Effectiveness of organizational interventions to reduce emergency department utilization: a systematic review

CRD summary
This review concluded that there was evidence that interventions aimed at increasing primary care accessibility and emergency department cost-sharing were effective in reducing emergency department use but that other interventions showed contradictory results. This review was generally well conducted. The conclusions reflect limitations in the data and appear to be appropriate.

Authors' objectives
To review the effectiveness of organisational interventions aimed at reducing emergency department use in the general population

Searching
PubMed and The Cochrane Library were searched between January 1985 and February 2012. There were no language restrictions. Search terms were reported. Reference lists of published and unpublished reviews were searched. Experts in the field were contacted.

Study selection
Randomised controlled trials (RCTs), quasi-experimental studies, times series, cross-sectional studies, repeated cross-sectional studies and longitudinal studies of organisational interventions with impact on emergency department use were eligible for inclusion. The primary outcome was the number of emergency department visits. Secondary outcomes were revisits, hospital admissions, mortality and safety measures.

Interventions either addressed supply and accessibility of services or demand for services. Study designs, settings and interventions varied widely. Most studies reported emergency department visits. The control group in most studies was usual care.

Three reviewers selected studies. Disagreements were resolved by consensus.

Assessment of study quality
The authors gave studies a score from zero to 7 based on: randomisation; lack of additional interventions or contamination of the control group; a representative study population; comparability of groups at baseline; loss to follow-up and adequate sample size; outcomes assessed for longer than six months; and use of valid and reliable outcome assessment tools.

Two reviewers performed the assessment; disagreements were resolved by consensus.

Data extraction
Three reviewers extracted data on effectiveness of interventions, typically as p values. Disagreements were resolved by consensus.

Methods of synthesis
Results were presented as a narrative synthesis.

Results of the review
Forty-eight studies were included. Study quality and reporting were poor in most of the studies with a median score of three (range two to four) out of seven. Only ten studies were RCTs.

Accessibility to primary care (25 studies): Ten studies focused on interventions to increase access to medical doctors in primary care or primary care centres. Evidence from five studies (one RCT) showed that increased numbers of primary
care doctors or centres were associated with reductions in emergency department visits. Two studies reported significant reductions in the number of hospital visits with the intervention and one found no significant difference. Two of the nine studies that assessed out-of-hours services reported decreases in emergency department use after increasing hours of primary care access; however, two studies reported increases in emergency department use. Six studies (four RCTs) assessed telephone triage and consultation and none found any significant between-group differences in the number of emergency department attendances.

**Demand for services**

**Educational interventions** (six studies): One RCT found that monthly educational group meetings resulted in fewer emergency department visits than with the control group. Two quasi-experimental studies that evaluated one of three different educational/counselling interventions and another of a “care facilitator” found significant decreases in emergency department visits. The only high quality RCT did not find any significant between-group differences in emergency department utilisation.

**Barrier interventions** (17 studies): One randomised study found that a lack of cost-sharing (any kind of out-of-pocket payment for health care services) resulted in significantly greater emergency department use than insurance with cost-sharing. Cost-sharing reduced both urgent and non-urgent visits. Five out of six quasi-experimental studies found that emergency department cost-sharing reduced emergency department use. Five studies in USA evaluated the effects of gatekeeping (no direct access to secondary care and emergency department access by referral) and one cross-sectional study found that gatekeeping plans reduced emergency department use more than with a control group. The only RCT where the usual primary care doctor carried out the gatekeeping role found no significant differences in hospital emergencies or mortality rates.

**Authors’ conclusions**

There was evidence to show that interventions aimed at increasing primary care accessibility and emergency department cost-sharing were effective in reducing emergency department use. Other interventions aimed at decreasing emergency department use showed contradictory results.

**CRD commentary**

This review included clearly stated and reproducible inclusion criteria. Efforts were made to reduce publication bias by not using language restrictions and by searching reference lists and contacting experts. Study selection, data extraction and quality assessment were performed in duplicate to reduce possible error or bias. A narrative synthesis was appropriate as there were considerable variations in study designs, interventions and methods.

This review was generally well conducted. Some results favoured the interventions but data were of limited quality. The authors’ conclusions reflect limitations in the data and appear to be appropriate.

**Implications of the review for practice and research**

**Practice**: The authors stated that effective utilisation of emergency services while preventing overload required integrated interventions. Interventions would need to be specific for each country and be implemented as a function of the coverage and funding of the country’s healthcare system.

**Research**: The authors stated that safety of interventions was important and future research needed to evaluate patient health, morbidity and mortality. Safety needed to be evaluated before policy implementation.

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None.

**Bibliographic details**


**PubMedID**

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.