

Vanessa Vieira de Sousa <sup>1</sup>

 0000-0003-2171-9770

Jean Carlos Facundo  
Ferreira <sup>2</sup>

 0009-0009-9427-1023

Quitéria Eveline Martins  
Timbo <sup>3</sup>

 0009-0003-4700-8894

Geisy Lanne Muniz Luna <sup>2</sup>

 0000-0002-3906-8964

Erilaine Freitas Corpes <sup>4</sup>

 0000-0002-9681-3422

Gláyrton Bizerra da Costa <sup>5</sup>

 0009-0005-7711-9338

<sup>1</sup> Hospital Dr. Carlos Alberto  
Stuart Gomes. Fortaleza, Ceará,  
Brasil.

<sup>2</sup> SAMU Ceará. Fortaleza, Ceará,  
Brasil.

<sup>3</sup> Hospital Público Municipal de  
Santa Quitéria. Sobral, Ceará,  
Brasil.

<sup>4</sup> Governo do Estado do Ceará.  
Fortaleza, Ceará, Brasil.

<sup>5</sup> SAMU Ceará. Sobral, Ceará,  
Brasil.

DOI

10.54620/m791t927



Licença CC BY 4.0

# Prehospital care for airway obstruction by foreign body (FBAO): an integrative review

*Atendimento pré-hospitalar na obstrução de vias aéreas por corpo estranho (OVACE): revisão integrativa*

*Atención prehospitalaria a la obstrucción de las vías respiratorias por cuerpo extraño (OVACE): revisión integrativa*

## ABSTRACT

**Objectives:** This study aimed to analyze prehospital care in cases of foreign body airway obstruction (FBAO) in adults, highlighting the role of Emergency Medical Regulation Centers. **Methods:** An integrative literature review was conducted in PubMed, Scopus, Cochrane, and LILACS, following Mendes et al.'s methodological framework and PRISMA guidelines. From 650 initial records, six studies met the inclusion criteria. **Results:** Results demonstrated that prompt interventions, particularly those performed by laypersons, significantly improved survival and neurological outcomes. Basic maneuvers, such as back blows and abdominal compressions, remain the recommended first-line approach. The use of devices like Magill forceps proved beneficial in specific situations, whereas advanced airway management showed inconsistent effectiveness. **Conclusion:** The review concludes that community training, standardized protocols, and further clinical research are crucial to enhancing the management of FBAO in the prehospital setting.

**Keywords:** Airway obstruction; Adult; First aid; Emergency medical services.

## RESUMO

**Objetivo:** Analisar a assistência pré-hospitalar em casos de obstrução de vias aéreas por corpo estranho (OVACE) em adultos, destacando o papel das Centrais de Regulação de Urgência. **Métodos:** Trata-se de uma revisão integrativa da literatura, realizada em bases como PubMed, Scopus, Cochrane e LILACS, sem restrição de idioma ou período, seguindo as etapas metodológicas de Mendes et al. e o

protocolo PRISMA. Dos 650 artigos inicialmente identificados, seis compuseram a amostra final. **Resultados:** Os resultados mostraram que intervenções rápidas, especialmente realizadas por leigos, aumentam significativamente a sobrevida e os desfechos neurológicos. Manobras básicas, como golpes dorsais e compressões abdominais, continuam sendo o padrão recomendado. O uso de instrumentos como a pinça de Magill demonstrou benefícios em contextos específicos, embora intervenções avançadas apresentem resultados controversos. **Conclusão:** Conclui-se que a capacitação comunitária, protocolos padronizados e pesquisas clínicas adicionais são fundamentais para melhorar o manejo da OVACE no contexto pré-hospitalar.

**Palavras-chave:** *Obstrução de vias aéreas; Adulto; Primeiros socorros; Serviços de emergências médicas.*

## RESUMEN

**Objetivos:** El estudio tuvo como objetivo analizar la atención prehospitalaria en casos de obstrucción de las vías respiratorias por cuerpo extraño (OVACE) en adultos, con énfasis en el papel de los Centros de Regulación de Urgencias. **Métodos:** Se trata de una revisión integrativa de la literatura, realizada en PubMed, Scopus, Cochrane y LILACS, siguiendo las etapas metodológicas de Mendes et al. y la guía PRISMA. De los 650 artículos encontrados, seis fueron incluidos en la muestra final. **Resultados:** Los resultados mostraron que las intervenciones rápidas, especialmente las realizadas por testigos, aumentan significativamente la supervivencia y los resultados neurológicos. Las maniobras básicas, como golpes en la espalda y compresiones abdominales, siguen siendo el estándar recomendado. El uso de instrumentos como las pinzas de Magill mostró beneficios en contextos específicos, aunque las intervenciones avanzadas presentaron resultados controvertidos. **Conclusión:** Se concluye que la capacitación comunitaria, la estandarización de protocolos y nuevas investigaciones son esenciales para optimizar el manejo de la OVACE en el ámbito prehospitalario.

