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Medical regulation and prehospital dispatch in cardiopulmonary arrest: an integrative review

Regulação médica e despacho pré-hospitalar na parada cardiorrespiratória: revisão integrativa

Regulación médica y atención prehospitalaria en paro cardiorrespiratorio: una revisión integrativa

ABSTRACT

Objective: To analyze the scientific evidence on medical regulation and resource dispatch in the care of cardiopulmonary arrest (CPA), focusing on the organization of the emergency network and the determinants of survival. **Methods:** This integrative literature review was structured using the PVO strategy and was conducted in national and international databases. Published studies on pre-hospital dispatch, activation of the chain of survival, and technological interventions related to CPA were included. After screening, 14 studies comprised the final sample. **Results:** The evidence indicates that early activation of emergency services and the immediate initiation of cardiopulmonary resuscitation by laypersons are determinants for survival and neurological prognosis. Standardized regulatory protocols, population training, and the use of apps to mobilize trained first responders reduce response time. Challenges related to social, educational, and communication barriers persist. **Conclusion:** Strengthening medical regulation, coupled with education in basic life support and the use of technology, is strategic for improving the chain of survival and reducing inequalities in cardiovascular emergency care within the Brazilian Unified Health System (SUS).

Keywords: *Medical emergencies; Pre-hospital services; Cardiorespiratory arrest.*

RESUMO

Objetivo: Analisar as evidências científicas sobre a regulação médica e o despacho de recursos no atendimento à parada

cardiorrespiratória (PCR), com enfoque na organização da rede de urgência e nos determinantes da sobrevida. **Métodos:** Revisão integrativa da literatura, estruturada pela estratégia PVO, realizada em bases nacionais e internacionais. Foram incluídos estudos publicados sobre despacho pré-hospitalar, ativação da cadeia de sobrevivência e intervenções tecnológicas relacionadas à PCR. Após triagem, 14 estudos compuseram a amostra final. **Resultados:** As evidências indicam que a ativação precoce dos serviços de emergência e o início imediato da ressuscitação cardiopulmonar por leigos são determinantes para a sobrevida e prognóstico neurológico. Protocolos padronizados de regulação, treinamento populacional e uso de aplicativos para mobilização de socorristas capacitados contribuem para reduzir o tempo-resposta. Persistem desafios relacionados a barreiras sociais, educacionais e comunicacionais. **Conclusão:** O fortalecimento da regulação médica, associado à educação em suporte básico de vida e ao uso de tecnologias, é estratégico para qualificar a cadeia de sobrevivência e reduzir desigualdades no atendimento às emergências cardiovasculares no SUS.

Palavras-chave: *Urgências médicas; Serviços pré-hospitalar; Parada cardiorrespiratória.*

RESUMEN

Objetivo: Analizar la evidencia científica sobre la regulación médica y el despacho de recursos en la atención del paro cardiorrespiratorio (PCR), con énfasis en la organización de la red de emergencias y los determinantes de la supervivencia. **Métodos:** Se realizó una revisión integrativa de la literatura, estructurada mediante la estrategia PVO, en bases de datos nacionales e internacionales. Se incluyeron estudios publicados sobre despacho prehospitalario, activación de la cadena de supervivencia e intervenciones tecnológicas relacionadas con el PCR. Tras la selección, 14 estudios constituyeron la muestra final. **Resultados:** La evidencia indica que la activación temprana de los servicios de emergencia y el inicio inmediato de la reanimación cardiopulmonar por parte de personas no especializadas son determinantes para la supervivencia y el pronóstico neurológico. Los protocolos regulatorios estandarizados, la capacitación de la población y el uso de aplicaciones para movilizar a los primeros intervinientes capacitados contribuyen a reducir el tiempo de respuesta. Persisten los desafíos relacionados con las barreras sociales, educativas y de comunicación. **Conclusión:** El fortalecimiento de la regulación médica, la educación en soporte vital básico y el uso

de tecnología es estratégico para mejorar la cadena de supervivencia y reducir las desigualdades en la atención de emergencias cardiovasculares en el Sistema Único de Saúde (SUS).

