

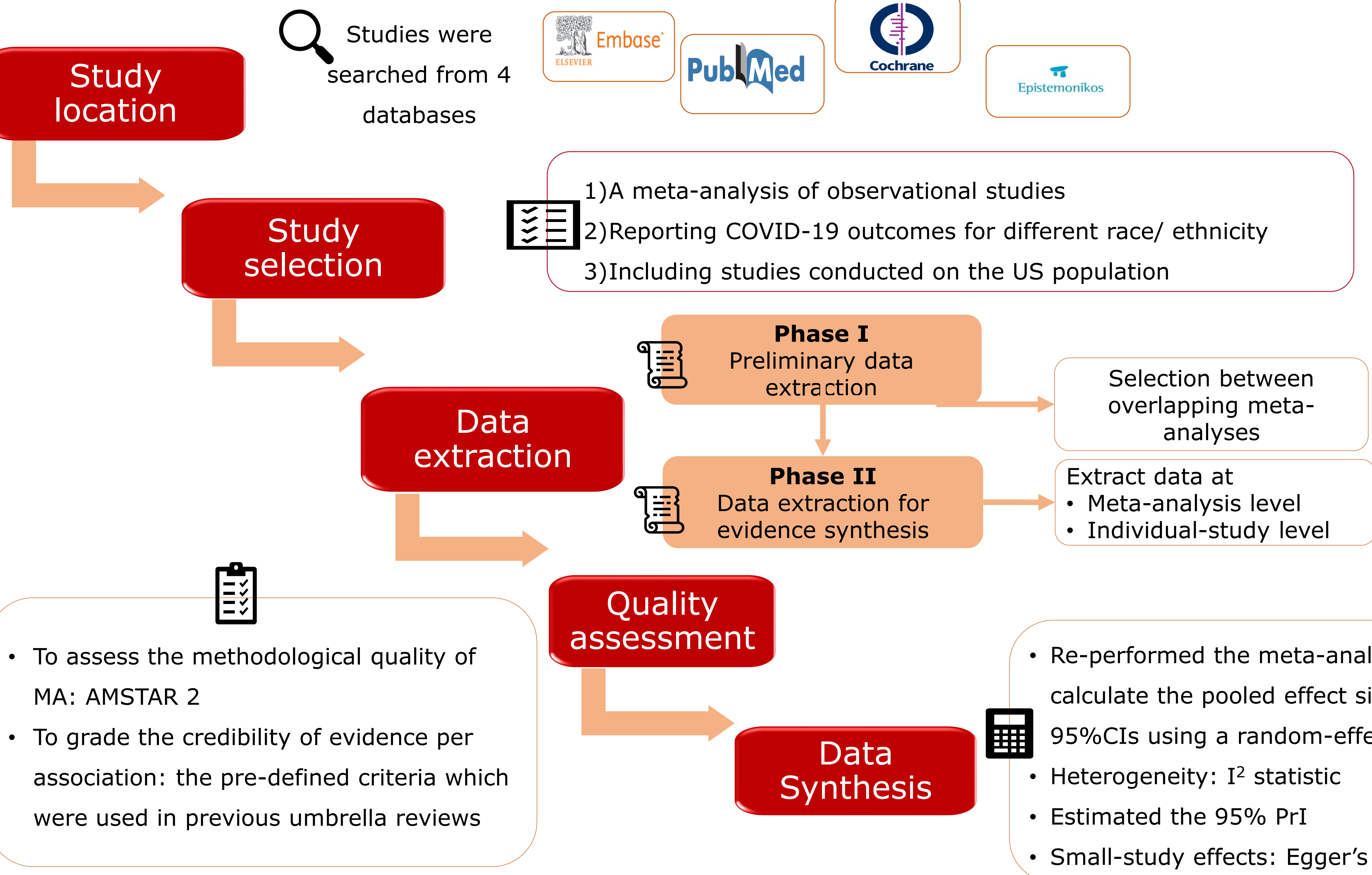
## Introduction

- Meta-analyses have investigated associations between race and ethnicity and COVID-19 outcomes
- However, there is uncertainty about these associations' existence, magnitude, and level of evidence

## Methods

- Umbrella review of meta-analyses (Fig.1)

