Can primary care and community-based models of emergency care substitute for the hospital accident and emergency (A & E) department?

Roberts E, Mays N

Authors' objectives
To assess the influence of emergency care provided in primary or community settings on demand for accident and emergency (AE) care. The review was aimed at developing policy for the UK.

Searching
MEDLINE, HealthSTAR, DHSS Data, CINAHL, the King’s Fund library database, and the English National Centre for Primary Care Research and Development database of research at the primary-secondary interface, were searched. In addition, journals were handsearched, experts were contacted and reference lists were examined for additional relevant references. Published and unpublished studies in any language were eligible.

Study selection
Study designs of evaluations included in the review
The following types of studies with a comparable control group were eligible: randomised controlled trials (RCTs), quasi-experimental studies, before-and-after studies, and observational studies with a comparative analysis. Studies that did not clearly describe the intervention, methods or results were excluded.

Specific interventions included in the review
Studies of emergency care interventions, which were defined as ‘first care contacts’ that were immediately able to treat urgent medical problems, were eligible. The included interventions had to have open access, offer immediate advice, be therapeutic, staffed by primary care professionals and with no admittance or referral criteria. Studies of raising awareness of the most appropriate use of care facilities and psychosocial interventions were excluded. The included studies were of:

- primary care interventions (providing local primary care services, using a primary care nurse practitioner instead of a family physician, and using out-of-hours telephone access to primary care physicians or general practitioner (GP) on-call system, or primary care deputising services);
- integrated primary and secondary care (by employing GPs based in AE departments); and
- emergency care interventions (free-standing emergency departments, redirecting ‘inappropriate’ AE attenders and instituting user charges for hospital AE care).

Participants included in the review
Studies of patients with a 'minor' (however defined) illness or injury that required acute care in primary and community care settings were eligible for inclusion.

Outcomes assessed in the review
Studies that reported objective measures of the pattern of emergency demand for health care across the primary-secondary care interface were eligible for inclusion. Studies that only used subjective measures were excluded. The review principally assessed AE attendance.

How were decisions on the relevance of primary studies made?
One reviewer selected the studies and a second reviewer checked the results.

Assessment of study quality
Study quality was assessed using the following criteria: power calculation performed; unit of allocation and analysis;
response and follow-up of participants; probability of contamination (for group comparisons and for before-and-
after/repeated studies); baseline measurements; equivalent data collection before and after interview
(baseline/before/after/repeated studies); pilot study performed; and methodological weaknesses or strengths, as defined
by authors.

RCTs were assessed on the basis of type of RCT and concealment of allocation. Interrupted time series analyses were
assessed by considering protection against secular changes, whether there was a formal test for trend, and the
completeness of the data set. Studies using a second site as the control were assessed by considering the comparability
of the sites. Surveys were assessed on whether the selection was random and potential for non-response bias. Static
group comparisons were assessed by considering the appropriateness of the method of analysis controlling for likely
confounding factors. One reviewer extracted the quality criteria using a standardised form and a second reviewer
checked the results.

**Data extraction**
The authors do not state how the data were extracted for the review, or how many of the reviewers performed the data
extraction. The following data were extracted using a standardised data extraction form: the characteristics of the
participants (providers and patients); setting; intervention details; control group details; source of funding; health care
system; and outcomes including effectiveness of intervention, and cost and cost-effectiveness data if reported.

**Methods of synthesis**
How were the studies combined?
The studies were grouped into three broad categories according to the type of intervention, and a narrative synthesis was
undertaken.

How were differences between studies investigated?
Differences between the studies were discussed in the text of the review with respect to study setting, health care
system, country and study quality.