**Descriptores:** *Obstrucción de las vías respiratorias; Adulto; Primeros auxilios; Servicios de emergencias médicas.*

## INTRODUCTION

In the context of urgent care, the terms *urgency* and *emergency*, although related, have distinct meanings. Urgency refers to the unforeseen occurrence of a health problem, with or without potential risk to life, that requires immediate medical care. Emergency, in turn, refers to the medical finding of a condition that entails imminent risk to life or intense suffering and requires immediate medical treatment<sup>1</sup>.

Mobile prehospital care is understood as care initiated as early as possible outside the hospital setting, delivered by a multidisciplinary team guided by specific care protocols. This care encompasses assessment and first aid at the scene, stabilization of the patient, and, when necessary, safe transport to the referral hospital service<sup>2</sup>.

In the Brazilian Unified Health System (SUS), regulation is a management function that operates in an integrated manner across three dimensions: over health systems, over the production of health actions and services, and over users' access to care<sup>3</sup>. Within the Urgent Care Network, the Emergency Regulation Center receives calls, classifies and prioritizes care needs, provides guidance, defines and mobilizes available resources, and organizes referral and counter-referral flows. In this way, it coordinates the response of SAMU 192 with the other points of the network and promotes timely access to appropriate care<sup>4,5</sup>.

Foreign body airway obstruction (FBAO) is one of the most critical emergencies in urgent care services. It is characterized by partial or complete interruption of airflow due to the presence of a foreign object in the upper or lower airways. This condition can rapidly progress to severe hypoxia, cardiopulmonary arrest, and death, making early recognition and immediate performance of airway clearance maneuvers essential<sup>6</sup>. It is a common and potentially serious problem associated with significant morbidity and mortality, and it is particularly frequent among young children and older adults. However, its true incidence, especially of non-fatal episodes, is difficult to estimate, as many events are transient and do not result in hospital care<sup>7</sup>.

In adults, FBAO frequently occurs during eating and may be associated with substance use, neurological disorders, or intoxication, constituting a critical event in domestic, institutional, clinical, and out-of-hospital settings<sup>8,9</sup>.

Studies show that in children under five years of age, especially those aged one to three years, FBAO is one of the leading causes of accidental death, occurring mainly during feeding or play<sup>10</sup>. In adults, it is frequently associated with alcohol consumption, use of dentures, altered level of consciousness, and neurological diseases such as Parkinson's disease or sequelae of stroke<sup>11</sup>. Its prevalence is particularly high among older adults, which increases the relevance of the topic in the context of population aging. In urgent and emergency care services, prompt and efficient action is decisive to prevent irreversible complications, and continuous training of multidisciplinary teams is essential<sup>8</sup>.

Immediate management of FBAO in adults follows international basic and advanced life support protocols. The Heimlich maneuver (abdominal thrusts) is widely used in the initial phase and has a good success rate when performed correctly. In cases of complete obstruction or failure of the initial maneuvers, more complex interventions are indicated, such as direct laryngoscopy, cricothyroidotomy, or emergency bronchoscopy, the latter being considered the gold standard for foreign body removal in the hospital setting<sup>10,11,12</sup>.

Despite the clinical severity of FBAO, many frontline professionals, especially those working in emergency care units (UPAs), emergency departments, and prehospital services, have gaps in practical training for managing these cases. National reviews indicate that the preparation of educators, nursing professionals, and emergency teams does not always keep pace with updated protocols, which may compromise response time and effectiveness<sup>13</sup>. Investments in continuing education, realistic simulation, and educational technologies have been recommended to improve immediate care<sup>14</sup>. In this context, training qualified professionals to work in urgent and emergency care is fundamental<sup>2</sup>.

