EDITORIAL

Minimizing the loss of potential organ donors in Spanish emergency departments: strategies to improve outcomes

Minimizar la pérdida de potenciales donantes en los servicios de urgencias españoles: estrategias para la mejora de resultados

Carolina Sánchez Marcos

Organ donation is one of the greatest achievements of modern medicine, with a tremendous impact on patient survival and quality of life. Spain has maintained international leadership in donation and transplantation for decades, thanks to the model developed by the National Transplant Organization (ONT) and to various public awareness campaigns promoting donation.[1] However, even within this context of excellence, there remain areas for improvement, such as in emergency departments (EDs). The shortage of organs continues to be a global health challenge, with growing waiting lists and a significant mortality rate among patients awaiting transplantation. One of the bottlenecks in the donation process lies in its initial phase: identification. Without detection, there is no donor, and without a donor, there is no donation. This issue is even more evident in clinical settings other than intensive care units (ICUs), which traditionally have played a lesser role in donor identification. This is the case in EDs, despite their high patient volume and the substantial donor potential they represent.[2]

The study by Grau Carmona *et al.*[3] analyzes the loss of potential donors in EDs of non-transplant hospitals in the Community of Madrid (Spain) and provides data that invite reflection and action. The authors found that one-third of patients who died with catastrophic brain injury, without apparent absolute clinical contraindications, were not considered potential donors. This finding—consistent with the literature on donor loss in EDs and ICUs—highlights the need to optimize early detection and coordination in non-transplant hospitals.[4] Factors such as age younger than 70 years, prolonged mechanical ventilation, and the availability of neurosurgery were associated with a greater likelihood of being considered candidates, underscoring the importance of hospital infrastructure and advanced life support in this process.[3] These findings, along with results from a Canadian study[5] estimating that improved identification could have increased the overall donation rate by more than 10%, and from a Dutch study[6] reporting that 29% of all organ donors with catastrophic brain injury in participant centers were identified in the ED, confirm that a significant proportion of potential donors are lost due to lack of protocols, insufficient training, or inadequate coordination.

In recent years, the Spanish Society of Emergency Medicine (SEMES) and the ONT have promoted a consensus recognizing the strategic role of emergency professionals within the donation pathway.[7] This document emphasizes the need for awareness and understanding of the different donor profiles, as well as the implementation of standardized protocols that ensure homogeneity and reduce the loss of opportunities.

In Spain, data from the OHSCAR registry illustrate the magnitude of the problem: in 2022 alone, more than 13,000 out-of-hospital cardiac arrests with attempted resuscitation were recorded.[8] A portion of these patients, after death, could have been eligible for controlled or uncontrolled donation after circulatory death (uDCD). uDCD —significantly expanded in Spain over the past decade—has become an essential resource given the progressive decline in donors after brain death. Early identification in the ED of patients eligible for uDCD is, therefore, a high-impact strategy.[9,10]

Traditionally, donor identification has been the responsibility of ICUs. However, there is increasing evidence supporting the strategic role of EDs as key sites for initial detection.[4] With the recent establishment of Emergency Medicine as a medical specialty in Spain,[11-13] there is an opportunity to include specific training in donation within the residency curriculum.

Multicenter studies have demonstrated that the implementation of multidisciplinary programs in EDs significantly increases the notification of potential donors and the number of effective donations. International experience shows that structured training has a direct impact on improving detection. For example, in South Korea, a dedicated educational and support program for identifying donors with severe brain injury in EDs—patients at risk of progressing to brain death—resulted in an increase in detection rates up to 70.9%.[14] This demonstrates that emergency physicians can play a

Author Affiliations: Servicio de Urgencias y Coordinación de Trasplantes Direccón Médica; Hospital Clínic, IDIBAPS, Universitat de Barcelona, Barcelona, Spain.
Author Contributions: The author has confirmed his authorship in the document of author responsibilities, publication agreement and assignment of rights to EMERGENCIAS.
Corresponding Author: Carolina Sánchez Marcos. Servicio de Urgencias. Hospital Clínic. C/ Villarroel, 170. 08036 Barcelona, Spain.
Email: csanchezm@clinic.cat
Article Information: Received: 26-9-2025. Accepted: 29-9-2025. *Online:* 8-10-2025.
Editor in Charge: Òscar Miró.

crucial role in the early notification of potential donors to transplant coordinators.

The ideal detection model involves having a dedicated unit of physicians solely focused on donation within multidisciplinary coordination teams with well-established protocols. Another multicenter study showed that up to 35% of potential donors were never considered eligible due to the absence of structured detection protocols and lack of a dedicated transplant coordinator.[15] Therefore, in the absence of a dedicated coordination unit, it is essential to ensure proper training of health care professionals in donation.