Descriptores: *Emergencias médicas; Servicios prehospitalarios; Paro cardiorrespiratorio.*

INTRODUCTION

In Brazil, cardiovascular diseases constitute a major group of causes of death and, according to the Brazilian Society of Cardiology, accounted for 198,000 deaths as of July 1, 2020, including ischemic heart diseases, which are the leading causes of cardiac arrest.[1]

Cardiac arrest (CA) refers to the cessation of cardiac mechanical activity, confirmed by unresponsiveness, apnea or agonal gasping, and the lack of a central pulse.[2] The telecommunicator at the dispatch center assesses the event based on information obtained during the telephone call. The telecommunicator determines whether the event requires emergency medical services (EMS) and how urgently to dispatch the resource.[3]

Dispatch effectiveness depends on the ability of the medical regulation system to correctly determine which emergency medical service resources to send and how urgently to send them.[4]

This raises the following question: What scientific evidence is available in the literature regarding the dispatch of a rapid response vehicle to a patient in cardiac arrest? This topic is relevant because cardiac arrest is life-threatening, and dispatch professionals play a critical role as part of the team responsible for caring for victims of out-of-hospital cardiac arrest (OHCA).

Studies addressing the role of medical regulation and dispatch professionals in cardiac arrest are essential because high-quality cardiopulmonary resuscitation (CPR) during cardiac arrest is a major determinant of patient outcomes. This study, therefore, aimed to evaluate, in light of the literature, the available scientific evidence regarding the dispatch of a rapid response vehicle to patients in cardiac arrest.

MÉTODOS

This study used a qualitative Integrative Literature Review (ILR). This methodological approach synthesizes primary studies that use different methodologies, whether experimental or nonexperimental. Analyzing these studies together and incorporating their findings into Evidence-Based Practice (EBP) provides a clearer and more comprehensive understanding of the topic. The ILR evaluates and analyzes findings to identify gaps in the topic under investigation and to propose new solutions for future research.[5]

This type of study requires six stages: identifying the topic and selecting the hypothesis or research question; establishing inclusion and exclusion criteria; defining the information used for categorization; evaluating the studies; interpreting the results; and presenting the synthesis of knowledge.[6]

We used the Population, Variables, and Outcomes (PVO) strategy to formulate the guiding question: What scientific evidence is available in the literature regarding the dispatch of a rapid response vehicle to a patient in cardiac arrest? The components were P: adults with CA; V: actions of emergency medical

regulation professionals; and O: return of spontaneous circulation (ROSC) and response time.[7]

We searched from February through May 2025. We used the following Medical Subject Headings (MeSH) terms: Heart Arrest; Death, Sudden, Cardiac; Out-of-Hospital Cardiac Arrest; Emergency Medical Service Communication Systems; Telemedicine Emergency Care; Telemedicine; Emergency Medical Dispatch; Emergency Medical Dispatcher; Prehospital Care; Emergency Medical Calls; Reaction Time; Disease Management; Health Services Research; Quality Indicators, Health Care; Outcome Assessment, Health Care; Transportation of Patients; Time-to-Treatment; and Return of Spontaneous Circulation. We searched the National Library of Medicine (PubMed), Scopus (Elsevier), The Cochrane Library, and Latin American and Caribbean Health Sciences Literature (LILACS), using the advanced search method and the title, abstract, and subject fields. We combined the descriptors according to the logic population AND variables AND outcomes, using the Boolean operators AND/OR (Box 1).

We included primary articles published in English, Spanish, or Portuguese published from 2016 to 2025. We excluded monographs, theses, dissertations, editorials, and articles that did not answer the research question.

Box 1 – Search combinations used in the LILACS, PubMed, SCOPUS, and COCHRANE databases. Fortaleza, Ceará, Brazil, 2025.

