



**THE IMPACT OF PUBLIC HEALTH MESSAGING CAMPAIGNS ON REDUCING
EMERGENCY DEPARTMENT VISITS FOR NON-URGENT CONDITIONS**

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Abstract

The purpose is to analyze policy measures aimed at decreasing the use of emergency departments (EDs) and to assess their efficacy. A narrative review was conducted by scanning three web databases for scientific literature review publications. The studies' quality was evaluated using the AMSTAR tool, and a narrative synthesis was conducted on the obtained publications. Evaluating interventions is complicated because to the large number of treatments, the many methodologies used to assess outcomes, and the diverse populations involved. While the majority of main studies indicated a decrease in emergency department (ED) use for most therapies, the data presented conflicting outcomes. Despite the presence of multiple publications, the available data on the efficacy of treatments aimed at reducing emergency department (ED) use is still inadequate. Further research is required to investigate the effectiveness of different interventions and their optimal design for certain patient categories. This research should focus on using more uniform patient samples and properly defining both the intervention and control groups. The optimal use of emergency department (ED) services is an intricate and multifaceted issue that needs comprehensive treatments tailored to the unique circumstances of a given nation, along with a feedback mechanism to monitor both intended and unintended outcomes. However, the combination of placing GP posts and emergency departments in the same area, together with the use of telephone triage systems, seems to be the preferable methods for reducing unnecessary trips to the emergency department. Additionally, case-management interventions may be effective in reducing the number of emergency room visits by frequent users.

Keywords: Emergency medical services, Health services research, Utilization

1. Introduction

The frequency of visits to hospital emergency departments (EDs) has significantly risen in several affluent nations in recent years [1]. This issue is of importance to both the healthcare profession and society as a whole, since it leads to unfavorable conditions and results. One often mentioned result is that several emergency departments (EDs) suffer from congestion, leading to

extended waiting times, patient discontent, high levels of stress among healthcare personnel, and issues with safety and efficiency [2], [3], [4], [5].

Policymakers mostly direct their emphasis towards certain demographic segments while seeking answers. One category consists of improper ED visits, which refers to instances when individuals seek emergency department care for problems that do not need immediate attention or specialized treatment. The idea of 'inappropriateness' is a subject of significant discussion. Prevalence estimates in international literature typically range between 20% and 40% [1], [6]. These trips to the emergency department are deemed inappropriate because they have the potential to redirect valuable emergency department resources away from urgent and life-threatening circumstances, such as stroke, acute myocardial infarction, and significant trauma, towards minor health issues. This diversion might possibly lead to dangerous conditions.

Moreover, inappropriate visits to the emergency department can also hinder the effective utilization of healthcare resources. This is because primary care is less expensive than emergency care for patients with non-urgent issues, due to lower costs of labor and fewer prescriptions for medical imaging and laboratory tests [7]. Ultimately, when patients substitute primary care with trips to the emergency department, there is a deficiency in the consistency and subsequent monitoring of their healthcare [8].

Another specific demographic is the elderly population, particularly those who are quite advanced in age (i.e. above 85 years old). The elderly population is seeing the most rapid growth among people seeking care at emergency departments [9]. The increased use of emergency departments (ED) by older individuals may be attributed to several underlying issues, including the presence of numerous chronic diseases, frequent falls, declining physical function, and a lack of support or resources. While a significant number of older persons need to be hospitalized when they arrive at the emergency department, it is unclear to what degree these visits may be prevented by early prevention or by providing access to other healthcare settings [9]. The same justifications apply to individuals who are not elderly and who have one or more chronic illnesses.

Another specific category that policymakers focus on is the population of individuals who often utilize the emergency department [10]. While many criteria are used in the literature to determine frequent emergency department (ED) users, such as having 3-10 ED visits over a 12-month period, it is estimated that around 1 to 5% of the total ED population fall into this category [11]. Although they make up a small percentage of all emergency department (ED) patients, it is widely documented in international literature that frequent ED users have intricate healthcare requirements. These include worsening conditions in patients with chronic illnesses, elderly individuals who are frail, individuals with substance abuse issues, and residents of nursing homes. These needs are not effectively addressed within the ED or other healthcare settings [11].

The rise in (occasionally inappropriate) utilization of emergency departments can be attributed to various factors, primarily patient characteristics and demographic/societal shifts. These factors include an aging population, a growing prevalence of chronic illnesses, and changes in households characterized by increased loneliness and lack of family support [6]. Additionally, there are additional reasons that might contribute to an increase in demand or account for a significant use of emergency department services. Instances of risk aversion may be seen when patients consider their symptoms as serious enough to warrant a visit to the emergency department.