Considering the severity of FBAO in adults and its occurrence in out-of-hospital settings and emergency services, it is essential to compile and critically analyze the evidence supporting best practices for its identification and management. This integrative review aims to gather and synthesize current scientific knowledge on the care of adults with FBAO, with emphasis on the link between initial recognition, prehospital care, and the medical regulation of emergencies. It is also intended to serve as a basis for developing protocols for the Emergency Regulation Center.

## METHODS

This study is an Integrative Literature Review (ILR) with a qualitative approach, developed through a bibliographic search of scientific studies published in online databases. The review was conducted to analyze studies on the prehospital care provided to adult patients with foreign body airway obstruction (FBAO) and on the management of these cases by Emergency Regulation Centers. It followed the methodological steps proposed by Mendes et al.<sup>14</sup> and Whittemore and Knafl<sup>15</sup>, as well as the methodological guidelines of the Joanna Briggs Institute<sup>16</sup>, to ensure the systematization and reproducibility of the search, selection, and data analysis.

### Search strategy and study selection

Defining the guiding question is a fundamental step in integrative reviews, as it guides the entire methodological process and allows precise delimitation of

the studies relevant to the topic. In this study, the question was constructed using the PICO strategy, which is widely used in systematic and integrative reviews to structure clinical questions in an objective and targeted manner<sup>17</sup>.

**Chart 1** – PICO strategy used to formulate the research question. Fortaleza, Ceará, Brazil, 2025.

| Element | Components                                                 |
|---------|------------------------------------------------------------|
| P       | Adult patients with foreign body airway obstruction (FBAO) |
| I       | Prehospital care in urgent care services                   |
| C       | Not applicable                                             |
| O       | Management of cases by Emergency Regulation Centers        |

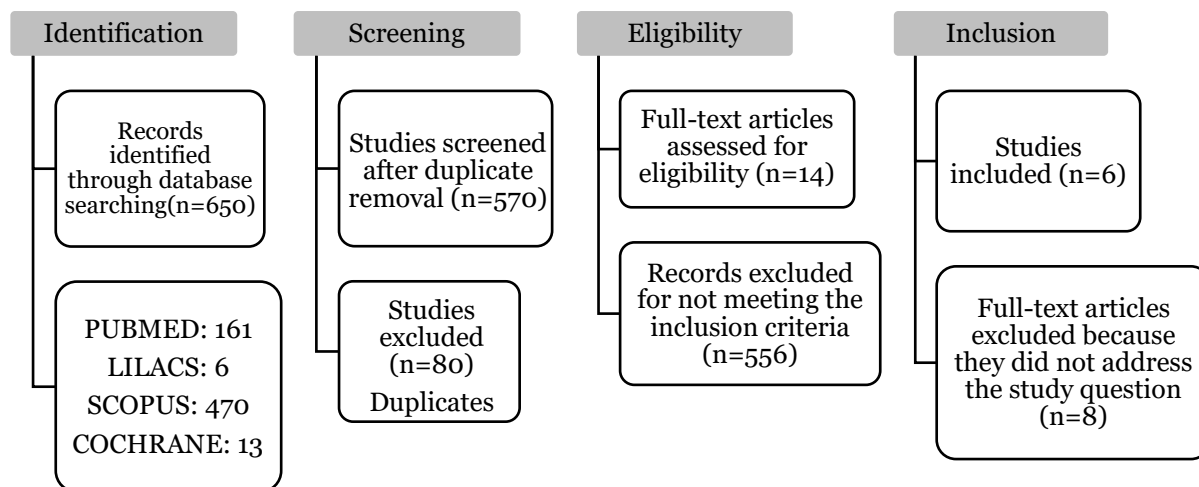
**Source:** Prepared by the authors, 2025.

Based on this structure, the search strategies were formulated using the following descriptors and keywords in Portuguese, English, and Spanish, combined with the Boolean operators "AND" and "OR": "Obstrução de vias aéreas", "corpo estranho", "emergência", "regulação médica", "pré-hospitalar", "atendimento de urgência", "foreign body airway obstruction", "emergency medical service", "medical regulation", and "prehospital care". To improve the precision and standardization of terms, Medical Subject Headings (MeSH) were used where applicable in indexed databases.

All strategies were applied on December 11, 2024, with no restrictions on language or publication period. No filters were applied, in order to increase search sensitivity. Searches were conducted in the following electronic databases: PubMed/MEDLINE, Scopus, Cochrane Library, and LILACS (Latin American and Caribbean Health Sciences Literature).

