

# INPLASY PROTOCOL

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**Support:** Trauma Center

**Review Stage at time of this submission:** Preliminary searches.

## Conflicts of interest:

The author(s) declared no potential conflicts of interest with respect to the research, authorship, or publication of this article.

## The effect of trauma care systems on the mortality of injured adult patients: a protocol for systematic review and meta analysis

Jifang, W<sup>1</sup>; Liping, Y<sup>2</sup>; Jing, Z<sup>3</sup>; Jie, S<sup>4</sup>.

**Review question / Objective:** Does trauma care systems have some effect on the mortality of injured adult patients?

**Condition being studied:** Trauma care systems on the mortality of injured adult patients.

**Information sources:** MEDLINE, EMBASE, CINAHL, Scopus, Web of Science, the Cochrane Central Database of Systematic reviews and CENTRL will be searched from their inception up to April 2018. The references of included studies will be hand searched to identify any additional articles. Only English language studies will be included.

**INPLASY registration number:** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 14 August 2020 and was last updated on 14 August 2020 (registration number INPLASY202080058).

## INTRODUCTION

**Review question / Objective:** Does trauma care systems have some effect on the mortality of injured adult patients?

**Condition being studied:** Trauma care systems on the mortality of injured adult patients.

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## METHODS

**Participant or population:** Studies of adult civilian trauma patients, 18 years or older, injured and treated in developed countries.

**Intervention:** Any organized care trauma system.

**Comparator:** A lack of an organized care trauma system or a less organized or more rudimentary trauma system.

**Study designs to be included:** This systematic review will include randomized controlled trials, non-randomized controlled trials, before and after studies, interrupted time series.

**Eligibility criteria:** English language, randomized controlled trials, non-randomized controlled trials, before-and-after studies, interrupted time series, cohort studies and case-control studies will be included. Studies evaluating the effect of a trauma system on the primary outcome, adult patient mortality, will be included. Due to the numerous definitions of a trauma system, studies will be deemed eligible for inclusion if the study authors define their intervention as a trauma system and if the intervention has ≥2 of the following clinical components identified by the Trauma Association of Canada 1. Immediate access to emergency medical services (including communications, triage, stabilization and intervention) 2. Rapid Transport to appropriate level of care 3. Acute care facilities including resuscitation, surgery, critical care and specialty services 4. Rehabilitation, long term care and reintegration into the community and workforce.

**Information sources:** MEDLINE, EMBASE, CINAHL, Scopus, Web of Science, the Cochrane Central Database of Systematic reviews and CENTRAL will be searched from their inception up to April 2018. The references of included studies will be hand searched to identify any additional articles. Only English language studies will be included.

**Main outcome(s):** Mortality.

**Additional outcome(s):** Morbidity, disability, function, length of hospital stay.

**Data management:** Two reviewers will independently extract data from all included studies using a standardized electronic extraction form. The extraction form will initially be trialled on a small number of included studies to evaluate if all important data is being collected. Any changes made to the form will be documented in the final review.

**Quality assessment / Risk of bias analysis:** Risk of bias of included studies will be evaluated using the ROBINS-I tool. Both reviewers will independently evaluate the risk of bias, and any disagreements not resolved through discussion will be arbitrated by a third reviewer.

**Strategy of data synthesis:** Data synthesis will include a descriptive summary of included studies and be presented in table form. A narrative synthesis will be written to outline the similarities and differences between studies, detail unique aspects of individual studies and assess the overall quality of the evidence. A second table will report included study outcomes. It is anticipated that included studies will be diverse in methodology, intervention and comparators; as such, quantitative data synthesis is not proposed in this project plan.

**Subgroup analysis:** If there is enough research, we will conduct a subgroup analysis to investigate differences in age, gender and et al.

**Sensitivity analysis:** If included studies were more than ten, funnel plot will be used to identify the possible publication bias. Additionally, Egger regression and Begg's tests will be utilized to detect the funnel plot asymmetry.

**Language:** English.

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

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**Other relevant information:** None.

**Keywords:** trauma care systems; mortality; meta-analysis.

**Contributions of each author:**

**Author 1 -** Wu Jifang.

**Author 2 -** Yang Liping.

**Author 3 -** Zhu Jing.

**Author 4 -** Song Jie.