The effect of emergency department overcrowding on outcomes of admitted patients: a systematic review protocol

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**Project Objective**

To identify the effect of emergency department (ED) overcrowding on outcomes of admitted patients, namely admitted patient’s mortality, admitted patient’s hospital length-of-stay, and delay in door-to-needle time to treatment (time to antibiotic, time to thrombolysis and time to analgesic).

**Inclusion Criteria:**

- Adults’ patients (aged 18 years or more) in emergency departments’ settings only and it will evaluate the effect of ED overcrowding versus normal/not crowded ED on outcomes of admitted patients.
- Primary outcome: mortality incidence proportion
- Secondary outcomes: hospital length-of-stay; time to antibiotic; time to thrombolysis and time to analgesic.
- Experimental and epidemiological study designs will be included in this systematic review.

**Search Strategy:**

An initial search of MEDLINE and CINAHL will be undertaken, followed by a second search of major healthcare-related electronic databases for published and unpublished studies. The reference list of all identified reports and articles will be searched for additional studies. Studies in English, Spanish and Portuguese published from 1989 will be included in this review.

**Papers selected for retrieval will be assessed by two independent reviewers for methodological quality prior to inclusion in the review using standardized critical appraisal instruments from the Joanna Briggs Institute Meta-Analysis of Statistics Assessment and Review Instrument (JBI-MASTARI). Any disagreements that arise between the reviewers will be resolved through discussion, or with a third reviewer.**

Data (interventions, populations, study methods and outcomes of significance to the review question and specific objectives) will be extracted from papers included in the review independently by two reviewers, using the standardized data extraction tool from the JBI-MASTARI.

For missing information or to clarify unclear data, the authors of primary studies will be contacted. Any disagreements that arise between the reviewers will be resolved through discussion, or with a third reviewer.

Quantitative data will, where possible, be pooled in statistical meta-analysis using the JBI-MASTARI. All results will be subject to double data entry. Effect sizes expressed as odds ratio (for dichotomous data), weighted mean differences (for continuous data) and their 95% confidence intervals will be calculated for outcome analysis. Heterogeneity will be statistically assessed using the standard Chi-square and also explored using subgroup analyses based on the different quantitative study designs and types of participants included in this review. Where statistical pooling is not possible, the findings will be presented in narrative form including tables and figures to aid in data presentation.

**Future practice/research implication**

Overcrowding in the ED represents a significant public health problem that endangers the reliability of health care systems worldwide. This systematic review will highlight the effect of ED overcrowding on outcomes of admitted patients. Thus, it will be important to guide policy makers in decision making related to new policies and interventions for the optimization of patient outcomes and improvement of ED performance during times of crowding.

**REFERENCES**