Primary studies addressing adult patients with FBAO and focusing on prehospital care and the role of Emergency Regulation Centers were included. The following were excluded: studies dealing exclusively with pediatric populations, and publications that did not address aspects related to urgent care services or medical regulation in FBAO.

**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.

## Data extraction and analysis

The studies included in this integrative review were categorized by organizing the data in a synthesis chart to facilitate analysis and comparison of the findings. This chart contains key information on each selected article, such as identification code, title, year of publication, and main results, organized according to the inclusion criteria previously defined in this study<sup>14</sup>.

In accordance with Resolution No. 510/2016 of the Brazilian National Health Council, this review does not require approval by a Research Ethics Committee, as it is a bibliographic study without direct involvement of human participants or collection of primary data<sup>18</sup>.

The search and selection of the articles comprising this review began with the combination of controlled descriptors, using Medical Subject Headings (MeSH), in the selected electronic databases. Initially, 650 studies were identified. After application of the afore mentioned inclusion and exclusion criteria, 14 articles remained, and after reading and screening, 6 studies made up the final sample of the integrative review, providing relevant evidence on prehospital care and the management of FBAO cases in adults by Emergency Regulation Centers.

Data analysis was conducted descriptively and thematically, following established guidance<sup>14</sup>, allowing the identification of trends, consolidated evidence, and gaps in the scientific literature, with emphasis on best management practices in urgent situations in the prehospital setting.

## RESULTS

The integrative analysis of the six selected studies revealed epidemiological, clinical, and care-related aspects of FBAO management, focusing on situations that progressed to out-of-hospital cardiac arrest (OHCA) and on interventions performed both by laypersons and by emergency medical services (EMS) professionals.

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

| Title                                                                                                                                                                             | Objectives                                                                                                                                                                                                          | Year | Main results                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Heimlich maneuver on self: from theory to practice <sup>19</sup>                                                                                                                  | To report a case in which an emergency physician, while choking on a foreign body, was able to perform the maneuver on himself, clearing the airway and avoiding a potentially fatal situation.                     | 2013 | The individual successfully performed the Heimlich maneuver on himself, clearing the airway and reversing the choking episode without the need for outside help. The study shows that, with prior knowledge and proper technique, the Heimlich maneuver can be effectively self-administered, reinforcing the importance of first aid training and of awareness of self-rescue techniques in emergencies. |
| Effectiveness of prehospital Magill forceps use for out-of-hospital cardiac arrest due to foreign body airway obstruction in Osaka City <sup>20</sup>                             | To evaluate the effectiveness of Magill forceps use by emergency medical services (EMS) teams in the management of foreign body airway obstruction (FBAO) in patients with out-of-hospital cardiac arrest (OHCA).   | 2014 | Prehospital use of Magill forceps was associated with better neurological outcomes after cardiac arrest caused by foreign body airway obstruction. However, in Japan, only trained EMS personnel are permitted to use them. It is important to note the limitation of the study due to its observational design.                                                                                          |
| Neurological outcomes associated with prehospital advanced airway management in patients with out-of-hospital cardiac arrest due to foreign body airway obstruction <sup>21</sup> | To compare neurological outcomes in patients who experienced out-of-hospital cardiac arrest (OHCA) due to foreign body airway obstruction (FBAO) according to the type of airway management performed by EMS teams. | 2021 | The group that received advanced airway management (AAM) had a significantly lower rate of favorable neurological outcomes than the group that did not receive AAM (OR 0.34; 95% CI: 0.19–0.62). However, survival did not differ significantly between the two groups (OR 1.08; 95% CI: 0.84–1.37).                                                                                                      |
| Toward development of the standardized dispatcher                                                                                                                                 | To develop a standardized algorithm to help emergency dispatchers provide                                                                                                                                           | 2022 | The study addresses the provision of basic first aid instructions for choking by emergency medical dispatchers. The performance of                                                                                                                                                                                                                                                                        |

