Building a federated research infrastructure for a policy-rapid response

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Background:
Mobilizing real world data from multiple data hubs in multiple countries to carry out policy-oriented research, requires orchestrating the governance of workflows, being compliant with legal and ethical requirements, and semantic harmonization and technological interoperability. In the context of PHIRI, policy-oriented research has to provide insight to policy-makers to cope with pandemics.

Methods:
PHIRI builds this concept on the deployment of four use cases throughout a federated research infrastructure. A central hub orchestrates all the elements encompassing the development of such an infrastructure; so, a common governance model, common methodology pursuing semantic interoperability, and the development and deployment of technological solution containing ETL processes, data quality assessment solutions and data analyses, all packaged to be rolled out in the different data hubs composing the federation.

Results:
A prototype orchestrating those workflows is being followed in four use cases: indirect effects of the pandemic on vulnerable populations, delayed breast cancer treatments due to the pandemic, perinatal health affections along the COVID19 crisis, effects of the pandemic on mental health care. A prototype of the technological platform supporting interoperable federated analyses has been prepared.

Conclusions:
It is pertinent, feasible and reliable using a federated research infrastructure leveraging real world data from many data hubs in many countries to answer research queries on the COVID19 pandemic.