Databases	Search strategies (MeSH)
LILACS	(("Heart Arrest") OR ("Death, Sudden, Cardiac") OR ("Out-of-Hospital Cardiac Arrest")) AND (("Emergency Medical Service Communication Systems") OR ("Telemedicine Emergency Care") OR ("Telemedicine") OR ("Emergency Medical Dispatch") OR ("Emergency Medical Dispatcher") OR ("Prehospital Care") OR ("Emergency Medical calls")) AND (("Reaction Time") OR ("Disease Management") OR ("Health Services Research") OR ("Quality Indicators, Health Care") OR ("Outcome Assessment, Health Care") OR ("Transportation of Patients") OR ("Time-to-Treatment") OR ("Return of Spontaneous Circulation"))
PUBMED	((Heart Arrest) OR (Death, Sudden, Cardiac) OR (Out-of-Hospital Cardiac Arrest)) AND ((Emergency Medical Service Communication Systems) OR (Telemedicine Emergency Care) OR (Telemedicine) OR (Emergency Medical Dispatch) OR (Emergency Medical Dispatcher) OR (Prehospital Care) OR (Emergency Medical calls)) AND ((Reaction Time) OR (Disease Management) OR (Health Services Research) OR (Quality Indicators, Health Care) OR (Outcome Assessment, Health Care) OR (Transportation of Patients) OR (Time-to-Treatment) OR (Return of Spontaneous Circulation))
SCOPUS	("Heart Arrest") OR ("Death, Sudden, Cardiac") OR ("Out-of-Hospital Cardiac Arrest")) AND

	(("Emergency Medical Service Communication Systems") OR ("Telemedicine Emergency Care") OR ("Telemedicine") OR ("Emergency Medical Dispatch") OR ("Emergency Medical Dispatcher") OR ("Prehospital Care") OR ("Emergency Medical calls")) AND (("Reaction Time") OR ("Disease Management") OR ("Health Services Research") OR ("Quality Indicators, Health Care") OR ("Outcome Assessment, Health Care") OR ("Transportation of Patients") OR ("Time-to-Treatment") OR ("Return of Spontaneous Circulation")
COCHRANE	("Heart Arrest" OR "Death, Sudden, Cardiac" OR "Out-of-Hospital Cardiac Arrest" AND "Emergency Medical Service Communication Systems" OR "Telemedicine Emergency Care" OR "Emergency Medical Dispatch" OR "Emergency Medical Dispatcher" OR "Prehospital Care" OR "Emergency Medical calls" AND "Reaction Time" OR "Health Services Research" OR "Transportation of Patients" OR "Time-to-Treatment" OR "Return of Spontaneous Circulation")

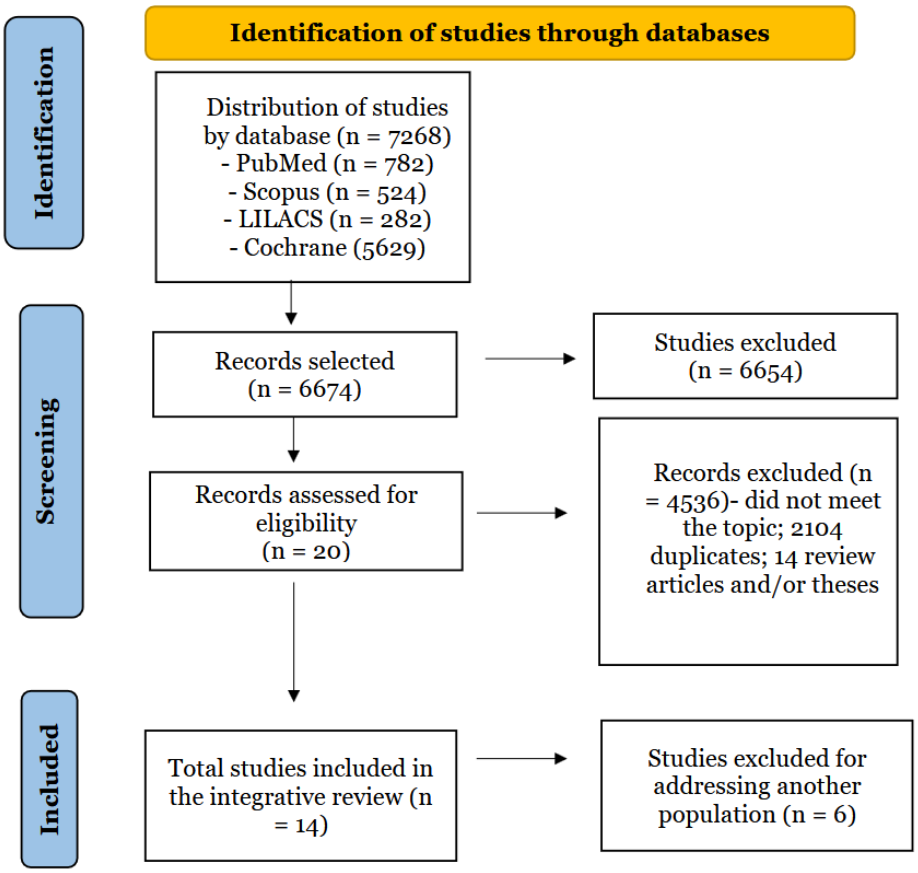
Source: Study data, 2025.

