

INPLASY202380064

doi: 10.37766/inplasy2023.8.0064

Received: 15 August 2023

Published: 15 August 2023

**Corresponding author:**

Roberto Duran-Fernandez

roberto\_duran@tec.mx

**Author Affiliation:**

Tec de Monterrey.

Duran-Fernandez; R<sup>1</sup>; Bernal-Serrano, D<sup>2</sup>; Garcia-Huitron, A<sup>3</sup>; Hububessy, RCW<sup>4</sup>.**ADMINISTRATIVE INFORMATION****Support** - None.**Review Stage at time of this submission** - Preliminary searches.**Conflicts of interest** - None declared.**INPLASY registration number:** INPLASY202380064**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 15 August 2023 and was last updated on 15 August 2023.**INTRODUCTION**

**Review question / Objective** (i) To what extent are peer-reviewed studies addressing PPR financing and related topics? (ii) What is the main focus of the PPR financing literature in terms of topics, scope, and research objectives? (iii) What specific proposals and financing instruments are being discussed in the literature?

**Rationale** The COVID-19 pandemic stands as one of the deadliest emergencies in modern history, with a global death toll exceeding 14.9 million people. Beyond the tragic loss of life, the pandemic has wrought staggering economic damage, with some studies estimating the impact at US\$16 trillion in the United States alone. The World Bank and WHO have identified an annual investment need of US\$31.1 billion for a future PPR system. Despite the evidence, the international community has yet to establish a

comprehensive PPR financing framework capable of managing future outbreaks.

Understanding PPR financing at a global level is more urgent than ever. Recognising this need, we conducted a systematic review to collate and summarise evidence from recent global experiences. Our review explores the strategies, success cases, challenges, and opportunities that have emerged in recent years. The objective of this review is to identify approaches that aim to close existing gaps in PPR financing and reduce the risk of another pandemic with social and economic costs comparable to those of COVID-19. Through this, we aim to provide insights that contribute to a more resilient and responsive global framework for PPR financing based on evidence and theory from a multidisciplinary approach.

**Condition being studied** This review aims to study the financing, funding, and investment strategies related to Pandemic Prevention,

---

Preparedness, and Response at a global or international level.

## METHODS

**Search strategy** ScienceDirect, PubMed and EconLit. We restricted our search to articles published after 1900, only articles with keywords in English or those with at least an abstract in English will be retrievable. The terms searched were: "pandemic," "preparedness," "response," "financing," "finance," and "funding." Articles in journals in Q3 or Q4 according to SCIMAGO will not be considered.

**Participant or population** All articles assessing features of financing, funding or investment on Pandemic Prevention, Preparedness, and Response will be included with a focus on a global or international level. We will not include single country experiences or cases, neither subnational research. Systematic review will not be limited to the COVID-19 experience. Nevertheless, we plan to include a broad range of participants/populations, regardless of their age, settings, and location. No restrictions will be placed on the population of study. Searches will apply to studies affecting the general population and no specific demographic or epidemiologic group. However, there is a geographical restriction, individual country studies and single-case analyses have been excluded. All articles assessing features of financing, funding or investment on Pandemic Prevention, Preparedness, and Response will be included with a focus on a global or international level. We will not include single country experiences or cases, neither subnational research. Systematic review will not be limited to the COVID-19 experience. Nevertheless, we plan to include a broad range of participants/populations, regardless of their age, settings, and location.

**Intervention** This review is slightly different from traditional systematic reviews of interventions. The research team is not directly evaluating the use of any intervention on a specific health-related topic. Notwithstanding, we aim to verify the potential applicability, impact, challenges, and opportunities of several concepts related to Pandemic Prevention, Preparedness, and Response.

**Comparator** We will accept any kind of comparators or control groups, including the comparison with appropriate go. Furthermore, we will focus on studies that address any funding or investment topic related to Pandemic Prevention, Preparedness, and Response. Studies will be

compared to non-pandemic health response including, but not limited to, primary care funding and universal health care funding.

**Study designs to be included** We will include research articles, systematic reviews and discussions published in paired review journals.

**Eligibility criteria** For this systematic review, we selected peer-reviewed research articles, reviews, and discussions centered on PPR financing at both global and regional levels. We excluded individual country studies and single-case analyses. The inclusion criteria were tailored to prioritize papers where PPR financing is either the primary subject or is examined in depth.

**Information sources** We aim to conduct a three-stage search for relevant publications across ScienceDirect, PubMed, and EconLit. We aim to target research articles, review articles, and discussions in peer-reviewed journals. No grey literature will be included.

**Main outcome(s)** We aim to evaluate which are the main topics and scope of academic literature regarding Pandemic, Preparedness and Response with a special focus on specific financial and investment proposals to close existing gaps. Our systematic review is expected to identify papers that propose or discuss specific PPR financing instruments, including public policy tools, public-private partnerships, and common good investment funding to address pandemics and their effects on the population. We expect to identify discussion about the role of the leading global funding mechanisms: the World Bank Pandemic Fund, ACT-A, and the IMF Resilience and Stability Trust. We also expect to find any relation between SDG 3.8 Universal Health Coverage (UHC), global health security and PPR. Furthermore, the study aims to understand if literature identifies in-depth, objective assessment on the impact of PPR financing on key health outcomes during the pandemic such as mortality rates. This entails a meticulous evaluation of in-depth, objective assessments within the existing literature that provide a holistic understanding of how PPR financing mechanisms influence health outcomes during pandemic scenarios. The WHO's Economic Council for 'Health for All' affirms that the link between economics, finance, and health is essential to deliver health for all. This research is relevant for human health, as a better understanding of current PPE financing knowledge and gaps is the first step to propose and design public health interventions to avoid the

unnecessary deaths of millions, as we experienced during the COVID-19 pandemic.