|                                                                                                                                                                |                                                                                                                                                                                                                                                     |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| algorithm for telephone assistance in choking <sup>22</sup>                                                                                                    | effective telephone instructions to people who are choking.                                                                                                                                                                                         |      | these quick, simple actions by a bystander following the instructions could improve the chances of successfully resolving the choking episode. A basic assistance algorithm was synthesized and is proposed for discussion and evaluation as an evidence-based tool that may help save lives through dispatcher advice.                                                                                                                                                                                                                                                                                             |
| The effects of bystander interventions for foreign body airway obstruction on survival and neurological outcomes: Findings of the MOCHI registry <sup>23</sup> | To quantify the impact of bystander interventions in cases of foreign body airway obstruction (FBAO) on patient survival and neurological outcomes.                                                                                                 | 2024 | Bystander interventions for FBAO were independently associated with better 1-month survival and neurological outcomes. However, bystander interventions were performed in only half of the FBAO cases, with an overall success rate of only 48.4%. Efforts are needed to identify barriers to bystander intervention in FBAO and to develop simple and effective interventions. Further analyses of the registry may provide additional information in the future.                                                                                                                                                  |
| Foreign Body Airway Obstruction Resulting in Out-of-Hospital Cardiac Arrest in Denmark – Incidence, Survival and Interventions <sup>24</sup>                   | To evaluate the incidence, interventions performed, and survival outcomes in patients with out-of-hospital cardiac arrest (OHCA) caused by foreign body airway obstruction (FBAO) in Denmark, compared with patients with OHCA of other etiologies. | 2024 | A total of 321 cases were identified, 25% of which received bystander interventions. Among the interventions performed by EMS professionals, most (48%) involved endotracheal intubation, followed by the use of Magill forceps (23%). Survival was higher in cardiac arrests caused by FBAO, and a substantial proportion of patients had return of spontaneous circulation upon EMS arrival. In addition, the proportion of individuals who received bystander cardiopulmonary resuscitation was significantly higher among those whose cardiac arrest resulted from FBAO than among those with other etiologies. |

**Fonte:** Elaboração própria, 2025.

## DISCUSSION

The six studies analyzed highlight that foreign body airway obstruction (FBAO) is a potentially lethal condition, especially in children and older adults, but one with great potential for reversal when treated promptly. This finding is

supported by a systematic review conducted by the ILCOR Basic & Paediatric Life Support Task Force, which confirms that basic maneuvers (encouraging coughing, back blows, and abdominal/chest thrusts) are the foundation of prehospital care and carry a strong international recommendation, with no evidence that advanced devices are superior to traditional maneuvers<sup>23</sup>.

Data from international registries, such as the Japanese MOCHI study, point to a high potential for action by the lay community, with intervention in about 50% of cases and a significant association with higher survival and better neurological outcomes<sup>25</sup>. This finding is reinforced by a recent population-based study showing that initial maneuvers performed by laypersons significantly reduce the risk of failure to remove the foreign body. In that study, back blows as the first intervention were associated with a higher likelihood of relieving the obstruction, better survival, and fewer complications compared with chest thrusts or abdominal thrusts alone<sup>19</sup>.

Studies have also shown important gaps in the standardization of telephone guidance for FBAO cases<sup>22,26</sup>. This scenario is consistent with current reviews, which show a scarcity of studies on telephone assistance in emergencies other than cardiac arrest and suggest that clear dispatch protocols may improve performance and response in emergency situations<sup>22</sup>.

Recent reviews of suction devices, such as LifeVac®, indicate that, despite efficacy demonstrated in simulations, cadaver studies, and case reports, there are still no robust randomized clinical trials capable of demonstrating their superiority or equivalence relative to traditional maneuvers<sup>23,26</sup>. In randomized manikin studies, the device showed high success rates; however, these findings cannot be directly extrapolated to real clinical situations<sup>26</sup>. Therefore, organizations such as the Resuscitation Council UK and ILCOR do not yet recommend the routine use of these devices<sup>23</sup>.

The findings of Wolthers et al.<sup>24</sup> corroborate the results observed in the other studies included in this review, particularly regarding the importance of early interventions by bystanders and prehospital teams in FBAO. The study identified 321 cases of out-of-hospital cardiac arrest resulting from FBAO, and a significant proportion of patients received bystander interventions before the arrival of the emergency medical service. These findings reinforce the results of the MOCHI registry<sup>25</sup>, which demonstrated an association between lay interventions and better neurological and survival outcomes.