The data collection instrument (Figure 1) lists the articles that comprised the final sample and supported data extraction, helping ensure the completeness of information relevant to the study. Two independent authors conducted the search and data extraction in parallel. A third reviewer resolved disagreements.

The search identified 7,268 articles; 763 were duplicates. The reviewers excluded 6,674 because they were unrelated to the topic and selected 156 for abstract review. They then selected 20 for full-text review. After the full-text assessment, they included 14 in the final sample and excluded 6 articles.

We used the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) instrument to present the study search and selection process, as shown below. [8]

Figure 1 – Flowchart of study selection according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). Fortaleza, Ceará, Brazil, 2025.



Source: Prepared by the authors, 2025.

RESULTS

The final sample comprised 14 articles (Figure 1). The discrepancy between the number of articles identified in the literature and those selected reflects the fact that many addressed the general topic without examining interventions by the Emergency Medical Regulation Center in calls involving cardiac arrest.

We organized the results by classifying the Levels of Evidence (LE) of the studies in the sample into six levels. Level I corresponds to evidence derived from meta-analyses of multiple randomized controlled clinical trials; Level II refers to evidence from individual studies with an experimental design; Level III reflects evidence from quasi-experimental studies; Level IV concerns evidence from descriptive or nonexperimental qualitative investigations; Level V concerns evidence obtained from experience or case reports; and Level VI refers to evidence based on theories, statements, and ideas from experts in the topic under investigation. [9]

Box 2 provides information on the studies selected for the review, including code, study title, year and country of publication, study design and level of evidence, objective, and main results.

Box 2 – Characteristics of the studies included in the integrative literature review. Fortaleza, Ceará, Brazil, 2025.

Code/Study title	Year/Country of publication	Study design/LE**	Objectives	Main results
1. Lay persons alerted by mobile application system initiate earlier cardio-pulmonary resuscitation: A comparison with SMS-based system notification	2017/ Switzerland	Randomized controlled trial / I	To compare the time to initiation of cardiopulmonary resuscitation (CPR) by lay responders and/or responders alerted through a short message service (SMS) or a mobile application (APP)-based alert system.	The use of mobile applications (APPs) to alert lay responders reduced arrival time at the scene from 5.6 to 3.5 minutes compared with SMS. In addition, the proportion of lay responders who arrived first increased from 15% to 70%, resulting in higher survival.
2. Barriers to patient positioning for telephone cardiopulmonary resuscitation in out-of-hospital cardiac arrest	2017/ United States	Retrospective descriptive cohort / II	To describe barriers reported by callers when attempting to move patients onto a hard, flat surface and to assess conditions associated with overcoming those barriers.	Approximately 26% of cases involved barriers to positioning the patient on a hard surface. Groups facing barriers were less likely to initiate telephone-assisted CPR and had longer times to the first compression (276 s vs. 171 s). The presence of multiple bystanders facilitated overcoming these barriers.
3. Disparities in Telephone CPR Access and Timing During Out-of-Hospital Cardiac Arrest	2017/ United States	Retrospective observational cohort / II	To describe use and timing of 911 system response during suspected out-of-hospital cardiac arrest (OHCA) involving Spanish-speaking callers in metropolitan Phoenix, Arizona.	Spanish-speaking callers experienced significant delays: recognition of cardiac arrest took 160.6 seconds (vs 87.4 s in the group without a language barrier), and the time to the first compression was substantially longer (290.9 s vs 174.4 s).
4. Effect of bystander CPR initiation prior to the emergency call on ROSC and 30 day survival-An evaluation of 548 emergency calls	2017/ Denmark	Retrospective observational cohort / II	To assess the association between the timing of bystander cardiopulmonary resuscitation (CPR) initiation – before the emergency call versus during the emergency call after dispatcher-assisted CPR – and return of spontaneous circulation (ROSC) and	Most CPR events (65%) began during the call with dispatcher assistance. There was no significant difference in 30-day survival between CPR initiated before or during the call, but dispatcher assistance was crucial in residential settings.

