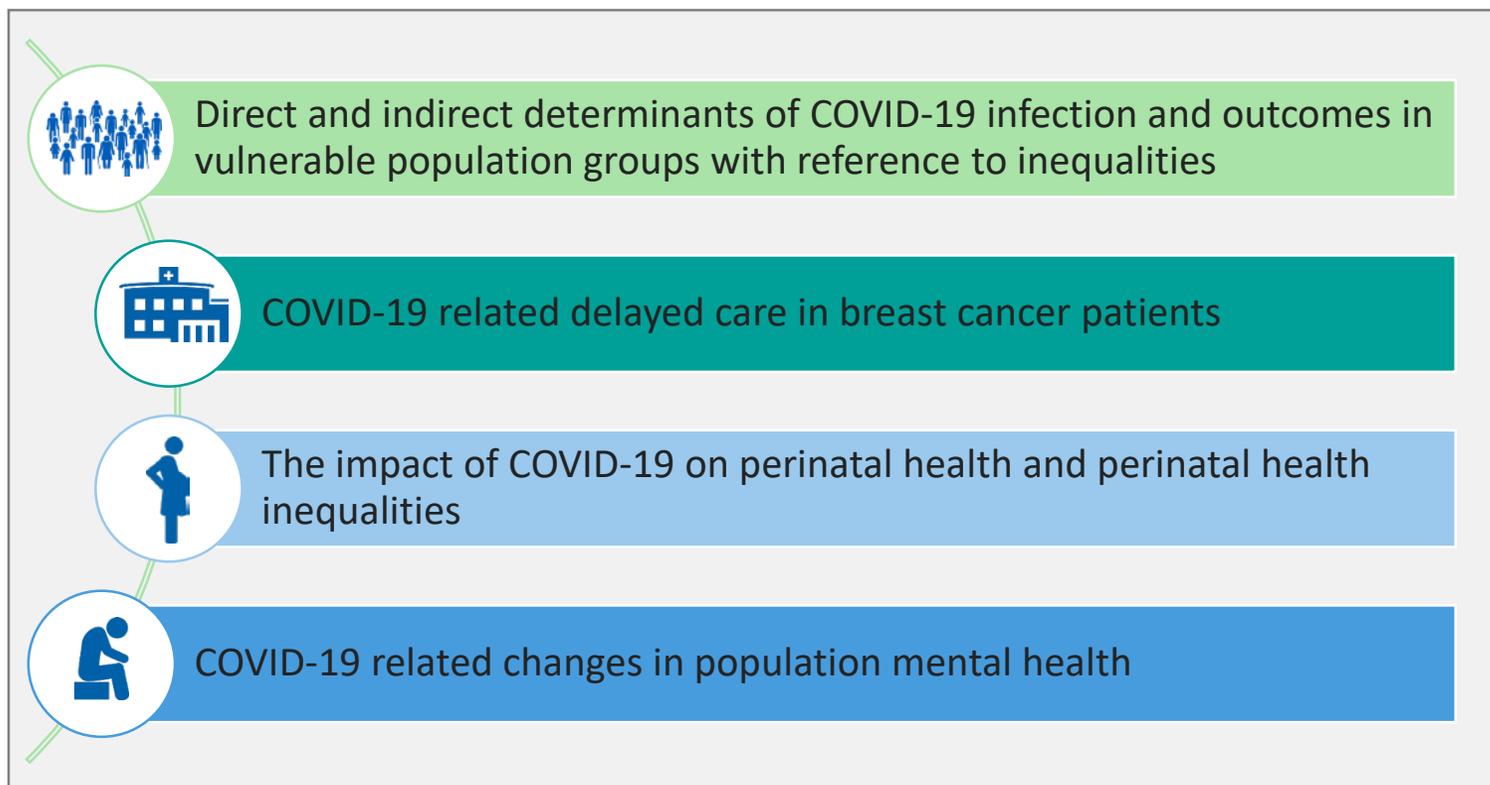
Research use cases measuring the impact of COVID-19 on population health

