Organ donation and transplantation in Mexico, is everything solved?

Donación de órganos y trasplantes en México, ¿todo está resuelto?

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In 1954, in Boston, United States, was the first successful kidney transplant performed in humans. In 1963, in that same country, Hardy carried out the first lung transplant, and Starzl, the first liver transplant. In 1967, in South Africa, Barnard performed the first heart transplant.

In Mexico, in 1963, doctors Manuel Quijano, Regino Ronces, Federico Ortiz Quezada and Francisco Gómez Mont performed the first kidney transplant from a living donor at the National Medical Center (CMN – *Centro Médico Nacional*) of the Mexican Institute of Social Security (IMSS – *Instituto Mexicano del Seguro Social*), today CMN Siglo XXI.¹ In 1976, at the National Institute of Nutrition (currently National Institute of Medical Sciences and Nutrition "Salvador Zubirán" [INCMNSZ - *Instituto Nacional de Ciencias Médicas y Nutrición "Salvador Zubirán"*]), Dr. Héctor Orozco carried out the first auxiliary liver transplant, with a pediatric donor graft, in an adult female patient; in 1985, Dr. Orozco performed the first orthotopic liver transplant, also at INCMNSZ.² In 1988, Dr. Rubén Argüero performed the first heart transplant at the Specialty Hospital of IMSS *La Raza* Medical Center.³ In 1989, doctors Jaime Villalba Caloca and Patricio Santillán performed the first lung transplant at the National Institute of Respiratory Diseases.⁴ All these "first transplants" in Mexico took place in the capital of the country.

Obtaining a heart with effective beats for transplantation purposes transformed the culture related to

brain death: it favored the development of transplant programs, not only of the heart but of other organs and tissues, since from then on, using biological material started being allowed. The procurement of organs and tissues from people with brain death was promoted, which in Mexico was accompanied by successive reforms and adaptations to the General Statute of Health with regard to organ and tissue donation and transplantation. This way, an opportunity was opened to the benefit of numerous patients.

Thirty-one years after the first heart transplant, the scenario in Mexico is characterized by a shortage of donations and transplants. There is an unmet demand that grows year after year, even when, in 2017, there were 255 authorized centers for kidney transplantation, which makes our nation one of the countries with the largest number of them in the world; regarding other organs such as liver, heart, lung and pancreas, it is the country with the highest number of authorized transplantation centers in Latin America.⁵ Nevertheless, the processes related to donation and transplantation suffer from a lack of standardization, comparable quality, supervision, analysis and strict adherence to protocols that enable assessing the results in authorized centers in order to grant or revoke licenses when the opinion of an *ad hoc* committee thus recommends.

In addition to recurrent financial problems, there is uncertainty regarding the continuity of, and support to, transplantation programs by federal authorities. There is a documented lack of inter-institutional

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Figure 1. Rates of organ donation from brain-dead donors per million population in different countries of Latin America, according to Global Observatory on Donation and Transplantation data (<http://www.transplant-observatory.org/>) corresponding to 2018.

collaboration in agreements and information on inter-institutional productivity that includes private hospitals. In Mexico, reflecting on the distributive inequality of donations and transplants is necessary, which is a problem the fractionation of the National Health System, among other factors, has contributed to.

An important measure to correct this trend would be the establishment of fair inter-institutional collaboration agreements that are open to public knowledge and that contribute to minimize the distrust and the privileged position of some sectors with regard to others. Said agreements must create mechanisms that in practice overcome the division of the National Health System and drive to a universal health system, that make of the right to receive a transplant a reality without prejudice for being affiliated to one health institution or another.

An exercise that reveals the productivity of Mexico's National Transplantation System, currently known as the National Donation and Transplantation Subsystem (SNDT – *Subsistema Nacional de Donación y Trasplante*), is the comparison of the rates of donated organs obtained from people with brain death per million population in various Latin American countries in 2018, an information that stems from the Global Observatory on Donation and Transplantation (<http://www.transplant-observatory.org/>). The rates are higher than those of Mexico in most analyzed Latin American countries, which shows that, although organ transplantation absolute numbers in Mexico have increased, when the figures are expressed as rates per million population, cadaveric organ donation in Mexico is observed to have not had a significant increase over the last 40

years,⁶ which explains the increasing number of patients waiting for an organ in our country (Fig 1).

Together, these elements of analysis characterize SNDT as a system that lacks a common and comprehensive program that groups both health institutions and private hospitals, as well as a definition of objectives, goals, indicators and growth strategies; in addition, it lacks inter-institutional collaboration mechanisms or possible remuneration to the personnel that enable the efficiency of SNDT members. In a few words, SNDT lacks planning, leadership, programs, and requires deep reengineering.

An omnipresent characteristic of donation-transplantation programs in Mexico has been an orientation towards creating a "donation culture", under the assumption that the main obstacle to the performance of transplantations is family refusal; little attention is given to measuring and evaluating the efficiency of medical processes and sub-processes of hospitals that are authorized for these activities. It is necessary for the flaws or limitations in the donation process to be identified beyond family refusal.

Organ donation is a process that involves various stages, each one with sub-processes where services, departments and multiple health professionals interact; in the course of these sub-processes, there are setbacks, inefficiency and shortages. Although the family interview is important, it constitutes only one of those sub-processes and there is a tendency to forget that the other ones –of medical, technical, logistical or resource management-type– can hinder or obstruct the willingness to donate.

Changes in hospital dynamics are required in order to improve donation processes, and not only attributing the low number of donations and transplants to the refusal of potential donor relatives. We must strive for programs that guarantee quality and facilitate internal and external auditing in hospitals and in the various medical services involved, in order to continuously improve them and eliminate obstacles that prevent reaching figures similar to those of countries that are successful in organ donation and transplantation. It is clear that there is a need to make a stop along the way and carry out a critical analysis in order to improve the results and rearrange whatever is required to reach international standards.

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