

Role of the Emergency Services in organ donation

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It is no secret that Spain is the number one country in the world in terms of organ donation and transplantation. For the more initiated, nor is it a secret that this is largely due to a peculiar organizational model established by the National Transplant Organization (ONT in Spanish) 20 years ago¹. This model, actually a form of management, is based on a series of pillars widely described in the literature, but basically focuses on an institutional figure - the transplant coordinator^{2,3}. These professionals, mostly intensive care specialists, are well trained to detect any potential donor (a person who has just died or will die in a state of brain death) and implement the whole process that then follows (maintenance, diagnosis of death, family interview etc.) without the slightest hitch.

The success of this model, world-renowned for its efficacy, is therefore based on having focused the work involved on health professionals: in their training, coordination, motivation and their organization⁴. There have been no large investments in futile campaigns or donor registries which have proved a failure in many countries. The system that has developed in the last 20 years is one that leaves nothing to chance or improvisation in an area mainly limited to hospital Intensive Care Units (ICU).

For, in reality, organ donation occurs mostly after brain death and this occurs after mechanical ventilation and therefore the UCU. This is the critical point and there is little debate about its relevance and the need to provide adequate attention.

But on the way to the ICU there are several links which determine whether the potential donor actually becomes one or even that this possibility is raised. Any physician is aware that a young person who has suffered a head injury in a traffic accident may evolve to brain death and be a potential donor. However, this scenario only ac-

counted for 8% of organ donors in Spain in 2008 (Figure 1). The vast majority, about two thirds, were cases of stroke in mostly elderly people. Up to 44% of donors were over 60 and 23.4% more than 70 years of age. Figure 2 shows the maximum age of donors of transplanted organs in Spain during the last 10 years. It is probably surprising for many to learn that 89 year-old liver and kidneys, a 79 year-old heart and a 70 year-old lung have been successfully transplanted. The conclusion is clear: there is no maximum age for organ donation. A donor should not be excluded on the grounds of chronological age without first having assessed the biological state of organs for possible transplantation.

An elderly patient arriving at the emergency department with severe stroke can be treated in many different ways and with varying degrees of aggressive or conservative therapy, all of them legitimate and defensible. Assuming that the undisputed absolute priority is the patient's life, he/she may be treated in the emergency department, admitted to the internal medicine department, a stroke unit or ICU. At times, and faced with the expected irreversibility of the picture, they may even return home after appropriate explanation and consent of the relatives.

And here it should be noted that in these cases where nothing more can be done for the life of the patient, life can still be given to others through organ donation. Although it may be thought that the attitude towards these patients is standardized, there is nothing further from the truth. A careful consideration of the healthcare process at different hospitals in Spain or other countries reveals remarkable differences in clinical practice. Factors such as the workload at a general hospital, and the emergency department in particular, availability of ICU beds, the composition of the population served, and especially and most important of all the attitude of the attend-

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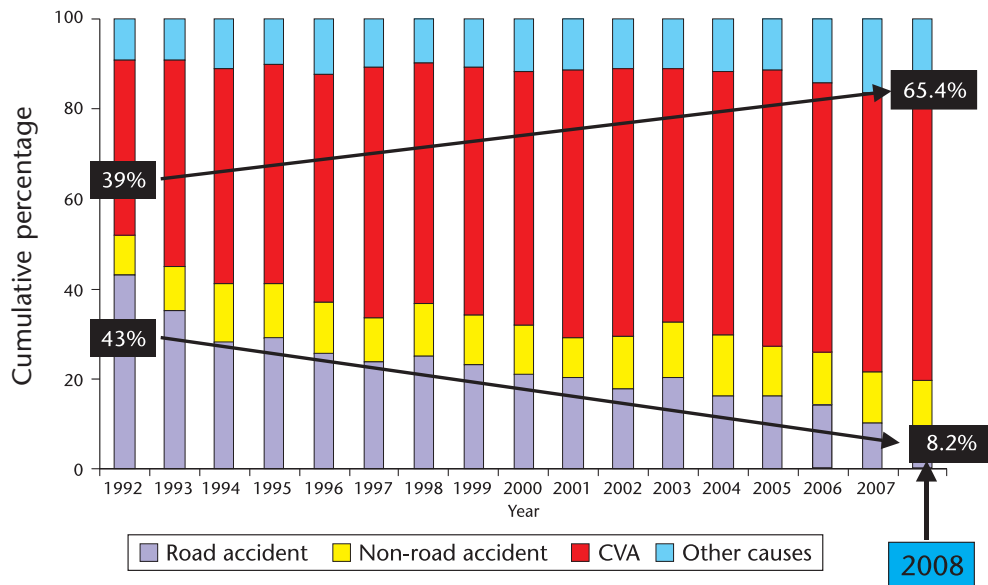


Figure 1. Cause of death for organ donors in Spain. Ac.: Accident. CVA: cardiovascular accident or stroke.

ing physician will radically change the patient care approach⁵.

Analysis of the real situation in Spain

Although the number of donors in Spain maintains an upward trend, the index of donors per million population (pmp) - the standard internationally used to compare countries or regions - is stable at 33 - 35 donors pmp, as a result of the sharp population growth during recent years. In 2008, we had 34.2 donors pmp, the highest rate in the world, more than double the 16.8 of the European Union and well above the 26.6 of USA⁶.