Additionally, individuals who believe they would benefit from receiving treatment in a high-tech setting may also exhibit risk aversion. Another contributing factor is the convenient availability of specialized medical care. There is a common belief that emergency departments (EDs) are handy facilities that provide comprehensive treatment, including appropriate diagnostic services, provided by a specialized staff educated in emergency medicine [12]. An illustrative instance of this occurrence may be seen among young infants, when they skip the general practitioner (GP) and directly approach a paediatrician [6], [13].

In addition to variables that contribute to an increasing demand, the literature also mentions supply-side problems such as a lack of access to primary care services and inconvenient primary care out-of-hours services [6]. However, despite the efforts made by most governments to enhance these supply variables, the use of ED still increased. Thus, it is expected that any enhancements in these supply parameters may, at most, lead to reducing the increase in ED visits or to a more effective distribution of the existing resources.

The objective of this research was to examine the evidence about the efficacy of treatments aimed at decreasing the increase in emergency department (ED) usage. This was achieved by a narrative review of systematic studies. This encompasses a diverse range of interventions, including healthcare education and self-management interventions, measures to restrict access to the emergency department (such as gatekeeping and cost sharing), initiatives to enhance primary care (such as increasing the number of general practitioners and extending out-of-hours openings), and the establishment of alternative care settings (such as walk-in centers) to improve accessibility. Additionally, interventions to improve the continuity of care between hospital and community settings, such as case-management, are also implemented.

2. Efficacy of telecommunication services

The literature provides descriptions of several sorts of telephone services. One type of telephone calls is the follow-up calls made by hospital staff or primary care staff after a patient is discharged. These calls aim to assess the patient's well-being by answering their questions, inquiring about symptoms, providing further information on patient education, reviewing medications, helping with scheduling outpatient appointments and rescheduling missed appointments, and identifying any obstacles that may prevent the patient from attending appointments.

Another category of telephone calls includes telephone consultations or advisory services, such as telephone consultations for primary care patients seeking medical assistance outside of regular hours [2], [25]. Telephone triage services are a third category of phone calls, in which patients are prioritized using a validated triage method in the pre-hospital context via a telephone triage-assessment [18]. The research conducted by Flores-Mateo et al. [2] is the only one that included information on the countries where the telephone services were assessed, namely the United States, Denmark, and the United Kingdom.

While Ismail et al. [25] presented conflicting findings about the impact of validated pre-hospital telephone triage systems on emergency department (ED) use, it is important to note that there is a dearth of research in this field that has been little investigated [18]. The available research on the impact of telephone consultations, such as post-discharge telephone calls, is inconclusive. Bahr et al. [17] found both positive and negative results for interventions conducted in hospitals, whereas research that specifically examined interventions in primary care settings revealed no significant effects [2], [19]. The authors of the aforementioned review said that "instead of resolving the issue, this system actually prolongs the visit."

3. Evaluation of different pre-hospital interventions

The available data on pre-hospital interventions, such as the provision of treatment by pre-hospital practitioners at the scene or sending patients to alternate healthcare services, is minimal but shows promise. The evaluation conducted by Morgan et al. [31] assessed the transportation of low-acuity patients to treatment settings other than the Emergency Department (e.g. minor injury units). The research found that there was a substantial drop in Emergency Department use, ranging from 3% to 7%, in both a US-based and a UK-based study [31]. The study conducted by Tohira et al. [35] assessed the performance of pre-hospital practitioners who either provided treatment at the scene or referred patients to another healthcare agency.

All of these practitioners have the ability to provide treatment at the location and release patients on site without needing to refer them to other doctors [35]. This contrasts with the conventional emergency medical treatment in the majority of nations, when patients are taken to the Emergency Department. The review included research conducted in New Zealand ($n = 3$), Canada ($n = 11$), and the UK ($n = 9$). All the studies included in the analysis concluded that the implementation of these new roles resulted in a lower likelihood of patient transfers to the emergency department compared to traditional ambulance crew.

However, there were significant variances in the impact sizes, ranging from 1.6 to 50 times less probable. Furthermore, it is important to acknowledge that there was no definitive evidence regarding the influence of these responsibilities on future trips to the emergency department. Some studies indicated a rise in emergency department visits, while others saw no discernible difference [35]. The design aspects of the intervention play a crucial role in effectively reducing improper visits to the emergency department by offering alternative options.