Therefore, the challenge of minimizing the loss of potential donors in Spanish EDs requires a broad and coordinated approach. Based on the evidence reviewed, various strategies could be applied in Spanish EDs, such as continuous education using accredited programs and clinical simulations to incorporate donation into the training of future emergency medicine residents. Additional measures could include protocolizing the donation process with algorithms and multidisciplinary assessment, as well as the presence of transplant coordinators within EDs. Public awareness also remains crucial to maintaining trust in the Spanish model, promoting donation at the end of life—even in ED settings.

The Spanish donation model is internationally recognized as a benchmark, and a future improvement could be to reinforce the role of EDs as the first line of detection. Every patient with catastrophic brain injury treated in this setting represents not only the possibility of saving up to eight lives but also an opportunity to strengthen the principle of solidarity that underpins the Spanish transplant system.

Conflict of Interest Disclosures: None reported.

Funding: The author declares the non-existence of funding related to this article.

Ethical Responsibilities: All authors have confirmed the maintenance of confidentiality and respect for patients' rights in the author's responsibilities document, publication agreement and assignment of rights to EMERGENCIAS.

Article commissioned and internally reviewed by the Editorial Board.

References

1 Matesanz R, Domínguez-Gil B, Coll E, de la Rosa G, Marazuela R. Spanish experience as a leading country: what kind of measures were taken? Transplant International. 2011;24:333-43.
2 Akeely YY, Al Otaibi MM, Alesa SA, Bokhari NN, Alghamdi TA, Alahmari MS, et al. Organ donation in the emergency department: awareness and opportunities. Cureus. 2023;15:e49746.
3 Grau Carmona T, Mateos Rodríguez A, Escriba Bárcena A, Polonio Anguas MJ, De la Torre Toyos MC, Del Rio Gallegos FJ. Análisis de las pérdidas de potenciales donantes en el servicio de urgencias de los hospitales no trasplantadores de la Comunidad de Madrid. Emergencias. 2025;37:427-32.
4 Iserson KV, Schears RM, Padela AI, Baker EF, Moskop JC. Increasing Solid Organ Donation: A Role for Emergency Physicians. J Emerg Med. 2022;63:702-8.
5 McCallum J, Yip R, Dhanani S, Stiell I. Solid organ donation from the emergency department - missed donor opportunities. CJEM. 2020;22:701-7.
6 Witjes M, Kotsopoulos AMM, Otterspoor L, Herold IHF, Simons KS, Woittiez K, et al. The Implementation of a Multidisciplinary Approach for Potential Organ Donors in the Emergency Department. Transplantation. 2019;103:2359-65.
7 Martínez Soba F, Masnou Burrallo N, de la Rosa Rodríguez G, Povar Marco J; grupo colaborativo ONT/SEMES. El profesional de urgencias y el proceso de donación. Recomendaciones del grupo colaborativo ONT-SEMES. Emergencias. 2016;28:193-200.
8 Ruiz Azpiazu JI, Fernández Del Valle P, Escriche MC, Royo Embid S, Fernández Barreras C, Azeli Y, et al. Incidence, treatment, and factors associated with survival of out-of-hospital cardiac arrest attended by Spanish emergency services: report from the Out-of-Hospital Spanish Cardiac Arrest Registry for 2022. Emergencias. 2024;36:131-9.
9 Reed MJ, Lua SB. Uncontrolled organ donation after circulatory death: potential donors in the emergency department. Emerg Med J. 2014;31:741-4.
10 Matesanz R, Domínguez-Gil B, Coll E. Uncontrolled non-heart beating donation: need, opportunity and challenge. Med Intensiva. 2013;37:221-3.
11 Vázquez Lima MJ. La Especialidad de Medicina de Urgencias y Emergencias ya es una realidad en Spain. Emergencias. 2024;36:321-3.
12 Connolly J. La aprobación de la Medicina de Urgencias y Emergencias como especialidad en Spain: otro país más que se suma al interés por alcanzar una medicina de alta calidad siguiendo los estándares europeos. Emergencias. 2024;36:324-5.
13 González Armengol JJ, Aramburu Vilariño F, Toranzo Cepeda T, Vázquez Lima MJ. El largo camino de SEMES hacia la especialidad de Medicina de Urgencias y Emergencias en Spain. Emergencias. 2024;36:367-74.
14 Kim K, Lee SH, Kim DH, Lim D, Kang C, Jeong JH, et al. Effect of a multidisciplinary program to improve organ donation in the emergency department. Eur J Emerg Med. 2021;28:58-63.
15 Vincent JL, Shehabi Y, Walsh TS, Inoue S. Identification and referral of potential organ donors in non-transplant hospitals: Results of an international survey. Int Care Med. 2019;45:713-22.