Demonstrate how a broad variety of secondary data (e.g. administrative and survey data) can be pooled and/or reused in a distributed way across Europe:

1. Conduct research through use cases of immediate relevance on the consequences of the COVID-19 pandemic on European population health
2. Pilot activities for the benefits and added value of a research infrastructure by bringing together data from different European countries and feeding the results into the federated research infrastructure

Topics

We will look at COVID-19 impacts in specific subgroups by conducting research through real life use cases of immediate relevance



The outputs of the use cases will be processed by formalising data models, data management processes and analytical pipelines in an interoperable way to **feed into the federated research infrastructure**



(Preliminary) Research Questions



1. Do area based deprivation measures, or individual measures of socioeconomic position, explain variations in SARS-COV2 infection rates, COVID19 health care **utilisation** and associated mortality between countries/settings?
2. Has the COVID19 pandemic changed existing socioeconomic patterns of non-COVID-19 health care **utilisation** and mortality within and between countries?



1. Has **utilisation** (surgery rates, primary or specialist care visits) change before and after the crisis?
2. The **number of Lumpectomy vs. Mastectomy** has changed?



1. Did access to and use of maternity and newborn **health services** decrease during the pandemic/lockdowns?
2. Were population indicators of maternal and newborn health affected by the pandemic/lockdown?
3. Did these effects differ across countries and by socioeconomic context?



1. Has the prescription of psychotropic drugs (antipsychotics, antidepressants, anxiolytics, and hypnotics) changed during the COVID-19 pandemic?
2. Has the number of visits to **emergency services** due to psychotic and bipolar disorders changed during the COVID-19 pandemic?
3. Has the number of **psychiatry visits** changed during the COVID-19 pandemic?
4. Do these effects differ across countries and by socioeconomic context?



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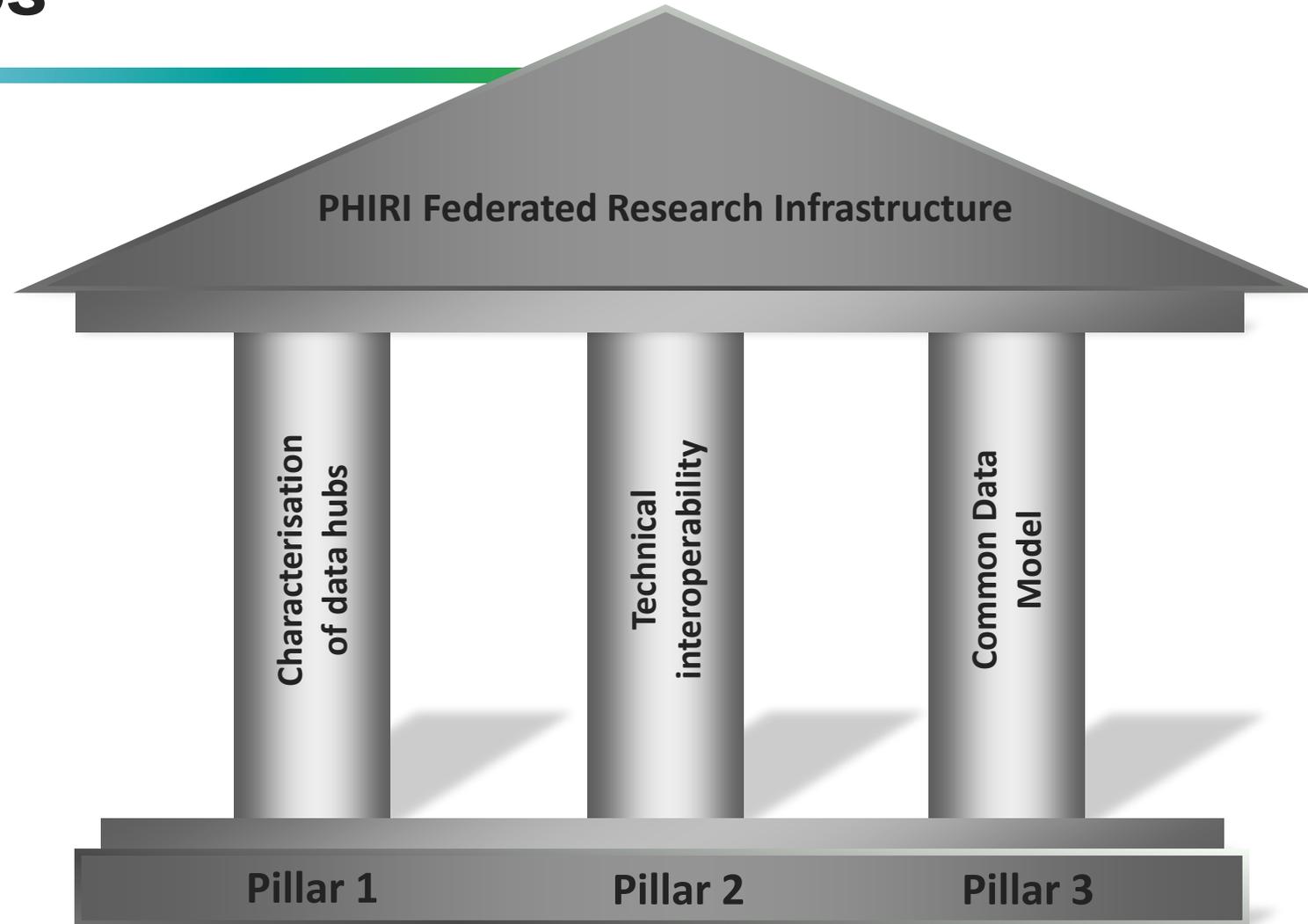


