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Review

Interventions to reduce emergency department utilisation: A review of reviews☆

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ABSTRACT

Objective: To describe policy interventions that have the objective to reduce ED use and to estimate their effectiveness.
Methods: Narrative review by searching three electronic databases for scientific literature review papers published between 2010 and October 2015. The quality of the included studies was assessed with AMSTAR, and a narrative synthesis of the retrieved papers was applied.
Results: Twenty-three included publications described six types of interventions: (1) cost sharing; (2) strengthening primary care; (3) pre-hospital diversion (including telephone triage); (4) coordination; (5) education and self-management support; (6) barriers to access emergency departments. The high number of interventions, the divergent methods used to measure outcomes and the different populations complicate their evaluation. Although approximately two-thirds of the primary studies showed reductions in ED use for most interventions the evidence showed contradictory results.
Conclusion: Despite numerous publications, evidence about the effectiveness of interventions that aim to reduce ED use remains insufficient. Studies on more homogeneous patient groups with a clearly described intervention and control group are needed to determine for which specific target group what type of intervention is most successful and how the intervention should be designed. The effective use of ED services in general is a complex and multi-factorial problem that requires integrated interventions that will have to be adapted to the specific context of a country with a feedback system to monitor its (un-)intended consequences. Yet, the co-location of GP posts and emergency departments seems together with the introduction of telephone triage systems the preferred interventions to reduce inappropriate ED visits while case-management might reduce the number of ED attendances by frequent ED users.

1. Introduction

In most high-income countries, the number of visits to hospital emergency departments (EDs) has increased considerably over recent years [1]. This concerns the healthcare community, as well as the society at large since it causes undesirable situations and outcomes. A widely cited consequence is that many EDs experience overcrowding with associated long waiting times,

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patient dissatisfaction, over-stressed healthcare professionals, safety and efficiency problems [2–5]. In their search for solutions policymakers' attention is mostly focused on particular groups. A first group are the so-called inappropriate ED visits: the ED attendances for conditions that do not require urgent attention or specialised input. Although there is considerable debate about the concept of 'inappropriateness', prevalence estimates in the international literature mostly vary between 20 and 40% [1,6]. These ED visits are considered as inappropriate because they may divert ED resources from time-sensitive and life-threatening situations (e.g. stroke, acute myocardial infarction, major trauma) to minor health problems potentially resulting in unsafe situations. Furthermore, inappropriate ED visits may also compromise the efficient use of healthcare resources in the knowledge that primary care is cheaper than emergency care services for patients with non-urgent problems because of lower labour costs and lower prescriptions of medical imaging and laboratory tests [7]. Finally, when patients replace primary care with ED visits there is a lack of continuity and follow-up [8].

A second particular group is that of older persons, especially the very old (i.e. >85 years). Elderly patients are the fastest growing group at EDs [9]. The higher ED use amongst older persons can be explained by underlying factors such as multiple chronic conditions, falls, functional decline in combination with lack of support, deprivation, etc. Although a large proportion of older adults require hospital care at the time they present to the ED, the extent to which visits could be avoided, either through early prevention or access to alternative settings, is less clear [9]. The same arguments hold for non-elderly patients with (multiple) chronic conditions.

A third particular group that gains policymakers' attention is that of the frequent ED users [10]. Although different thresholds for defining frequent ED users exist in the literature (e.g. threshold of 3–10 ED visits within a period of 12 months), it is estimated that between 1 to 5% of the overall ED population are frequent users [11]. Despite being a marginal proportion of total ED patient population, it is well described in the international literature that frequent ED users have complex healthcare needs (e.g. exacerbations of patients with chronic conditions, frail elderly, substance abusers, nursing home residents) that are not optimally managed within the context of the ED (or other healthcare) setting [11].

The reasons for the increase in (sometimes inappropriate) ED use are multifaceted and include mostly factors related to patient characteristics and demographic/societal changes such as the ageing population, increasing prevalence of chronic conditions, the changes in households characterised by increasing loneliness and lack of family support [6]. But also other factors can cause an increasing demand or explain a high use of ED resources. Examples are risk aversion (e.g. patients perceive their symptoms as severe enough to attend the ED; patients that think they are better off in a high-tech environment) and the easy access to specialised care. Indeed, the perception exists that EDs are convenient 'one-stop shops' that provide 'total care' with relevant diagnostics, delivered by a specialist team trained in emergency medicine [12]. A well-known example of the latter phenomenon can be observed amongst young children where the general practitioner (GP) is bypassed to get direct access to a paediatrician [6,13].

Besides factors contributing to an increased demand also supply-side factors are mentioned in the literature (e.g. lack of access to primary care services, inconvenient primary care out-of-hours services) [6]. Yet, in spite of investments in most countries to improve these supply factors, ED use continued to rise. Therefore, it is assumed that further improvements in these supply factors could, at best, result in curbing the rise in ED visits or in a more efficient allocation of the available resources.

The aim of this study was to analyse the evidence about effectiveness of interventions to reduce (the rise in) ED utilization based on a narrative review of systematic reviews. This entails a wide variety of interventions such as: healthcare education and self-management interventions; measures that limit access to the ED (e.g. gatekeeping, cost sharing); measures that strengthen primary care (e.g. GP supply; extended out-of-hours openings) or alternative care settings (e.g. walk-in centres) to improve access; interventions to strengthen continuity of care between hospital care and community care (e.g. case-management).

2. Materials and methods

2.1. Search strategy

An exploratory search showed that several reviews exist on this subject. Based on this exploratory search it was assessed that the existing reviews might be a good source to get insight into the current state of affairs without necessitating to search for primary studies. Therefore, it was decided to perform a review of reviews. Reviews were identified through a systematic literature search in three databases (MEDLINE-Ovid, Embase and Cochrane library reviews). The databases were searched in October 2015 with the following restrictions: language (English, French, Dutch); date limits (from 2005 to October 2015). In each database, a search was performed using the following search terms: [triage OR emergency care OR emergency department(s) OR emergency unit(s) OR emergency rooms(s) OR emergency crowding OR emergency overcrowding OR emergencies OR emergency medical services OR crowding] AND [emergency use OR emergency visit OR emergency attendance OR emergency admission OR emergency readmission OR urgent use OR urgent visit OR urgent readmission OR unscheduled use OR unscheduled visit OR unscheduled attendance OR unscheduled admission OR unscheduled readmission OR unplanned use OR unplanned visit OR unplanned attendance OR unplanned admission OR unplanned readmission] AND [meta analysis OR review OR search].

MeSH headings and wildcards were used in the MEDLINE-Ovid search to encompass synonyms to the search terms. We used the singular and plural forms. The MEDLINE-Ovid search was replicated for Embase and the Cochrane library reviews. All reference lists of included studies were hand-searched for additional potential relevant studies.