

# INPLASY PROTOCOL

To cite: Wu et al. Innovations during the COVID-19 pandemic. Inplasy protocol 2021110102. doi: 10.37766/inplasy2021.11.0102

Received: 28 November 2021

Published: 28 November 2021

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**Support:** None.

**Review Stage at time of this submission:** Data analysis - Completed but not published.

**Conflicts of interest:**  
None declared.

## Innovations during the COVID-19 pandemic

Wu, TC<sup>1</sup>; Ho, BCT<sup>2</sup>.

**Review question / Objective:** (1)The features of innovation in the healthcare system during the COVID-19 era; (2)Explore the innovative solutions in different thematic categories in the healthcare system.

**Condition being studied:** Existing studies of innovation in the healthcare system have typically focused on technology, it does not cover all kinds of innovation.

**Eligibility criteria:** (1) articles that describe innovative ideas, solutions or experience in the healthcare system during the COVID-19 crisis(2) articles that researched innovation issues in the COVID-19crisis.

**INPLASY registration number:** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 28 November 2021 and was last updated on 28 November 2021 (registration number INPLASY2021110102).

### INTRODUCTION

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### METHODS

**Search strategy:** Literature search on PubMed and Web of Science (WOS) of

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articles related to COVID-19 and innovation limited to the timespan from January 1 to December 30, 2020. We searched the PubMed and WOS database using the following search terms and database-appropriate syntax: “COVID-19” or “Novel virus” or “Coronavirus” or “2019-nCoV” or “SARS-CoV-2 Virus” and “Innovation”. The filters: “Full text”, “English”, “from 2020-2020”, were applied in PubMed. The filters “2020” and “article” were applied in WOS.

**Participant or population:** Healthcare system.

**Intervention:** COVID-19 disruption.

**Comparator:** Pre-COVID innovation.

**Study designs to be included:** No limitations.

**Eligibility criteria:** (1) articles that describe innovative ideas, solutions or experience in the healthcare system during the COVID-19 crisis (2) articles that researched innovation issues in the COVID-19 crisis.

**Information sources:** PubMed and Web of Science (WOS).

**Main outcome(s):** A total of 405 articles were identified through PubMed and 405 articles through WOS. Duplicated records (n=171) were excluded and 639 articles remained. Following the inclusion and exclusion criteria, we were able to collect 296 articles related to innovation and COVID-19.

**Data management:** We applied content analysis to gain insights from the articles collected.

**Quality assessment / Risk of bias analysis:** Not Applicable. Content analysis for all the articles collected.

**Strategy of data synthesis:** A total of 613 statements considered related to innovation were obtained and recorded. The 613 statements were grouped into higher order categories by collapsing those that are similar. Finally, we named each

category of innovation using content-characteristic words and generated types of innovation.

**Subgroup analysis:** Eight subtypes of technological innovation.

**Sensitivity analysis:** Not applicable.

**Language:** No limit.

**Country(ies) involved:** Taiwan.

**Keywords:** Innovation, COVID-19, Healthcare system, Technological innovation, Frugal innovation, Repurposing.

**Contributions of each author:**

Author 1 - Tzu-Chi Wu - Drafted the manuscript.

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Author 2 - Bruce Chien-Ta Ho - Revised it critically for important intellectual content.