**Additional outcome(s)** None.

**Data management** We will conduct a three-stage search for relevant publications across ScienceDirect, PubMed, and EconLit, focusing on the keywords: "pandemic," "preparedness," "response," "financing," "finance," and "funding." In ScienceDirect, we will target research articles, review articles, and discussions with the following search strategy:

#1 "pandemic preparedness and response" AND ("financing" OR "finance" OR "funding")

#2 "pandemic prevention preparedness and response" AND ("financing" OR "finance" OR "funding")

In PubMed, we will include all papers found, without applying finance-related filters. EconLit will require a more flexible search strategy, wherein keywords will be sought in any order of appearance. This approach will accommodate the unfamiliarity of economic literature with terms commonly used in medical literature. While our search will not have further restrictions, only articles with keywords in English or those with at least an abstract in English will be retrievable. After removing duplicates, an author will independently screen the titles, abstracts, keywords, and full texts to ascertain eligibility.

Three authors will participate in the implementation of this strategy, along with a non-authored researcher.

Extracted information for ScienceDirect will include: Author, Title, Type of Publication, Journal and publication details, DOI, Abstract, Study Design, Methods, Results, Geographical Scope, publication date, PPR Interventions, Outcomes of Interest, and Conclusions. For PubMed: Complete Citation, Geographical Scope, publication date, PPR Interventions, Outcomes of Interest; For EconLit: Title, Author, Source, Publication, Abstract, ISSN, DOI, Keywords, Geographical Scope, publication date, PPR Interventions, Outcomes of Interest. We will compile a database with these data: Source Database, Search, Type of Paper, Author, Title, Journal, Journal SciMago Quartile, Journal H Score, Year, Type of Paper, Abstract, Short Description, Geographical Scope, publication date, PPR Interventions, Outcomes of Interest, Full Citation in APA and NLM.

**Quality assessment / Risk of bias analysis** Given the qualitative nature of the studies, traditional quantitative risk of bias assessment tools, such as the Cochrane risk of bias tool, are not directly applicable. However, we will adopt a rigorous

approach to ensure the reliability and credibility of the studies we include. The assessment of study quality will primarily focus on the source credibility. All selected journals will be ranked within the Q1 or Q2 quartiles

To maintain objectivity and precision in the evaluation process, we will adhere to a thorough and systematic procedure. All aspects of the review process, including database searches, inclusion evaluations, summarized results, and classifications, will be independently assessed by at least two authors. In cases where disagreements arise, a third author will be consulted to facilitate consensus and resolve any discrepancies.

The focus of our quality assessment will be on source credibility, relevance to the research question, and the robustness of the methodology adopted within each study. Given the inherent subjectivity of qualitative research, our goal is to ensure that the studies included in the review contribute substantively to our research objectives while upholding a certain standard of academic rigor.

**Strategy of data synthesis** The synthesis method will be based on a structured narrative of the features of the selected reviews. An independent researcher will extract the general characteristics of each study and will compile this information into a database. This database will encompass essential details such as authors, title, keywords, and abstract. An author will then summarise the primary findings of each paper, drawing from both the abstract and, in cases where conclusions are absent, the discussion section. Summary tables will be created to enhance comprehension and underscore the current state of research. To ensure consistency, each paper will be assessed against specific eligibility criteria: the study will have to focus on either a global perspective or a regional analysis that includes experiences from two or more countries. Furthermore, it will be evaluated whether financing is the primary topic or if it is discussed extensively.

**Subgroup analysis** None planned.

**Sensitivity analysis** None planned.

**Language restriction** We restricted our search to articles published after 1900, only articles with keywords in English or those with at least an abstract in English will be retrievable.

**Country(ies) involved** Mexico, Tec de Monterrey; USA Independent Research; Switzerland WHO.

---

**Other relevant information** None.

**Keywords** pandemic; prevention; preparedness; response; finance; funding; financing.

**Dissemination plans** The review is intended to be published in a peer-reviewed journal.

**Contributions of each author**

Author 1 - Roberto Duran-Fernandez - Designed Methodology; Search papers; Selected papers; Summarize papers; Drafted manuscript.

Email: roberto\_duran@tec.mx

Author 2 - Daniel Bernal-Serrano - Designed Methodology; Selected papers; Summarize papers; Reviewed manuscript.

Email: dbernal@tec.mx

Author 3 - Alberto Garcia-Huitron - Designed Methodology; Selected papers; Summarize papers; Reviewed manuscript.

Email: alberto.g.huitron@gmail.com

Author 4 - Raymond Hutubessy - Reviewed manuscript; Provided feedback and approved the final manuscript.

Email: hutubessyr@who.int