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Plans & Next Steps

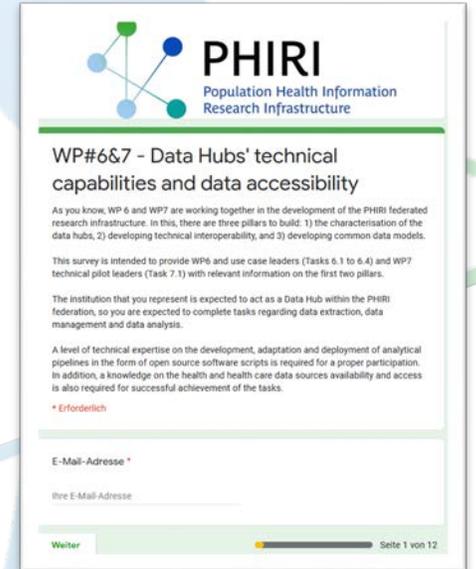
- WP6 and WP7 are working together in the development of the PHIRI federated research infrastructure
- There are three different pillars to build:
 - The first two of them tell us about the actual capacities of each data hub in terms of access to data and technical expertise
 - The third one is meant to achieve semantic interoperability throughout harmonising data differences across data sources and data hubs



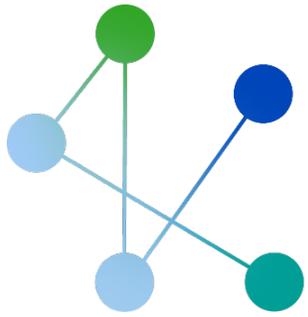
Plans & Next Steps

Two layer questionnaire:

1. Aims to get a better sense on the actual access to data and data hubs' capabilities
2. A second round survey, specific of each use case, to start off the process of harmonising data throughout a common data model



The screenshot shows a questionnaire page from PHIRI (Population Health Information Research Infrastructure). The title is 'WP#6&7 - Data Hubs' technical capabilities and data accessibility'. The text explains that WP 6 and WP 7 are working together to develop the PHIRI federated research infrastructure, with three pillars: 1) characterisation of data hubs, 2) developing technical interoperability, and 3) developing common data models. It states that the survey is intended to provide WP6 and use case leaders (Tasks 6.1 to 6.4) and WP7 technical pilot leaders (Task 7.1) with relevant information. The institution is expected to act as a Data Hub, completing tasks regarding data extraction, management, and analysis. A level of technical expertise in analytical pipelines and knowledge of health care data sources is required. A red asterisk indicates a required field. The form includes an 'E-Mail-Adresse' field and a 'Weiter' button. The page number is 'Seite 1 von 12'.



