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<https://doi.org/10.1016/j.anpede.2020.05.014>  
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## 25 years of paediatric cardiopulmonary resuscitation courses in Spain<sup>☆</sup>



## 25 años de cursos de reanimación cardiopulmonar pediátrica en España

Dear Editor:

The Spanish Group on Paediatric and Neonatal Cardiopulmonary Resuscitation (GERCPPyN) is a multidisciplinary working group created in 1992 by the Asociación Española de Pediatría (Spanish Association of Pediatrics, AEP) and composed by physicians that are members of its affiliated societies of paediatric intensive care, neonatology, paediatric emergency medicine and primary care. One of its key objectives is to promote and expand course in cardiopulmonary resuscitation (CPR) in Spain.<sup>1</sup> To this end, the group develop a structured and standardised course curriculum including multiple activities among which we would highlight the design and development of theoretical and practical courses at different levels—basic life support, intermediate life support, advanced life support, neonatal CPR, refresher courses and instructor courses—aimed at the general population, parents of at-risk children and students and professionals in different health care fields, also developing the contents for these courses.<sup>2–4</sup> The learning objectives of the courses are recognising children at risk of cardiac arrest, preventive measures, basic knowledge and skills in CPR and development of the necessary psychomotor skills to perform CPR manoeuvres in a quick, coordinated and sequential fashion in newborns, infants and older children. The GERCPPyN developed the expansion of the paediatric CPR courses through the creation of teaching groups, the

appointment of representatives in each autonomous community and the establishment of an accreditation system to ensure the quality of CPR courses.

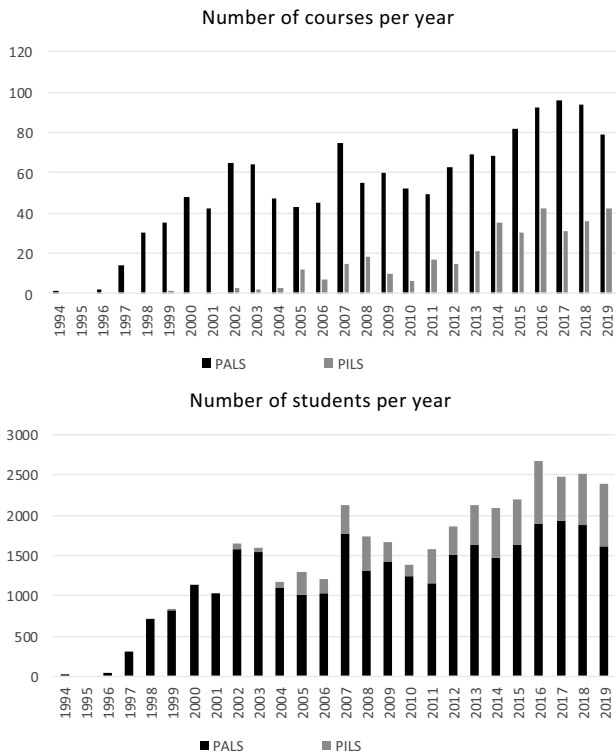
To study the activity carried out in the past 25 years, we conducted a retrospective study through the review of the records of courses accredited by the GERCPPyN between 1994 (date of the first workshop) and December 2019. We included courses in paediatric advanced life support (PNALS), paediatric and neonatal intermediate and basic life support with automatic external defibrillator (PNIBLS-AED), CPR certification renewal courses (CPRCR) and CPR instructor courses (CPRIT). We did not include courses conducted outside of Spain.<sup>5</sup> We analysed the number of courses offered and number of trained individuals in each province and autonomous community, and the ratio of the number of courses to the size of the population as an approximation of the number of health care professionals that these courses are for. We analysed the trends incourses and compared the 1994–2009 and 2010–2019 periods.

In these 25 years, there were a total of 1788 courses (1367 on PNALS, 338 on PNIBLS-AED, 14 for CPRCR and 69 for CPRIT) received by 39 671 trainees (30 797 on PNALS, 6858 on PNIBLS-AED, 312 for CPRCR and 1704 for CPRIT).

Fig. 1 presents the temporal trends in courses and trainees. When we compared the 2 periods, we found a significant increase in the number of courses in the past 10 years (from  $46 \pm 28$  to  $106 \pm 28$  a year;  $P < .01$ ) and the number of trainees receiving them (from  $1088 \pm 670$  to  $2227 \pm 445$  a year;  $P < .01$ ). In recent years there has been an increase in the number of courses on heartsaver CPR, which evinces the adaptation of CPR education to the needs of health care professionals. On the other hand, we have to highlight the small number of renewal courses, which may be explained by trainees taking the complete course again and providers not undergoing renewal courses at regular intervals.

Fig. 2 presents the distribution of courses and trainees per autonomous community in relation to the number of inhabitants, revealing substantial regional differences.

