

Spain: A Leader in Harvesting Hearts for Transplantation

Spain is a world leader in harvesting organs for transplantation. Rafael Matesanz, MD, director of the Organización Nacional de Trasplantes in Spain, talks to Mark Nicholls about what lies behind this success and how other countries are following the model.



Heart transplantation programmes in many countries are limited because of a shortage of donor organs, and this is a matter of great concern. Yet Spain seems to be bucking the trend, successfully increasing the number of donor hearts and other organs that are made available through an innovative national programme.

Not only has the Organización Nacional de Trasplantes' (ONT) in Spain been successful in procuring organs, but that success has been sustained since the body was first established in 1989. For cardiac surgeons, it means that hearts are more readily available; for patients, it means a reduced waiting time for transplantation surgery.

The ONT works closely with heart surgeons on the donor programme. Dr Rafael Matesanz, director of the ONT, says, "All technical decisions about patient priority and heart allocation are discussed and adopted in close cooperation with cardiologists and heart surgeons. The results are reviewed periodically and adapted to any new circumstances."

As a result of the programme, waiting times and waiting lists in Spain have decreased during the last few years. For example, in a country with a population of 44 million, heart transplantation waiting lists fell from 116 patients in 2004 to 85 patients in 2005, a reduction of 26.7%. Waiting times fell from 74 to 63 days during the same period, with a mortality rate for patients on waiting lists of 6.4%.

Dr Matesanz, who developed the ONT system, says, "Spain is the only country with a sustained increase of organ donation during the last 17 years." There has been a rise from 550 to 1546 annual donors and from 14.3 to 35.1 donors per million of the population. This is for all organs, not just hearts. "It is not an episodic increase, and some of the Spanish regions are even over 40 donors per million. So, it is a very strong and consolidated system," he adds.

Comparable figures (Figure 1) show that the United Kingdom has 12.8 organ donors per million of the population; Germany, 14.8; Italy, 21; France, 22.2; and Austria, 24.8. In the United States, the rate is 25.5 per million. Figures for heart transplantations show that Spain carries out 6.5 operations per million of the population; the United Kingdom, only 2.6; France, 5.8; Italy, 6.0; Austria, 6.9; and the

United States, 4.7. In 2005, Spain carried out 287 heart transplantations—about 6% of all heart transplantations in the world.

It is hardly surprising that a number of other countries are now following the Spanish model, with increasing success. Dr Matesanz explains, "The best adaptation is in Tuscany in northern Italy, which is expected to reach a figure of 40 donors per million for 2006." He adds, "We are working now in close cooperation with Latin America, where, for instance, Argentina has doubled its organ donation rate from 6 to 12 donors per million, Uruguay will reach 25 donors per million in 2006, and Colombia has increased organ donation by 50% during the last year."

Spain attributes its success to its transplantation coordination network. Whereas in the United Kingdom, transplantation coordinators are based in renal transplantation centres, in Spain, they are based at the site of organ donation. The prime function of the Spanish local donation team is to detect potential organ donors within intensive care units. Dr Matesanz says, "The key elements to the Spanish model, which has improved deceased organ donation, is a coordination network at national, regional, and hospital levels." He explains, "In theory, Spain has a law of presumed consent, but from a practical

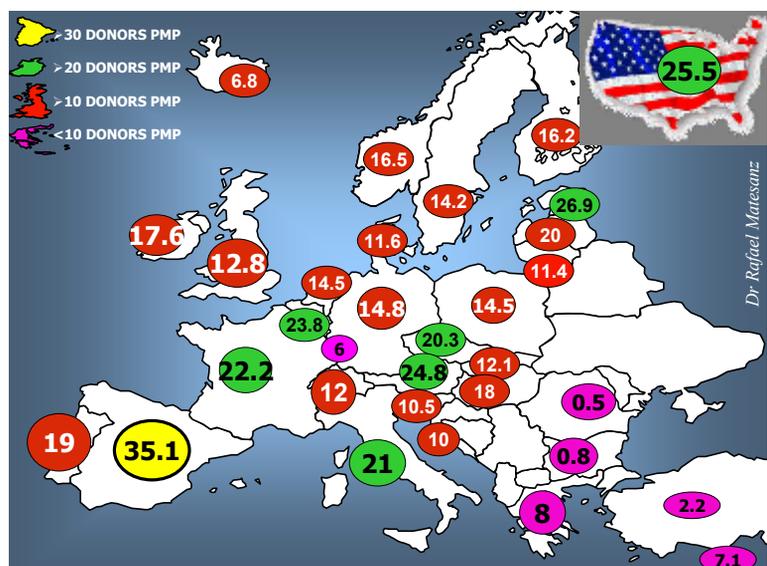


Figure 1. Chart showing comparable figures for organ donation across Europe per million of the population in 2005, and for the US (inset, top right).

point of view, family consent is always asked, and the wishes of the relatives are always respected.” During the past few years in Spain, the family refusal rate has remained stable at around 20%, compared with about 40% in the United Kingdom.