			30-day survival.	
5. Unmeasured Interface in Emergency Cardiovascular Care How Do Dispatch-Assisted Telephone Cardiopulmonary Resuscitation and Bystander Training Interact?	2018/ United States	Editorial commentary / II	To improve the application of telecommunicator CPR (T-CPR) by identifying challenges to its effectiveness during real cardiac arrest events and simulated scenarios.	This editorial highlights barriers such as caller hesitation and difficulty calming the caller, which impair telephone CPR. It emphasizes the need to understand how prior layperson training interacts with dispatcher instructions.
6. Analysis of bystander CPR quality during out-of-hospital cardiac arrest using data derived from automated external defibrillators	2018/ Canada	Retrospective observational cohort / III	To determine the quality of bystander CPR during OHCA using CPR-quality data stored by automated external defibrillators (AEDs).	The study showed that laypersons performed high-quality CPR (rate of 111.2 compressions/min and depth of 5.3 cm) with good adherence to guidelines. Quality was lower only during the first minute because of delay in AED rhythm analysis.
7. A multidisciplinary approach for improving the outcome of out-of-hospital cardiac arrest in South Korea	2019/ South Korea	Retrospective cohort / II or III	To investigate the feasibility and effectiveness of real-time smartphone videoconference treatment for the management of out-of-hospital cardiac arrest.	Implementation of real-time video calls and advanced life support increased return of spontaneous circulation from 6.7% to 20% and favorable neurological outcomes from 1.9% to 6.9%.
8. Dispatcher-Assisted Cardiopulmonary Resuscitation: Differential Effects Of Landline, Mobile, and Transferred Calls	2019/ Taiwan	Prospective cohort / II	To compare the effectiveness of dispatcher-assisted cardiopulmonary resuscitation (DACPR) instructions delivered through landline calls, mobile-phone calls, and landline calls transferred to mobile phones.	Mobile-phone calls resulted in higher rates of dispatcher-assisted CPR (54% vs 47.5%) and a shorter time to the first compression (156 s vs. 174 s) than landline calls.

9. Comparison of the effects of audio-instructed and video-instructed dispatcher-assisted cardiopulmonary resuscitation on resuscitation outcomes after out-of-hospital cardiac arrest	2020/ Republic of Korea	Retrospective cohort / II	To compare the real-world effects of audio-instructed and video-instructed dispatcher-assisted cardiopulmonary resuscitation (DA-CPR) on resuscitation outcomes after out-of-hospital cardiac arrest (OHCA).	Although survival-to-discharge rates were numerically higher in the video group (14.3% vs 8.9%), the study concluded that video instruction was not statistically superior to audio instruction in improving survival in this specific cohort.
10. Delay to initiation of out-of-hospital cardiac arrest EMS treatments	2020/ United States	Retrospective observational study / II	To measure delays in the delivery of initial EMS treatments and compare them with those of other EMS systems conducting clinical trials.	The study measured critical delays: the mean time from the call to the first defibrillation was 11.7 minutes. The authors suggested using drones to deliver medications and devices as a strategy to optimize care.
11. Predictors of recognition of out of hospital cardiac arrest by emergency medical services call handlers in England: a mixed methods diagnostic accuracy study	2021/ England	Diagnostic accuracy study / II	To identify key symptom indicators and patient factors associated with correct dispatch allocation for out-of-hospital cardiac arrest (OHCA).	The phrase “not breathing” was the strongest predictor of cardiac arrest recognition (OR 3.76). In contrast, female gender and terms such as “noisy breathing” showed associations with failure to recognize the event immediately.
12. Assessment of Telecommunicator Cardiopulmonary Resuscitation Performance During Out-of-Hospital	2022/ United States	Retrospective observational study / III	To evaluate a pilot tool for capturing American Heart Association (AHA) telecommunicator CPR (T-CPR) measures and telemedicine-based T-CPR training through audio review.	Call handlers recognized cardiac arrest in 72% of cases, with a median time of 198 s to the first instructed compression. They provided instructions regarding chest recoil in only 28% of cases, suggesting a need to improve call-handler training.

