

# INPLASY PROTOCOL

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## Prediction models for prognosis of influenza infection: a literature review

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**Support:** 2017JY0334.

**Review Stage at time of this submission:** Piloting of the study selection process.

**Conflicts of interest:**  
None declared.

**Review question / Objective:** P:Adult I:Patients with influenza who have bad prognosis C: Patients with influenza who have good prognosis O:Risk of disease due to the influenza S:Prospective/Retrospective cohort study, RCT, etc.

**Condition being studied:** Influenza infection. We have developed research topics and search strategies to proceed with further article processing.

**Information sources:** PubMed, Web of science, EMBASE, Cochrane Library, Google scholar, CNKI, Wanfang and VIP

**INPLASY registration number:** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 16 February 2021 and was last updated on 16 February 2021 (registration number INPLASY202120047).

### INTRODUCTION

**Review question / Objective:** P:Adult I:Patients with influenza who have bad prognosis C: Patients with influenza who have good prognosis O:Risk of disease due

to the influenza S:Prospective/Retrospective cohort study, RCT, etc.

**Rationale:** Worldwide, influenza has long been a threat to public health. Early recognition of patients with potentially

worse outcomes is important in the emergency department.

**Condition being studied:** Influenza infection. We have developed research topics and search strategies to proceed with further article processing.

## METHODS

**Search strategy:** #1 influenza OR human influenzas OR Flu OR Grippe #2 diagnostic OR imaging OR prognostic OR prognosis OR prediction OR prediction model OR mortality OR regression OR score OR artificial intelligence OR algorithm OR deep learning OR machine learning #3 APACH II OR PSI OR CURB-65 OR SOFA OR qSOFA OR SAPS #4 english NOT animal NOT children NOT child NOT pediatric NOT pediatrics NOT pregnant NOT pregnant woman NOT pregnant women NOT pregnancy NOT gravida NOT gravidity NOT meternal #1 AND #2 AND #3 AND #4.

**Participant or population:** Adult.

**Intervention:** Patients with influenza who have bad prognosis.

**Comparator:** Patients with influenza who have good prognosis.

**Study designs to be included:** Prospective/ Retrospective cohort study, RCT, etc.

**Eligibility criteria:** We will collect all cross-sectional studies that predict or analyzed the admission and death of patients with human influenza. The study includes adolescent participants and children or pregnant women doesn't meet the inclusion criteria. Animal studies, cadaver studies, case reports, comments, letters, protocols, guidelines, unpublished articles, and review papers will be excluded. No matter where the articles come from, We only review articles in english. Participants who are included in the articles we selected should be diagnosed with an infection of influenza like H1N1.

**Information sources:** PubMed, Web of science, EMBASE, Cochrane Library, Google scholar, CNKI, Wanfang and VIP.

**Main outcome(s):** We aimed to systematically review and critically appraise currently available prediction models for influenza, in particular prognostic models for the disease.

**Additional outcome(s):** The the Grading of Recommendations, Assessment, Development and Evaluation(GRADE) assessment tool will be used for conducting an appraisal of the studies' methodological quality. Every selected study will be evaluated by 2 reviewers independently, a third one as a consulter. The GRADE evaluation system included bias risk; heterogeneity; indirectness; imprecision; publication bias. And each level of evidence is divided into "very low", "low", "moderate", or "high" judgment.

**Data management:** Two of three reviewers will extract the data from eligible studies, putting them into the pre-specified form that we make in advance: author information, study area, study time, study type, study design, setting of study, sample size, participant characteristics, primary and secondary outcomes(needng for mechanical ventilation, needng for ICU care, or dead), AUC(Area Under Curve). An another researcher will solve the divergence between the first two reviewers.

**Quality assessment / Risk of bias analysis:** The the Grading of Recommendations, Assessment, Development and Evaluation(GRADE) assessment tool will be used for conducting an appraisal of the studies' methodological quality. Every selected study will be evaluated by 2 reviewers independently, a third one as a consulter. The GRADE evaluation system included bias risk; heterogeneity; indirectness; imprecision; publication bias. And each level of evidence is divided into "very low", "low", "moderate", or "high" judgment.

**Strategy of data synthesis:** For qualified articles, we would like to combine the

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collected data according to characteristics of eligible trials. In line with the Cochrane guideline, we will express risk ratio with 95% confidence intervals(95%CI) using fixed effect model. Besides the random effect model will be used for continuous outcomes because of clinical heterogeneity. Statistical heterogeneity will be investigated using  $\chi^2$  test and I<sup>2</sup> statistic(50%, strong heterogeneity). We will assess possible publication bias using the Egger funnel plot. All data will be performed by using Review Manager(RevMan version 5.4.0) software and P value <.05 will be considered statistically significant.

**Author 3 - Shu Zhang -** The author contributed to the development of the selection criteria, and the risk of bias assessment strategy.  
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**Subgroup analysis:** There's no subgroup considered to be analyzed.

**Sensitivity analysis:** For qualified articles, we would like to combine the collected data according to characteristics of eligible trials. In line with the Cochrane guideline, we will express risk ratio with 95% confidence intervals(95%CI) using fixed effect model. Besides the random effect model will be used for continuous outcomes because of clinical heterogeneity. Statistical heterogeneity will be investigated using  $\chi^2$  test and I<sup>2</sup> statistic(50%, strong heterogeneity). We will assess possible publication bias using the Egger funnel plot. All data will be performed by using Review Manager(RevMan version 5.4.0) software and P value <.05 will be considered statistically significant.

**Language:** English.

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

**Keywords:** prediction models; prognosis; influenza; review.

**Contributions of each author:**

**Author 1 - Yao Sun -** The author drafted the manuscript.

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**Author 2 - Yiwu Zhou -** The author provided statistical expertise.

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