The consequences and causes of, or solutions to, emergency department crowding: a systematic review protocol

Claire Morley, Maria Unwin, Gregory Peterson, Jim Stankovich, Leigh Kinsman

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Review question
What are the consequences of emergency department crowding?
What are the causes of emergency department crowding?
What solutions have been identified to combat emergency department crowding?

Searches
The search strategy aims to locate original research articles, published in peer reviewed journals, detailing the consequences or causes of, or the solutions to, emergency department (ED) crowding.
We will search the following electronic databases: MEDLINE, CINAHL, EMBASE and Web of Science.
Studies published between January 2000 and June 2018 will be sought, and only studies published in the English language will be considered.
Studies undertaken in paediatric-only EDs will be excluded.

Types of study to be included
There will be no restriction to the types of studies considered for this review. Qualitative, quantitative and mixed-methods studies, that meet the inclusion criteria, will all be considered.

Condition or domain being studied
Emergency department crowding, defined as occurring when, ‘ED function is impeded primarily because the number of patients waiting to be seen, undergoing assessment and treatment, or waiting to leave exceeds the physical and/or staffing capacity of the ED’ is the condition being studied.

Participants/population
This review will consider all studies that have investigated the consequences and/or causes of and/or solutions to ED crowding, in general EDs.
Studies undertaken in specialised EDs, such as paediatric EDs, will be excluded.

Intervention(s), exposure(s)
The exposure to be reviewed is ED crowding, as defined above.
There are many accepted measures of ED crowding, including ED length of stay, hours on ambulance bypass, and numbers of patients who leave the ED without being seen.
Studies that have incorporated a measure of ED crowding into their study design will be considered.
All studies that have investigated the consequences of ED crowding, or identified causes of ED crowding, or trialled or modelled solutions to ED crowding will be considered for inclusion.

Comparator(s)/control
This review will consider studies that compare outcomes for patients who present to crowded EDs versus those who present to non-crowded EDs. This review will consider studies that compared different interventions to try to reduce ED crowding. Studies without a comparator will also be considered.

Context
Studies undertaken in healthcare settings will be considered. This may be within the ED, but is also likely to include studies undertaken in primary care.

Primary outcome(s)
Primary outcome Q.1: outcomes that relate ED crowding to effects on patients, staff or the healthcare system.
Primary outcome Q.2: outcomes that show a cause and effect relationship between the identified cause and ED crowding.
Primary outcome Q.3: outcomes that show a positive, negative or null effect of a specified solution to ED crowding.

Secondary outcome(s)
None.

Data extraction (selection and coding)
Titles and/or abstracts of studies retrieved using the search strategy and those from additional sources will be screened by one review author to identify studies that potentially meet the inclusion criteria outlined above. The full texts of these potentially eligible studies will be retrieved and independently assessed for eligibility by two review team members. Any disagreements over the eligibility of particular studies will be resolved through discussion with a third reviewer. A standardised form will be used to extract data from the included studies for assessment of study quality and evidence synthesis. Extracted information will include: study setting; study population; details of the intervention and control conditions; study methodology; outcomes and times of measurement. Review authors will extract data in pairs, and any discrepancies will be identified and resolved through discussion with a third reviewer.

Risk of bias (quality) assessment
Two reviewers will independently assess the risk of bias of included studies using the SIGN critical appraisal tools. If there are any disagreements, a third reviewer will act as adjudicator.

Strategy for data synthesis
We will provide a narrative synthesis of the findings from the included studies. We will provide summaries of identified causes and consequences as well as solutions to ED crowding. We anticipate that the types of studies to be included are likely to be heterogeneous in their methodologies, making a meta-analysis of results unlikely.

Analysis of subgroups or subsets
None planned.

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Conflicts of interest
None known

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English

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Australia

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Details of any existing review of the same topic by the same authors

Stage of review at time of this submission

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Versions
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