Cardiac Arrest Using a Standardized Tool for Audio Review				
13. Don't call it "massage"! The importance of words during dispatcher-assisted cardiopulmonary resuscitation	2022/ Italy	Letter to the editor / IV	To understand how the actual meaning of words may become even more complex when conversations occur under stressful conditions.	The article emphasizes the importance of terminological precision; using specific terms and avoiding ambiguous words (such as "massage") is crucial so that laypersons can understand and correctly follow instructions under stress.
14. Expressions Used by Emergency Callers for Cardiac Arrest and Their Impact on Recognition by the Medical Regulation Physician	2024/ Brazil	Cross-sectional observational study / IV	To analyze categories and subcategories of words/expressions spontaneously used by laypersons in calls for cardiac arrest and their relationship with recognition of the event by medical regulation doctors.	Terms such as "not breathing" facilitate recognition of cardiac arrest by the physician, whereas expressions such as "feeling unwell" or "difficulty breathing" act as confounding factors and delay recognition.

Source: Prepared by the authors, 2025. Code*: Code; LE**: Level of evidence.

The studies, therefore, covered the period from 2017 to 2024, with the largest number published in 2017. They originated from several countries, including Denmark, Switzerland, South Korea, Taiwan, Canada, the United States, Italy, England, and Brazil. Level II studies were the most frequent in terms of evidence classification; this level refers to evidence derived from individual studies with an experimental design.

Finally, to facilitate the identification of essential elements involving the autonomy and knowledge of medical regulation professionals in vehicle dispatch for cardiac arrest, we grouped the discussion around the following themes: dispatch of rapid response vehicles to patients in cardiac arrest; cardiac arrest protocols and layperson response; language barriers; and education and support. These groupings guided the discussion because of their relevance to the topic under investigation.

DISCUSSION

The implementation of automatic or semiautomatic systems to alert and recruit lay responders trained in cardiopulmonary resuscitation (CPR) for out-of-hospital cardiac arrest (OHCA) is strongly aligned with the most recent international recommendations, including those of the International Liaison Committee on Resuscitation (ILCOR) and the American Heart Association (AHA), which emphasize the role of technology in reducing the time to CPR initiation and increasing survival rates.[10,11]

Current medical literature emphasizes that rapid activation of emergency services and early initiation of cardiopulmonary resuscitation (CPR) by laypersons are critical determinants of survival. Dispatcher support is essential because telephone instructions double bystander CPR rates and improve neurological and survival outcomes.[12,13] Standardized protocols such as “No-No-Go” (the patient is unresponsive and not breathing normally) help expedite care and support for the victim.[14]

Compared with SMS-based systems, mobile applications that activate volunteer responders further reduce arrival time at the OHCA scene and have a positive impact on survival, particularly in nonshockable rhythms, as reported in European experiences.[15]

Current evidence, therefore, strongly supports adopting app-based systems to notify and activate lay responders in OHCA, with clear benefits in response time, earlier CPR initiation, and increased survival.