Furthermore, the study found that most patients required advanced airway interventions, mainly endotracheal intubation, followed using Magill forceps<sup>24</sup>. These results are consistent with the findings of Sakai et al.<sup>20</sup>, in which prehospital use of Magill forceps was associated with better neurological outcomes in patients with cardiac arrest due to FBAO. Nevertheless, the frequent need for advanced airway management also highlights the clinical severity of these cases and reinforces the importance of early recognition and rapid initial action to prevent progression to severe hypoxia and cardiopulmonary arrest. In this context, Otomune et al.<sup>21</sup> observed that patients who underwent prehospital

advanced airway management had worse neurological outcomes, suggesting that such interventions often occur in more severe situations and when relief of the obstruction is delayed.

Another relevant finding was the higher survival rate in cardiac arrests caused by FBAO compared with other etiologies<sup>24</sup>. This result suggests that, although potentially fatal, FBAO is a potentially reversible condition when managed quickly and appropriately, corroborating the evidence presented by Couper et al.<sup>23,21</sup>, which highlights the effectiveness of basic clearance maneuvers performed early. Thus, the findings reinforce the need to expand first aid training for the lay population and to strengthen prehospital care protocols and telephone assistance for choking and airway obstruction.

In this context, the Emergency Regulation Center (ERC) plays a key role in the appropriate management of FBAO cases, as it is responsible for triage, assessing the severity of the situation, and referring the patient to the appropriate service within the health network. Therefore, the implementation of SAMU 192 protocols contributes to decision-making and appropriate transport, promoting continuity and safety of care.

### Critical synthesis

**Priority of basic maneuvers:** Robust evidence, from both international guidelines and field studies, supports back blows, abdominal/chest thrusts, and encouraging coughing as the first-line choices, with high success rates and safety<sup>21,27</sup>.

**Community empowerment:** The greatest impact on positive outcomes occurs when laypersons act quickly. Data from MOCHI and other cohorts reinforce the importance of the systematic dissemination of training<sup>28,29</sup>.

**Role of the dispatcher:** There is a lack of structured protocols for telephone assistance in FBAO cases. Models tested in CPR (such as video calls) serve as a blueprint for developing effective versions of "First Aid-Call Guidance" for choking and obstructive emergencies<sup>30,31</sup>.

**Mechanical devices:** Although promising, they still require validation in controlled clinical trials before being incorporated into recommended practice<sup>22</sup>. This discussion reinforces the findings of the six core articles and places them in an international context, providing more consistent arguments for practice recommendations and ongoing research on FBAO.

Supporting this perspective, a study published in *Cadernos ESP* showed that educational interventions focused on teaching anti-choking maneuvers led to a significant improvement in participants' performance and self-assurance after training. This reinforces that structured health education programs are valuable strategies to expand response capacity in airway obstruction emergencies, reducing risks and strengthening confidence in performing first aid maneuvers<sup>32</sup>.

Practical recommendations include expanding community training in FBAO so that the lay population can recognize the condition early and perform initial clearance maneuvers. In addition, the importance of standardizing remote

assistance protocols is emphasized, ensuring greater safety and speed in remote support. In the prehospital setting, the judicious use of advanced interventions by emergency medical services should be prioritized, ensuring that such measures are used appropriately and only when truly indicated. Finally, strengthening clinical research, especially in pediatric and geriatric populations, is essential to fill knowledge gaps and guide more effective practices in these more vulnerable groups.

## CONSIDERAÇÕES FINAIS

Foreign body airway obstruction remains a highly lethal medical emergency, but one with potential for reversal if addressed early. Action by lay bystanders, through interventions such as the Heimlich maneuver or manual extraction, proved effective and was associated with higher survival and a better neurological prognosis.

The use of devices such as Magill forceps may be beneficial in specific contexts, whereas advanced airway management lacks evidence of effectiveness and may even be harmful. Telephone assistance protocols still have important shortcomings, which reinforces the need for international standardization and continuous training of the population.