The national and regional authorities fund the first 2 levels, which are the interfaces between the politicians and the professionals, with all the technical decisions about transplantations taken by consensus in a regional council. Dr Matesanz adds, “The third level, that of the hospital coordinator, should be a medical doctor, usually helped by nurses in the big hospitals, who preferably works on a part-time basis and who is located in the hospital.” Continuous brain-death audits are performed by hospital transplantation coordinators.

Dr Matesanz says, “The central office of the ONT acts as the support agency in charge of organ sharing, transport, waiting list management, transplantation registries, statistics, and general and specialised information. It can act to improve the whole process of organ donation and transplantation.”

A significant percentage (about 15%) of organs are retrieved in smaller hospitals without neurosurgery facilities; in these situations, where the whole process cannot be performed, the regional and national offices provide external support. Dr Matesanz explains, “The funding from regional and national health administrations is important, particularly for smaller hospitals. Otherwise, the sustained procurement activity, especially of small, nonuniversity, nontransplantation hospitals, becomes practically impossible.” Another element is the need for constant medical training and education for new and existing transplantation coordinators and for the development of various training programmes for health professionals, specifically dedicated to every step of the process. This includes donor detection and management, legal aspects, family approach, organisational aspects, and management of resources.

Public information is also important in maintaining awareness of the programme among the Spanish population, with hospital and regional coordinators trained in media communication and in managing negative publicity. This training is backed by an adequate legal background on issues such as definition of brain death, organ retrieval after obtaining the consent of the family, and the requirement that there be no compensation for donation or grafted organs.

The successful increase in organ donation during the 1990s has been attributed to the Spanish model approach rather than to any change in Spanish legislation, which has remained unchanged since 1979. One of Spain’s leading cardiac specialists explains that there is close cooperation between ONT and surgeons. Dr Alberto Juffe, MD, PhD (left), head of cardiac surgery at the Hospital Juan Canalejo, La Coruña, explains that there is a single list of recipients for all cardiac transplantation centres in Spain.

He says, “When a heart donor is available, the ONT informs the surgeons or the cardiologists, who are responsible

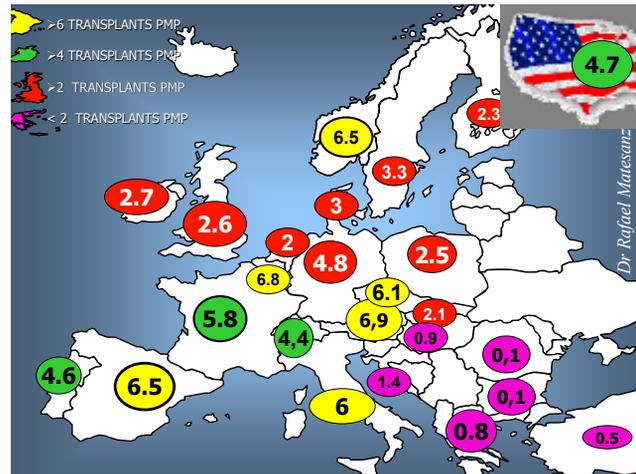


Figure 2. Chart showing comparable figures for heart transplants per million of the population in 2005 for Europe and the US (inset).

for performing the donor–recipient matching. A single national list of all patients listed assures the fairness of the Spanish mode.” He continues, “Preference for organ allotment is based on the date of inclusion in the waiting list for patients with the same clinical status.”

He adds that if the donor is from an autonomous community with an active transplantation program, the donor remains in the community, with the only exception being for an emergency case in another area. “This arrangement encourages both the medical profession and the community to work together to increase the number of donors, which, in turn, increases the number of transplantations performed in the specific community,” he said.

The Juan Canalejo Hospital’s heart transplantation programme began in 1991 and has performed 529 orthotopic heart transplantations (mean 33 a year). There are 14 heart transplantation programmes across Spain, with periodic meetings between the different groups and the ONT to analyse emerging problems and to discuss the criteria for organ allotment.

Dr Juffe says, “There is absolute confidence on the part of the transplantation teams regarding the ONT. They rely entirely on it to administer the transplantation candidates’ lists. I believe trust is the basis for the sustainability of the system.”

Speaking to *Circulation: European Perspectives in Cardiology* last year² as he stepped down as director of transplant service at Papworth Hospital near Cambridge, United Kingdom, John Wallwork, FRCS, FRCP, acknowledged that UK cardiologists are looking at Spain’s success in obtaining donor organs. He pointed out that organ donation, rather than funding limitations, remains the critical restriction on the number of transplantations. Other European countries are sure to follow.

Mark Nicholls is a freelance medical writer.

References

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