**Fig. 1: Method of this umbrella review**



## Objective

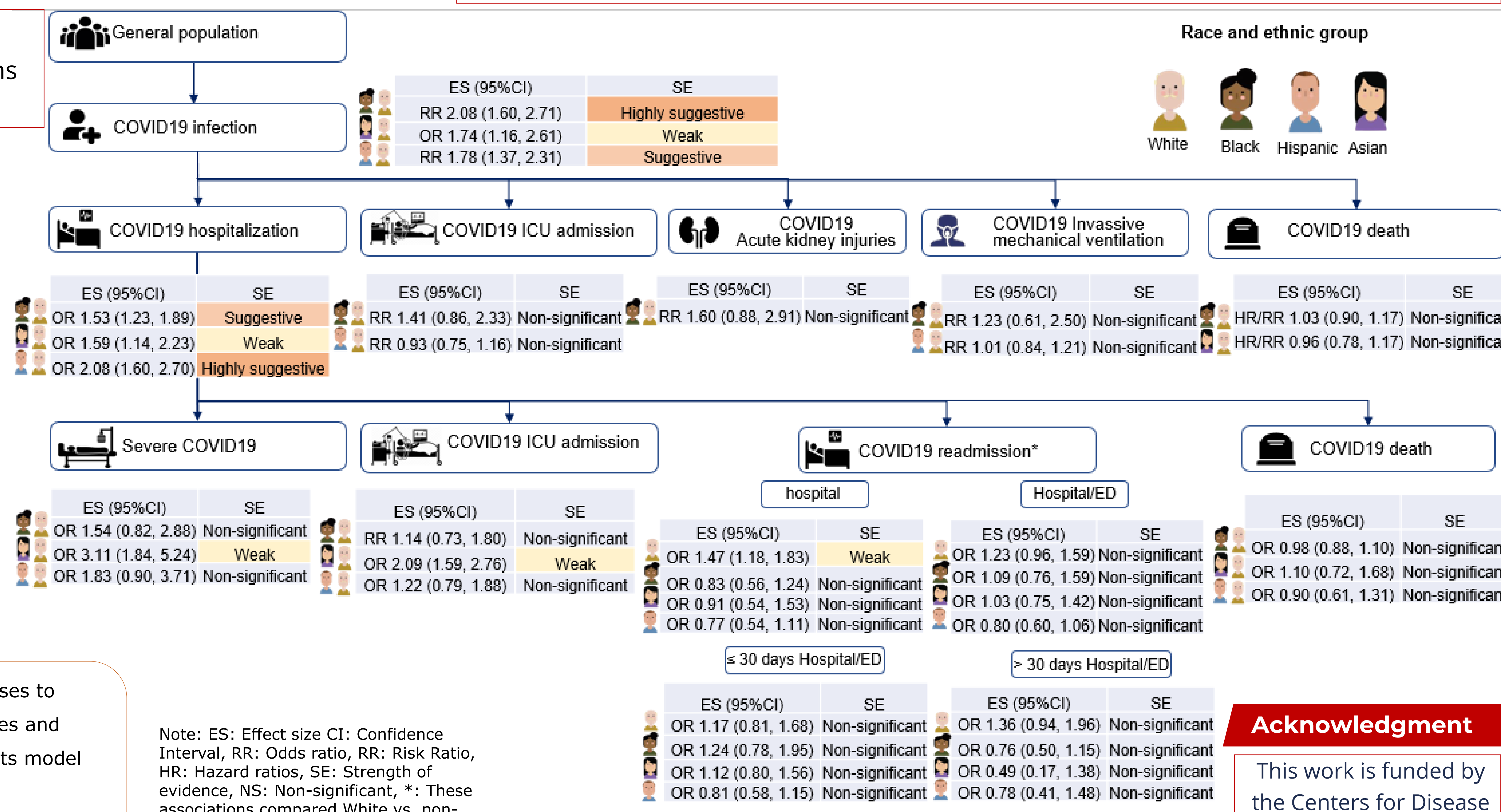
- We aimed to synthesize, quantify, and grade the strength of evidence of race and ethnicity and COVID-19 outcomes in the US

## Results

- 7 meta-analyses for evidence synthesis, with 42 associations examined (Fig.2)

## Key points

- Individuals of Black and Hispanic groups had a higher risk of COVID-19 infection and hospitalization (Fig. 2)
- These associations of race and ethnicity and COVID-19 outcomes existed more obviously in the pre-hospitalization stage (Fig. 2)
- More consideration should be given in this stage for addressing health inequity



**Fig. 2: Illustration of the associations between race and ethnicity and primary COVID-19 outcomes**

Note: ES: Effect size CI: Confidence Interval, RR: Odds ratio, RR: Risk Ratio, HR: Hazard ratios, SE: Strength of evidence, NS: Non-significant, \*: These associations compared White vs. non-White, Black vs. non-Black, Asian vs. non-Asian, and Hispanic vs. non-Hispanic.

## Acknowledgment

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