Every year there are 4-6 autonomous communities (AC) with over 40 donors pmp, almost always including the Basque Country, Asturias and especially Cantabria in the north of Spain, and the Canary Islands⁷.

From these data, in 2007 the ONT began to develop a roadmap of organ donation in Spain for the future, called "PLAN DONACIÓN 40", widely agreed among AC professionals and leaders, which is currently being implemented⁸. The objective is simple: if 4-6 AC often exceed 40 donors pmp, there is no reason why the rest can not achieve similar figures. Hence the name of the plan, which aims to achieve this donation rate across the entire Spanish state. Using a bench-

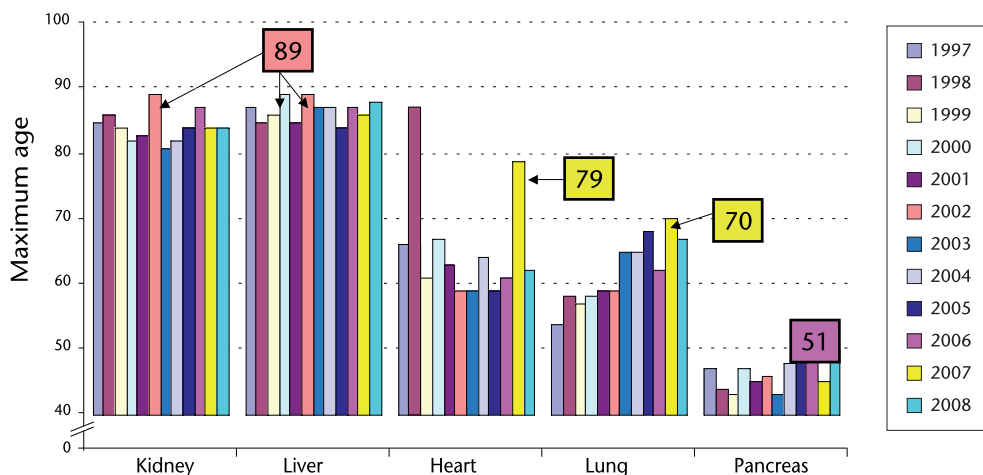


Figure 2. Maximum age of organ donors in Spain.

marking method⁹, we systematically analyzed successful organ donation to identify the apparent reasons for this success and immediately started to plan strategies to be implemented in all Spanish hospitals⁸.

One of the points that emerged from this study was good coordination between emergency services and ICU. The paradigm is probably the AC of La Rioja⁹. With just over 300,000 inhabitants, and without neurosurgery, for years this AC had an annual average of 1-2 donors, meaning 3 - 6 donors pmp, which meant it occupied the last place of all the AC. The arrival in 2004 of a new coordinator, an intensive medicine specialist, and the establishment of a perfect system of connection with the emergency department, where a physician was nominated as the contact person, resulted in a dramatic and unprecedented increase by 2007 - the figure was 74.2 donors pmp (without neurosurgery!), a figure never before reached anywhere in the world.

This is not the only example. The Hospital de la Vega Baixa in Alicante, with an operating system similar to San Pedro Hospital in Logroño, and also without neurosurgery, maintains a steady rate of local donation at 50 donors pmp., much higher than other hospitals of similar size and complexity, which cannot be explained by differences in the type of population served. A considerable number of hospitals with good ED - UCI - TRANSPLANT COORDINATION connection show donor rates that are significantly higher than the national average.

Another point highlighted in the "PLAN DONACIÓN 40" is the enhancement of donation programs in cardiac arrest¹¹, currently present in a structured way in Madrid and Barcelona and sporadically in other places, representing about 5% of total donation. The aim is to extend these programs to medium-large cities (so as to include critical masses of people currently not reached). Here the role of the emergency services is fundamental for developing these programs, as evidenced daily where they are currently functioning. Undoubtedly, the experience gained will be instrumental in developing new programs, for both the training of emergency service professionals and the whole complicated logistics required for this type of donation.

The future: a need for greater cooperation

Fairly obvious conclusions follow from all the above points. One way to increase the already

high rates of organ donation in Spain is greater involvement of the emergency services. Greater and smoother connection is therefore necessary between the ONT and its network of coordinators on the one hand, and on the other with the whole body of emergency physicians through their scientific society SEMES. The ONT currently runs intensive training activities for medical residents of intensive care medicine through an agreement with their scientific society SEMICYUC, and it is our firm intention to develop something similar with emergency physicians in the near future.

Some communities such as Andalusia, conscious of the importance of this pathway for improvement, have begun preparing to train their emergency physicians on aspects concerning organ donation. At the national level, the excellent relationship between SEMES and the ONT are leading to an agreement on medium to long-term collaboration that involves joint training activities, development of action protocols and, in short, a whole area of cooperation that can only benefit both parties. During 2009 and early 2010 the first training courses supported by both entities have already begun.

At a more local level, after analyzing existing formulas for success in various hospitals, probably the best strategy involves nominating a staff physician in each emergency department who liaises with the transplant coordination team and acts as mediator with the rest of the service regarding all aspects of organ donation.

In short, emergency service professionals already play a key role in organ donation in many parts of Spain, and the available data indicates that they can become the mainstay of future increases in this activity in our country. Cooperation between ONT and SEMES on the one hand, and between transplant coordinators and emergency physicians at each hospital on the other, constitutes the clearest and shortest route for further improvement in organ donation in Spain today. Many lives depend on this project, and it is our duty to see that it comes to fruition.

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