Additional policy measures aimed at decreasing unnecessary emergency department visits include various strategies that seek to enhance primary care. In general, research that focused on initiatives targeting the expansion of primary care services outside of regular office hours did not demonstrate a decrease in emergency department visits. The majority of the research included in the analysis was conducted in countries that already had a well-established primary health care system. The result about the evidence on the relationship between expanding the availability of primary care (such as the number of general practitioners and primary care centers) and reducing emergency department visits was not unequivocal.

Although the findings of this narrative review of studies were inconclusive, a subsequent research [41] discovered significant correlations between the effectiveness of primary care and emergency department (ED) use, based on a survey of general practitioners (GPs) and patients in Europe. Indicators assessing the availability of primary care services (such as operating hours, proximity to a general practice, and home visits) were strongly linked to a decrease in emergency department visits. In addition, those who perceive obtaining primary care outside of regular office hours as effortless had a lower frequency of visits to the emergency department. This research is predicated on the subjective perception of the circumstance, rather than on the objective reality. However, the way people perceive the options for treatment has a significant influence on whether or not they really utilize them. The findings of this European research align with the conclusions of a previous review that found evidence supporting the link between primary care and preventable hospitalizations [42].

While the assessment of the evidence in the reviews was inconclusive and the quality of the evidence base is poor, there are signs that having GP-practices located in the ED for out-of-hours treatment, with a single entry point for emergency care, has the potential to decrease visits to the ED. This strategy should be explored in health systems where there are high rates of people referring themselves to the emergency department (ED) with problems that do not need immediate or specialized attention. It aims to direct these patients to a more suitable level of treatment. Within this integrated access point, a triage process is used to decide whether patients will be attended to by a General Practitioner (GP) or a physician in the Emergency Department (ED).

A recent study conducted at a medical facility found that when an urgent care center, staffed by general practitioners rather than nurse-led walk-in clinics, was located alongside an emergency department (ED), most patients who visited the urgent care center were treated there without needing to be referred to the ED or any other specialized care facility on the same day. However, the total number of patients referred to the co-located emergency department (ED) continues to be significant [43]. Patients sought the urgent care center due to its exceptional accessibility, which includes 24/7 availability, as a preferable option to routine general practitioner treatment [44] or as an alternative to the emergency department [43], [45]. In addition, this concept is increasingly being adopted as the norm in the Netherlands [46], [47].

An assessment was conducted to compare the conventional approach, where general practitioners (GPs) and emergency departments (EDs) operate in close proximity but independently, with the integrated model for out-of-hours care. In the latter approach, patients are assigned to either a General Practitioner (GP) or an Emergency Department (ED). They are then given a degree of urgency based on a triage assessment conducted by a nurse in a shared triage area. A triage is conducted by a professional medical assistant for patients who reach out to the center by phone [47]. Therefore, patients do not have the autonomy to choose whom they reach out to. Following the triage process, General Practitioners (GPs) and Emergency Departments (EDs) operate in separate departments. The research conducted a comparison of the treatment provided in six areas using a usual care model ($n = 58,620$) and a "intervention" model ($n = 63,441$).

The findings revealed that a smaller percentage of patients attended emergency departments (27.6% vs 21.6%) and a larger percentage of patients sought care from general practitioners. Furthermore, the areas with the intervention model had a larger percentage of patients with non-urgent concerns that contact the GP. A higher number of individuals with minor injuries are seeking medical attention from general practitioners in the intervention areas [47]. Furthermore, a research conducted in Switzerland [48] affirms the capacity of general practitioner (GP) practices situated in the emergency department (ED) to decrease the number of visits to the ED.

4. Conclusion

A comprehensive analysis of several systematic reviews identified 23 studies that focused on treatments targeted at decreasing emergency department (ED) use across diverse study populations. Studies that focused only on a specific ailment were not included. Three studies had a broad scope, whilst the remaining evaluations focused on a single intervention or a small range of treatments. Various intervention types were evaluated and may be categorized into six distinct categories: Cost sharing: sharing the financial burden of healthcare expenses.

Strengthening primary care: improving the availability and accessibility of primary care services, including increasing the supply of primary care providers and extending their working hours. Pre-hospital diversion: redirecting patients away from emergency departments by providing telephone services such as triage and consultation, and transporting them to alternative care settings. Coordination: implementing case-management strategies and other measures to ensure seamless and efficient healthcare delivery. Education and self-management support: providing information and resources to empower individuals in managing their own health. Barriers to access emergency departments: identifying and addressing factors that hinder individuals from seeking care at emergency departments.

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