The implementation of automatic or semiautomatic systems to alert and recruit laypersons trained in CPR, particularly through mobile applications, is closely aligned with international recommendations.[15] These systems offer operational advantages over SMS-based methods, including dynamic updates of volunteer locations, verification of basic life support certification, and greater selectivity in notifications, resulting in a larger proportion of lay responders arriving before emergency services.[13] European studies show that mobile

applications and shorter arrival times at the scene positively affect survival, including in nonshockable rhythms.[13]

The literature also highlights relevant operational advantages of app-based systems over SMS-based systems, including dynamic updates of volunteer locations, verification of basic life support certification, and greater selectivity in notifications.[16] Consequently, a larger proportion of lay responders arrive before conventional emergency services, allowing CPR to begin earlier.

Language barriers, particularly those involving Spanish, have a significant impact on the timeliness and effectiveness of telecommunicator-assisted CPR (T-CPR) in cardiac arrest. The literature shows that in groups both with and without language barriers, call handlers may ultimately recognize the need for CPR and begin instructions, and callers may initiate chest compressions; however, language barriers cause substantial delays at each stage. Specifically, calls involving a language barrier take significantly longer to reach recognition of the need for CPR, initiation of instructions, and the first chest compressions, which may compromise prognosis.[16,17]

Robust national basic life support (BLS) education initiatives may explain the relatively high proportion of CPR initiated before the emergency call in Denmark compared with other international studies. Over the past decade, Denmark has implemented several strategies, including mandatory BLS courses to obtain a driver's license, mass-education campaigns, and public-access defibrillation programs. An estimated 15% or more of the Danish population received CPR training between 2008 and 2010, which correlates with the sustained increase in bystander CPR rates.[18]

The literature also shows that BLS education not only increases the likelihood that laypersons will perform CPR but also promotes earlier recognition of OHCA and reduces the time to intervention. Higher bystander CPR rates reinforce the mediating effect of bystander CPR on the association between BLS education and 30-day survival.[16] Communities with a higher concentration of CPR training show not only greater willingness to act but also greater self-confidence.[17]

In summary, the data suggest that earlier bystander CPR is strongly related to the presence of multiple witnesses, witnessed status, and previous training, and that national BLS education initiatives, such as those implemented in Denmark, help explain the higher proportion of early CPR compared with other countries, with a positive impact on the OHCA chain of survival.[18]

Mobilizing responders significantly increases the rate of CPR before emergency services arrive, although evidence regarding its direct impact on overall survival remains under investigation.[19] Language barriers, educational level, and emotional factors hinder recognition of cardiac arrest.[15,16] Language barriers, particularly in emergency calls involving Spanish or other languages, may delay the initiation of care.[12,20] Strategies to overcome these barriers include specific dispatcher training to manage emotionally charged situations and the use of simplified instructions.[20-22]

CONCLUSION

This study highlighted multiple factors that directly affect the efficiency of care for out-of-hospital cardiac arrest (OHCA), particularly the autonomy of medical regulation professionals, the importance of standardized protocols, the role of dispatcher telephone support, the mobilization of lay responders through mobile technologies, and the effects of language and educational barriers on the initial emergency response.

The literature reviewed shows that rapid activation of emergency services and early initiation of cardiopulmonary resuscitation (CPR) by laypersons are major determinants of survival and neurological outcomes. Standardized protocols and mobile applications used to activate trained lay responders have proved effective and are consistent with international recommendations, including those of ILCOR and the AHA.

The analysis also showed that barriers such as language and educational level compromise response times and the quality of support provided, particularly in multicultural settings. The experience of countries such as Denmark shows that large-scale investment in basic life support (BLS) education produces consistent improvements in early CPR rates and survival.

In addition, mobilizing responders has significantly increased the incidence of early CPR, although further research should quantify its direct impact on survival. Language barriers, educational level, and emotional factors also remain important challenges to the immediate recognition of and response to cardiac arrest.

The integration of professional training, strategic use of technology, well-defined protocols, and public policies for CPR education is, therefore, essential to strengthen the chain of survival. Investing in these pillars represents a concrete opportunity to save lives and reduce inequalities in cardiovascular emergency care, offering a promising path toward expanding access to early CPR and improving survival.

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