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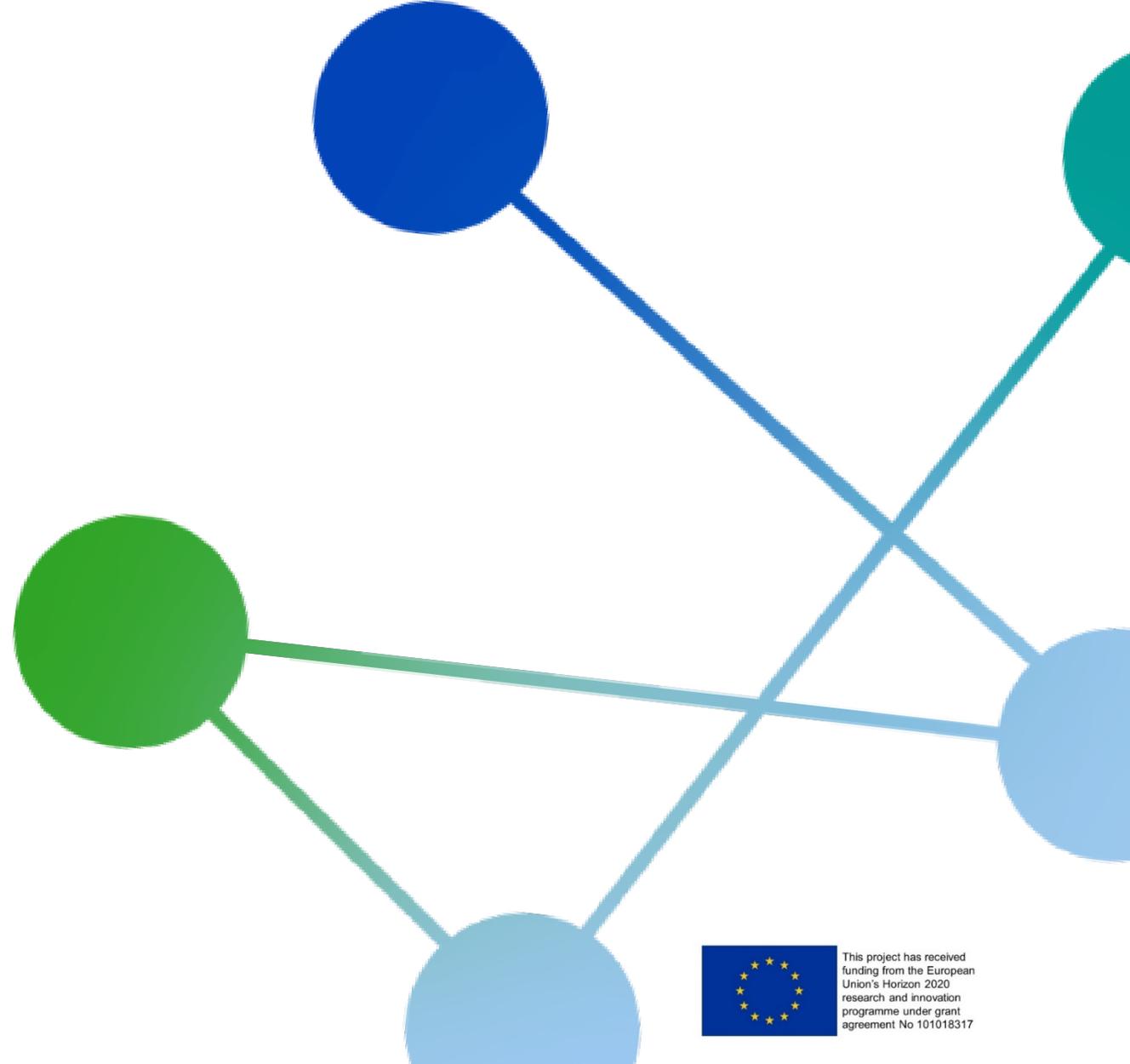
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