## REFERÊNCIAS

1. Conselho Federal de Medicina. Resolução CFM nº 1.451, de 10 de março de 1995. Estabelece estruturas para prestar atendimento nas situações de urgência-emergência nos prontos-socorros públicos e privados. Brasília, DF: CFM; 1995.
2. do Carmo Santos J, Correia Pequeno AM, Magalhães Júnior AG, Negreiros FD da S. Processo de trabalho de enfermeiros no atendimento pré-hospitalar móvel. Cadernos ESP [Internet]. 2021 [citado 14 set 2026];15(1):49-62. Disponível em: <https://cadernos.esp.ce.gov.br/index.php/cadernos/article/view/487>
3. Tofani LFN, Rebequi A, Guimarães CF, Furtado LAC, Andreazza R, Chioro A. Dimensões e regimes da regulação na Rede de Atenção às Urgências e Emergências: um jogo de disputas entre o interesse público e o privado. Cad Saúde Pública. 2023;39(1):e00161222. doi:10.1590/0102-311XPT161222.
4. Brasil. Ministério da Saúde. Portaria GM/MS nº 2.048, de 5 de novembro de 2002. Aprova o Regulamento Técnico dos Sistemas Estaduais de Urgência e Emergência. Diário Oficial da União. 2002 nov 12.
5. Brasil. Ministério da Saúde. Portaria de Consolidação nº 3, de 28 de setembro de 2017. Consolida as normas sobre as redes do Sistema Único de Saúde. Anexo III: Rede de Atenção às Urgências e Emergências. Diário Oficial da União. 2017 out 3.
6. Couper K, Abu Hassan A, Ohri V, Patterson T, Perkins GD. Removal of foreign body airway obstruction: a systematic review of interventions. Resuscitation. 2020;151:115–25.

7. Dodson H, Sharma S, Cook J. Foreign Body Airway Obstruction [updated 2024 Jul 17; cited 2026 Sep 14]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2026 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK553186/>
8. Zhou C, Xu F, Lin Z, Liu Y, Yang Y. Foreign body aspiration: a review of current strategies for management. *Shanghai Chest*. 2021;5:38.
9. Mihai PD, Abbas M, Lin K, Kassab C, Tran N, Thakur K, et al. Foreign body aspiration in adults: clinical presentations and bronchoscopic outcomes. *Western Medical Research Conference Abstracts*. 2024 Jan 18–20; Los Angeles, CA.
10. Stancheva R, Markov D, Radev R. Foreign bodies in the lower airway in children: brief review and clinical experience. *Children*. 2025;12(1):xx–xx.
11. Olasveengen TM, Mancini ME, Perkins GD, et al. Causes and risk factors for foreign body airway obstruction. *Br Dent J*. 2019;226(2):94–7.
12. Lima LS, Sales DG, Silva RA, Moura RP, Freitas JRG. Conhecimento dos profissionais de educação infantil sobre a obstrução de vias aéreas por corpo estranho (OVACE) em crianças: revisão integrativa. *Rev JRG Estud Acadêm*. 2024;7(14):1–9.
13. Carvalho FLS, Galindo Neto NM, Sá GGM, Ferreira AM, Silva TM, Santos AH. Tecnologias para educação em saúde sobre obstrução das vias aéreas por corpo estranho: revisão integrativa. *Rev Esc Enferm USP*. 2020;54:e03670.
14. Mendes KDS, Silveira RCCP, Galvão CM. Revisão integrativa: método de pesquisa para a incorporação de evidências na saúde e na enfermagem. *Texto & Contexto Enferm*. 2008;17(4):758–64.
15. Whittemore R, Knafl K. The integrative review: updated methodology. *J Adv Nurs*. 2005;52(5):546–53.
16. The Joanna Briggs Institute. Manual de revisões sistemáticas JBI para evidência baseada em saúde. Adelaide (AU): JBI; 2024.
17. Santos CM, Pimenta CAM, Nobre MRC. A estratégia PICO para a construção da pergunta de pesquisa e busca de evidências. *Rev Lat Am Enfermagem*. 2007;15(3):508–11.
18. Brasil. Ministério da Saúde. Conselho Nacional de Saúde. Resolução nº 510, de 7 de abril de 2016. Dispõe sobre as normas aplicáveis a pesquisas em Ciências Humanas e Sociais. *Diário Oficial da União*. 2016 mai 24;Seção 1:44–6.
19. Andelic N. Dispatcher-assisted guidance for airway obstruction emergencies. *Prehosp Disaster Med*. 2013;28(3):211–216.
20. Sakai T, Kitamura T, Iwami T, Nishiyama C, Tanigawa-Sugihara K, Hayashida S, et al. Effectiveness of prehospital Magill forceps use for out-of-hospital cardiac arrest due to foreign body airway obstruction in Osaka City. *Scand J Trauma Resusc*