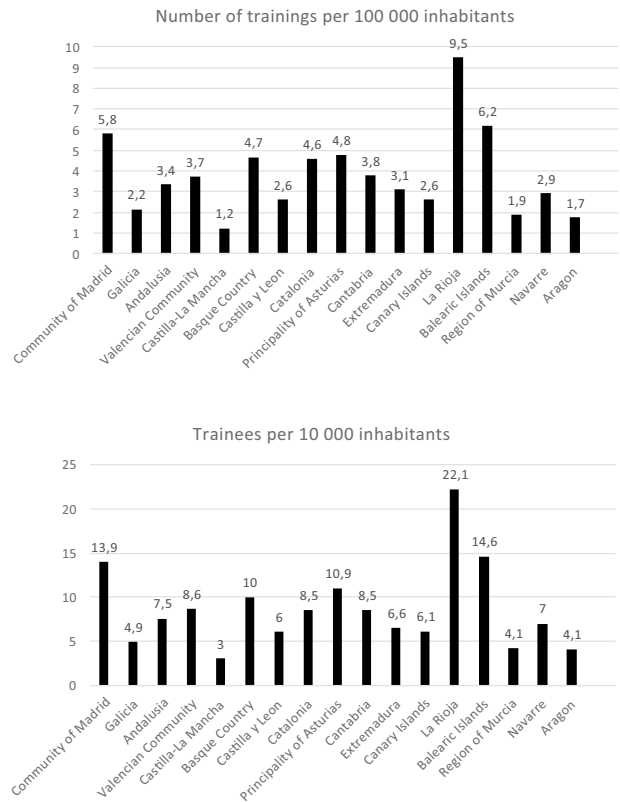
<sup>☆</sup> Please cite this article as: López-Herce J, Manrique I, Carrillo Á, Calvo C, Manrique G. 25 años de cursos de reanimación cardiopulmonar pediátrica en España. *An Pediatr (Barc)*. 2021;95:51–53.



**Figure 1** Temporal trends in the number of courses and trainees in paediatric life support. Comparison of 1994–2009 and 2010–2019 periods. PALS, paediatric advanced life support; PILS, paediatric intermediate life support.

There are several limitations to our study. First of all, while most courses in paediatric CPR in Spain have been delivered by members of the GERCPyN, we were not able to document every such course because some institutions have not gone through the process of accreditation. Secondly, we did not assess the quality or outcomes of the instruction nor the satisfaction of course participants with the education received.

In conclusion, the GERCPyN has succeeded in expanding CPR courses<sup>1–4</sup> to the entire territory of Spain, although with an uneven geographical distribution, although it has yet to achieve the institutionalization of paediatric CPR course in health care and education organizations. It is a dire situation that certification in paediatric CPR is not compulsory for residents in paediatrics, paediatricians and other health care professionals that may have to manage a paediatric victim of cardiac arrest. Therefore, measures must be adopted to reinforce and institutionalise teaching groups and ensure equal access to paediatric CPR courses, in addition to establishing systems to ensure refresher courses at regular intervals.



**Figure 2** Distribution of paediatric life support courses and trainees by autonomous community in relation to the size of the population.

### Acknowledgments

We thank every instructor that participated in the expansion of paediatric CPR education in Spain and the members of the boards of the Spanish Group on Paediatric and Neonatal Resuscitation.

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<https://doi.org/10.1016/j.anpede.2020.05.013>

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## Donation after circulatory death. What is the opinion of pediatric intensive care professionals?



### Donación en asistolia controlada. ¿Qué opinan los profesionales de cuidados intensivos pediátricos?

Dear Editor,

Donation after circulatory death (DCD), also known as controlled asystole donation, is a new method of donation that is added to the traditional approach of donation after brain death. In Spain, DCD is practiced in adult patients and is in its initial stages when it comes to the paediatric population.<sup>1,2</sup> Donation after circulatory death is contemplated in critical patients when the decision to withdraw or withhold life-sustaining treatment (W/WLST) has been made due to the futility of available treatments.<sup>2</sup> Both processes (shared decision-making about W/WLST and consideration of DCD) must be conducted objectively, independently and with coordination of the professionals managing the critical child and the transplant team in each hospital.

Since this is a novel strategy, and taking into account the uncertainties and ethical dilemmas that it may generate, we conducted an anonymous non-standardised survey of health professionals working in paediatric intensive care units (PICUs) in Spain. The aim of the survey was to find out the perceptions about and clinical approaches to donation and DCD of health care professionals, especially those involved in the care of critically ill children.

We made the questionnaire available to PICU paediatricians and nurses through the website of the Sociedad Española de Cuidados Intensivos Pediátricos (Spanish Society of Paediatric Intensive Care, SECIP) and social media (Twitter®), accepting responses submitted in January and February 2020.

We analysed 86 valid responses corresponding to 66 paediatricians (76.7%), 10 nurses and 10 medical residents in paediatrics. They worked in paediatric or mixed units (63.6% with 10 or fewer beds). Most were female (69.7%) and predominantly aged 30–40 years (45.3%) or 40 and 50 years (31.4%). **Table 1** presents the main findings of the survey, and **Table 2** the degree of agreement with donation under 3 possible circumstances (after brain death, after WLST in a patient admitted to the PICU and after W/WLST in a patient in palliative care).

We found that the typical respondent profile corresponded to a female paediatrician aged 30–50 years employed in a PICU with fewer than 10 beds. Although in general respondents worked in units where very few donations took place, most had participated in the donation process at least once and would like to become donors if they found themselves in that situation in the future. Most reported that their units had protocols for donation and for W/WLST. Although respondents had been involved in the past in the process of informing families, 3 out of 4 were not satisfied with their training on the subject. Nearly all were familiar with the concept of brain death, whereas 1 in 3 did not know the criteria used to define circulatory death. Although all participants agreed that children could become donors after brain death, 9.3% was unsure about or disagreed with contemplating donation after W/WLST. This percentage rose to 18.6% when it came to patients receiving palliative care.

Donation after circulatory death is a challenge in paediatric practice. It is framed in a new health care reality in which paediatric mortality is very low and death frequently occurs in the context of decisions regarding W/WLST made in consultation with the family.<sup>3</sup> This new approach is not limited to critically ill patients but may also be con-

☆ Please cite this article as: Agra-Tuñas MC, Gómez-Sáez F, García-Salido A, Rodríguez-Núñez A. Donación en asistolia controlada. ¿Qué opinan los profesionales de cuidados intensivos pediátricos?. *An Pediatr (Barc)*. 2021;95:53–54.