

PHIRI

Population Health Information
Research Infrastructure

Research methodologies to assess the impact of COVID-19

PHIRI Road Show, 8 april 2022

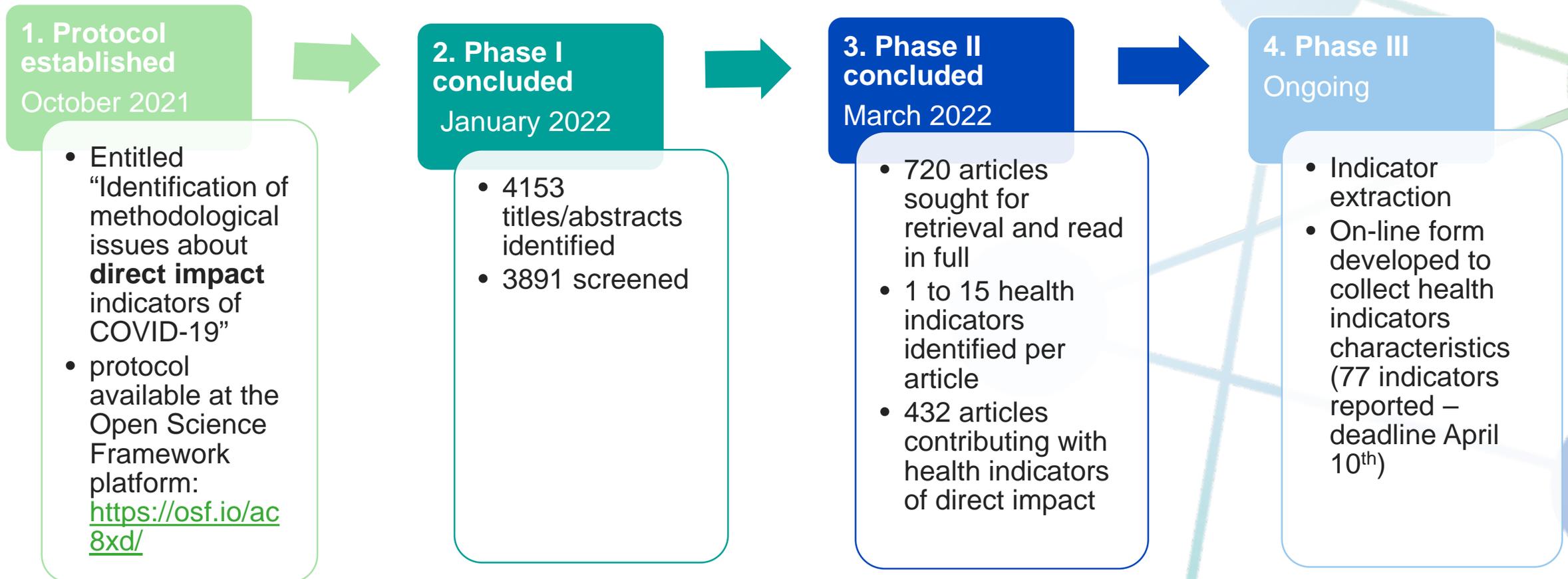
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Aim & methodology

To support European countries to understand the impact of COVID-19 on population wellbeing and health, morbidity and mortality, by

1. mapping and synthesizing **methodologies and data pathways** of COVID-19 impact research
2. exploring **the determinants of the severity** of long-term health outcomes of SARS-CoV-2
3. mapping **digital tools and innovative solutions** addressing the covid-19 pandemic
4. **building capacity** on COVID-19 impact assessment

Methodologies and data pathways of COVID-19 impact research



Methodologies and data pathways of COVID-19 impact research

- More than 16 000 / 20 000 records from PubMed screened
- Draft version of the roadmap on indicators, methodologies, data pathways and need across Europe published (October 2021)
- 13 researchers trained for using an online tool to share a manage literature reviews (<https://www.rayyan.ai>)
- 116 different types of indicators identified from a sample of 35 (8.1%) papers
 - 28 related to morbidity
 - 32 related to mortality
 - 54 related to severity
 - 2 composite indicators of severity and mortality

Determinants of severity

Objectives:

- To assess the **etiologic role of frailty, multimorbidity and socioeconomic status** on the risk of SARS-CoV-2 short term outcomes (infection, hospitalisation, ICU admission, mechanical ventilation or death).
- To evaluate the **prognostic value of above determinants** regarding short-term and long-term health impact of Covid-19 such as functional decline, quality of life, mental health, survival, work absenteeism, etc.

Determinants of severity

- 4 databases explored (PubMed, Embase, WHO COVID-19 Global literature on coronavirus disease and PsycINFO)
- 10 139 titles retrieved and screened by title and abstract
- 411 articles read in full text
- 16 studies on multimorbidity, 3 on frailty, 87 on socioeconomic characteristics used for data extraction
- Final set of studies evaluated for quality using Newcastle-Ottawa scales
- Data extracted in customised excel tables (separated by objective, risk factor and outcome)

Nb Screening and data extraction process performed by 2 reviewers in parallel

Determinants of severity

- Declaration of the protocol to Prospero (April 2021)
- Much fewer evidence for biomedical risk factors (frailty and multimorbidity) compared to socioeconomic
- Short term outcomes such as death or intensive care admissions most often identified
- Multimorbidity mainly observed through diseases count presenting worse outcomes with increasing number of diseases
- Very few information regarding frailty (3 studies). An update is ongoing
- Worse outcomes are observed in low socioeconomic groups, low educational level and some ethnicities/races such as among Asian and Black people

Efficacy of new digital tools

Two approaches:

- A **systematic review** has been performed through 8 online databases. Over 8000 records were retrieved and assessed, inclusion of 58 full texts
- **Survey on digital tools** and innovative solutions (including contact tracing, monitoring and warning apps; digital tools for diagnostics, treatments and vaccines; online platforms fighting disinformation)
December 2021- March 2022
 - 16 countries responded to the survey, with a total of 19 complete surveys

Efficacy of new digital tools

First results:

- There are population-based contact tracing and modelling studies with real-world data or hypothetical populations comparing different strategies (no intervention, lockdown, social distancing without contact tracing, etc.)
- Effectiveness of digital contact tracing is demonstrated as proportion of close contacts of confirmed or suspected COVID-19 cases identified, reduction of effective reproduction number or reduction of covid-19 infections
- Data from survey will be analyzed in vcoming months

Capacity building activities

Passed capacity building events

- Feb 15 2022: [Webinar on Digital and Innovative Tools: The Challenges of Contact Tracing in Public health](#)
- Mar 30 – Apr 1 2022: [COVID-19 Burden of Disease Training School](#) in collaboration with the European Burden of Disease COST Action

Planned capacity building events

- Workshop on systematic reviews
 - Target audience: PHIRI consortium partners
- Workshops on COVID-19 impacts assessments
 - Target audience: PHIRI consortium partners + other interested parties



Burden of disease school: 27 participants; 3 trainers