- Emerg Med. 2014;22:53.  
doi:10.1186/s13049-014-0053-4.
21. Otomune K, Hifumi T, Jinno K, Nakamura K, Okazaki T, Inoue A, et al. Neurological outcomes associated with prehospital advanced airway management in patients with out-of-hospital cardiac arrest due to foreign body airway obstruction. *Resusc Plus*. 2021;7:100140.  
doi:10.1016/j.resplu.2021.100140.
  22. Birkun A. Dispatcher guidance for out-of-hospital emergencies: gaps and opportunities. *Emerg Med J*. 2022;39(4):267-273.
  23. Couper K, Aufderheide TP, et al. Removal of foreign-body airway obstruction: ILCOR systematic review and recommendations. *Resuscitation*. 2020;153:152-164.
  24. Wolthers SA, Holgersen MG, Jensen JT, Andersen MP, Blomberg SNF, Mikkelsen S, et al. Foreign body airway obstruction resulting in out-of-hospital cardiac arrest in Denmark – incidence, survival and interventions. *Resuscitation*. 2024;198:110171.  
doi:10.1016/j.resuscitation.2024.110171.
  25. Norii T, Igarashi Y, Yoshino Y, Nakao S, Yang MA, Albright D, et al. The effects of bystander interventions for foreign body airway obstruction on survival and neurological outcomes: findings of the MOCHI registry. *Resuscitation*. 2024;199:110198.
  26. LifeVac® and Dechoker® efficacy studies: systematic review of suction-based airway clearance devices. *Front Pediatr*. 2021;9:638174.
  27. Couper K, Abu Hassan A, Ohashi-Fukuda N, Yeung J, Böttiger BW, Sakamoto T, et al. Removal of foreign body airway obstruction: a systematic review of interventions. *Resuscitation*. 2020;156:174-181.
  28. Travers AH, Perkins GD, Berg RA, Castren M, Considine J, Escalante R, et al. Part 3: Adult basic life support and automated external defibrillation: 2020 International Consensus on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science with Treatment Recommendations. *Resuscitation*. 2020;156:A35-A79.
  29. Okubo M, Iwami T, Kitamura T, Kiyohara K, Nishiyama C, Nishimoto Y, et al. Association of dispatcher-assisted cardiopulmonary resuscitation with outcomes in out-of-hospital cardiac arrest: a nationwide, population-based cohort study. *Lancet*. 2022;399(10336):918-926.
  30. Kitamura T, Iwami T, Kawamura T, Nagao K, Tanaka H, Hiraide A; Implementation Working Group for the All-Japan Utstein Registry of the Fire and Disaster Management Agency. Nationwide public-access defibrillation in Japan. *N Engl J Med*. 2010;362(11):994-1004.
  31. Hardeland C, Olasveengen TM, Lawrence R, Lore M, Wik L, Steen PA, et al. Comparison of telephone CPR instructions: standard versus continuous chest compressions. *Resuscitation*. 2017;114:21-27.

32. Bolle SR, Scholl J, Gilbert M. Video emergency calls: the potential of 3G mobile phones for providing

emergency medical services in remote and rural areas. *J Telemed Telecare*. 2009;15(5):264-267.

---

#### Corresponding Author

Erilaine Freitas Corpes  
[erilaineefc@gmail.com](mailto:erilaineefc@gmail.com)

---

#### Associate Editors

Genilton da Silva Faheina Junior, Janaildo Soares de Sousa, Kamila Maria Oliveira Sales e Sofia de Moraes Arnaldo, Tatiana de Queiroz Oliveira

---

#### Author Contributions

**Formal analysis:** VVS, JCFF, QEMT, EFC, GBC;  
**Conceptualization:** VVS, JCFF, QEMT, GBC;  
**Data curation:** VVS, JCFF, QEMT, GBC; **Writing – original draft:** GLML, EFC; **Supervision:** GLML; **Validation:** GLML; **Visualization:** GLML, EFC.

---

#### How to cite

Sousa VV de, Ferreira JCF, Timbo QEM, Luna GLM, Corpes EF, Costa GB da. Prehospital care for airway obstruction by foreign body (FBAO): an integrative review. *Cadernos ESP*. 2837;20:e2837.

---

#### Conflict of Interest

There are no conflicts of interest.

---

**Received:** July 15, 2026

**Published:** September 28, 2026

---

#### Funding

Self-funded.