

# INPLASY PROTOCOL

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**Corresponding author:**  
Benjamin Anderson

ander88@ufl.edu

**Author Affiliation:**  
University of Florida.

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None declared.

## The Epidemiology of Human Respiratory Viruses in Indonesia: A Systematic Review

Bhattarai, S<sup>1</sup>; Chee, HY<sup>2</sup>; Japri, AP<sup>3</sup>; Wiyarta, E<sup>4</sup>; Anderson, BD<sup>5</sup>.

**Review question / Objective:** To identify published articles related to the epidemiology of human respiratory viruses in Indonesia.

**Condition being studied:** Viral respiratory disease among humans in Indonesia.

**Eligibility criteria:** The inclusion and exclusion criteria for English and Indonesian language journal articles included published scientific journal entries which were also epidemiological investigations or clinical case reports conducted on humans in Indonesia. All reviews, commentaries, perspectives, and personal opinions were excluded, along with any entry that was a diagnostic assay evaluation.

**INPLASY registration number:** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 03 November 2022 and was last updated on 03 November 2022 (registration number INPLASY2022110015).

### INTRODUCTION

**Review question / Objective:** To identify published articles related to the epidemiology of human respiratory viruses in Indonesia.

**Rationale:** In Indonesia, viral pathogens greatly contribute to a higher respiratory disease burden, though epidemiologic and surveillance data for viral respiratory infections are sparse.

**Condition being studied:** Viral respiratory disease among humans in Indonesia.

## METHODS

**Search strategy:** Following PRISMA guidelines, a systematic online search of English and Indonesian language databases was conducted.

For the English journals, a search of three scientific abstract indexing databases (PubMed, Web of Science, and CAB Abstracts), with no restriction on the year of publication, was performed on 9 March 2022 using the following structured search query ((virus or viruses or viral) AND (respiratory) AND (Indonesia)).

For the Indonesian language journals, a search of the Garuda database, with no restriction on the year of publication, was performed on 9 March 2022. Garuda is a comprehensive database operated by the Indonesian Ministry of Research, Technology and Higher Education, which contains national publications from all universities in Indonesia. Given that the database lacked the functionality to use a multi-string structured search query, the single term “virus” was instead used. Thereafter, a manual review and selection strategy was performed based on the inclusion and exclusion criteria.

**Participant or population:** Individuals who are part of epidemiological investigations, surveillance activities, or case reports.

**Intervention:** N/A.

**Comparator:** N/A.

**Study designs to be included:** Prospective Retrospective Cohort, Cross-sectional, or Case Series.

**Eligibility criteria:** The inclusion and exclusion criteria for English and Indonesian language journal articles included published scientific journal entries which were also epidemiological investigations or clinical case reports conducted on humans in Indonesia. All reviews, commentaries, perspectives, and personal opinions were excluded, along with any entry that was a diagnostic assay evaluation.

**Information sources:** PubMed, Web of Science, and CAB Abstracts was searched for English language articles Garuda was searched for Indonesian language articles.

**Main outcome(s):** For English language journals, a search conducted on 9 March 2022, yielded a total of 939 results, of which 321 publications were from PubMed, 117 from Web of Science, and 501 from CAB Abstracts. After removing 488 duplicates, titles and abstracts of the 451 remaining articles were screened and 275 were excluded. A full text review of the remaining 176 articles, resulted in 72 articles being excluded, leaving 104 articles (Figure 1). For the Indonesian language journals, a search conducted on 9 March 2022 yielded 15,667 publications from Garuda. After removing 15,430 articles that were not related to respiratory viruses, the titles and abstract of the remaining 237 articles were screened. An additional 93 duplicate articles were removed. The remaining 144 publications underwent full text evaluation of which 140 articles did not meet the inclusion criteria and were excluded, leaving four articles. Of these four articles, two were also included in the English language search results. Therefore, the total combined number of included articles from all databases was 106. Articles included in this review were published between 1998 and 2022. Only one of the 106 (0.9%) articles was published between 1998 and 2000, 15 of the 106 (14.2%) articles were published between 2001 and 2010, and the remaining 90 (84.9%) articles were published between 2011 and 2022 (Figure 4).

Of the 106 articles, 59 (55.7%) were conducted on coronavirus, with 57 (53.8%) focused on SARS-CoV-2 and two (1.9%) studies evaluating MERS-CoV. There were 38 (35.8%) articles that studied influenza viruses, where 21 (19.8%) were focused on influenza A or B virus and 17 (16%) on avian influenza H5N1 virus. Five (4.7%) of the 106 articles studied RSV and 2 (1.9%) studied enterovirus (one human rhinovirus and one coxsackievirus); while one (0.9%) study examined torque teno virus and one (0.9%) study.

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**Quality assessment / Risk of bias analysis:**

For the English language journals, articles from the three databases were first screened by two reviewers (SB and HY) to remove all duplicates. Articles were then independently evaluated and sorted by the same two reviewers based on the inclusion and exclusion criteria. Both reviewers then reconciled search results together to determine the final list of entries. For the Indonesia language journals, two reviewers (AP and EW) worked independently to screen the entries according to the inclusion and exclusion criteria. Both reviewers then reconciled search results together to determine the final list of entries.

**Strategy of data synthesis:** Data was summarized in tabular form identifying study type, location, pathogen of focus, sample size, and primary findings.

**Subgroup analysis:** N/A.

**Sensitivity analysis:** N/A.

**Language restriction:** Articles in English or Indonesian were included.

**Country(ies) involved:** Indonesia, United States, China.

**Keywords:** Indonesia; epidemiology; respiratory virus; surveillance; SARS-CoV-2.

**Contributions of each author:**

**Author 1 - Sankalpa Bhattarai - SB** conducted the systematic literature search for English language databases and wrote sections of the manuscript.

Email: sankalpabhattarai88@gmail.com

**Author 2 - Hsien-Yao Chee - HYC** conducted the systematic literature search for English language databases and wrote sections of the manuscript.

Email: hsienyao.chee@dukekunshan.edu.cn

**Author 3 - Andrew Japri - APJ** conducted the systematic literature search for the Indonesian language database and wrote sections of the manuscript.

Email: andrew.prasettya@gmail.com

**Author 4 - Elvan Wiyarta - EW** conducted the systematic literature search for the Indonesian language database and wrote sections of the manuscript.

Email: elvanwiyarta@gmail.com

**Author 5 - Benjamin Anderson - BDA** contributed to conception and design of the study, validated search results, and supervised manuscript development.

Email: ander88@ufl.edu