**Results of the review**
Thirty-four studies (including 4 RCTs) were included.

**Primary care interventions.**

Access to primary care (9 studies including 1 RCT): 8 studies found that providing local primary care services markedly
reduced demand for AE care. The ninth study found no significant change in the demand for AE care. Primary care
delivery (7 observational studies set in the UK): the studies did not find any significant association between
characteristics of the primary care practice and hospital attendance. One study found that increasing distance between
home and hospital was associated with decreasing AE self-referral rates. The role of the primary care nurse practitioner
(1 systematic review identified 3 studies): the review found no significant difference in AE attendance rates between
patients who consulted a primary care nurse practitioner or a family physician.

Out-of-hours care (1 RCT, 1 before-and-after study, 2 observational studies): none of the studies found any obvious
effect on AE attendance or ambulance call-outs from out-of-hours telephone access to primary care physicians or GP
on-call systems, or primary care deputising services.

Integrated primary and secondary care (1 RCT, 1 quasi-randomised controlled study and 1 controlled clinical trial of
GPs based in AE departments in UK inner cities): all 3 studies found that GPs had lower use of diagnostic facilities and
lower rates of use of secondary service in comparison with hospital doctors. The studies found no significant difference
between practitioners in patient satisfaction or health outcomes.

**Emergency care interventions.**

Minors injuries units (1 observational study based in the USA): the study found that free-standing emergency
departments had little impact on demand.

Telephone triage (1 study): the study did not isolate telephone triage from other changes in the hospital.

Redirecting ‘inappropriate’ AE attenders (8 before-and-after studies): 7 studies found that redirecting patients before initiating treatment reduces AE attendance. Four studies found marked increases in primary care services. The studies were predominantly conducted in health maintenance organisations in the USA. User charges for hospital AE care (1 RCT, 2 before-and-after studies, 1 time series): 2 US studies found that user charges significantly reduced hospital AE attendance. The findings from both studies suggest that some reduced attendance was found in patients requiring hospital care. One Canadian study found that introducing free care for non-urgent emergency department visits for eligible patients increased hospital attendance. One Irish study found little effect from a moderate financial saving for patients referred to AE by their GP.

Cost information
Two controlled trials found that the use of GPs in AE departments resulted in cost-savings.

Authors' conclusions
Emergency care provided by primary care or in the community can be used as an alternative to hospital AE care. Demand for hospital AE care may be reduced by broadening access to primary care and introducing user charges or other barriers for hospital AE attenders, but these interventions have not been costed. Employing GPs in hospital AE departments may be cost-effective. There was little evidence on telephone triage, minor injury units and GP out-of-hours cooperatives.

CRD commentary
The review question was clear in terms of the study design, participants, intervention and outcome. Published and unpublished studies were sought from many different sources, attempts were made to locate unpublished studies, and studies published in any language were eligible. Only one reviewer selected the studies and assessed validity and, although this appears to have been checked by a second reviewer, selection bias would have been less likely had two reviewers independently conducted these processes. Validity was assessed using defined criteria and relevant data were extracted. The methods used to extract the data were not described. The studies were appropriately grouped and clearly summarised in a narrative synthesis, and differences between the studies were discussed. The evidence presented appears to support the authors’ conclusions and is further reported in the King’s Fund Report (see Other Publications of Related Interest).

Implications of the review for practice and research
Practice: The authors state that substituting primary or community emergency care for hospital AE care is possible.

Research: The authors did not state any implications for further research.

Funding
King’s Fund London Commission.

Bibliographic details

PubMedID
10182293
Other publications of related interest

Indexing Status
Subject indexing assigned by NLM

MeSH
Community Health Services /economics /organization & administration; Cost-Benefit Analysis; Emergency Service, Hospital /organization & administration /trends /utilization; Great Britain; Health Policy /trends; Health Services Accessibility; Health Services Needs and Demand; Hospitals, Public /organization & administration; Models, Organizational; Organizational Innovation; Primary Health Care /economics /organization & administration; State Medicine; Triage /trends

AccessionNumber
11998008967

Date bibliographic record published
31/10/2003

Date abstract record published
31/10/2003

Record Status
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.