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THE LATIN ORGAN DONATION PROGRAMME (LODP) - PROGRAMME LATIN DE DON D'ORGANES (PLDO): AN EFFECTIVE REGIONAL INITIATIVE TO INCREASE ORGAN DONATION IN SWITZERLAND

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Summary - The first federal transplant law was implemented in July 2007 with the obligation to promote quality and efficiency in the procedures for organ and tissue donation for transplantation. The Latin Organ Donation Programme (LODP) was created in 2008 with the aim to develop organ donation in an area covering 2.2 million people; 29% of the Swiss population, involving seven Latin cantons containing 17 public hospitals. A 70% increase in the number of utilised donors (UD) between 2008 and 2010 can be attributed to the implementation of various effective measures by the LODP and has enabled the procurement of 4.1 organs per donor, greatly exceeding the European average of three. We now hope that similar organisations will be put into place throughout Switzerland as the results show that LODP has successfully professionalised the organ donation system.

Introduction

Organ shortage is a worldwide problem, especially in Switzerland, where the demand for organ and tissues for transplantation continues to rise[1] and where donation rates are among the lowest in Europe. Between 2008 and 2010 the Swiss donation rates showed little variation: 11.8, 13.3, 12.6 donors per million population (pmp), compared with an average of 16 donors pmp in European countries in 2008[2]. Different improvement measures have been suggested, such as financial remuneration, reciprocal models, amendments to the law, but all of these proposals are still under discussion[3,4]. We aim to demonstrate how the organisation of a network can improve organ donation in a specific area in Switzerland, which has persistent low donation rates despite the introduction of the federal transplant law in 2007. We have analysed the figures over a four year period covering the time prior to the introduction of the LODP together with our initial two years of activity. We also intend to establish a baseline of staff attitudes, skills and knowledge in the donation process.

Situation in Switzerland

The Swiss Federal Transplant Law (TxL) of 2004 was finally implemented in July 2007[5], promoting personal autonomy of the deceased person regarding organ donation. The law insists on the independence of the intensive care teams (involved in end of life patient care) from the transplant team (Art. 11), with the desire to promote qual-

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ity and efficiency in the procedures for organ and tissue donation for transplantation.
The responsibilities of the intensive care staff are explicitly described in the Transplant By-Law of 20075, clearly stating that the cantons (provinces) must ensure that hospitals with intensive care units (ICUs) must define procedures concerning organ and tissue donation and ensure their application on a 24 hour basis. This Swiss legislative framework defines new and binding obligations to which every canton and every ICU must comply. To deal with these new requirements, the LODP was created by the heads of ICUs who joined together to form a network within the French and Italian areas of Switzerland[6].

The Latin Organ Donation Programme: LODP

The purpose of the LODP is to optimise the identification and management of organ donors and to ensure that organ and tissue recovery takes place in a respectful manner in all of the partner hospitals. The LODP is supporting all the public hospitals within the French and Italian regions of Switzerland in their duties, following the enforcement of the TxL on 1st July 2007. This program, under the authority of the Geneva-Vaud Association, was approved by the Public Health Ministries of French and Italian speaking cantons of Switzerland. With the creation of LODP, the Latin provinces allotted a budget to fund the positions of Local Donor Coordinators (LDCs) in the public hospitals and also for the central structure. The start-up date of the LODP was 1st July 2008; an evaluation was conducted after two years.
The LODP consists of a central structure which employs a full-time General Coordinator, an executive committee made up of four intensive care specialists, two of whom are medical directors of their respective hospitals, plus a representative of the Romandie University Centre for Transplantation. There is also a consultative committee where different professionals involved in organ donation are represented. The LODP has 17 network partners; ten hospitals which can identify and transfer potential donors to reference centres plus seven hospitals which can organise in-house procurement, including four with a neurosurgery department and two university transplant hospitals. As mentioned above, each hospital has designated at least one LDC (nurse or physician) a member of the intensive care team. Their mandates specifically meet Art. 56 of the Transplant Law[5] and Arts. 45-47 of the Transplant By-Law[5], which allows them to fulfil their missions. The positions of the LDCs (activity rate of 20% to 100% depending on the size and mission of the hospitals) are funded by the political authorities of the Latin provinces. The LDCs are in close contact with the central structure of the LODP and in particular with the General Coordinator, whose role is to organise training sessions, give support and find solutions to problems as well as supplying documentation to the partner hospitals (procedures, courses, etc.). The missions of the LDCs are mainly: the development and distribution of procedures related to organ and tissue donation and the introduction of a quality control programme in this area, together with training and information of the medical-nursing staff, especially in acute hospital areas (emergency room, ICU, anaesthesia, operating room) involved in organ and tissue donation.
The university hospitals of Geneva and Lausanne have employed Transplant Procurement Coordinators (TPCs) since the 1990's and outlying hospitals which can provide in house organ recovery can request the transfer of a TPC to attend the coordination process and organ recovery as required. During their first year of activity the TPCs attended numerous organ procurements in outlying partner hospitals, a service which is greatly appreciated by the teams involved. In addition a PLDO hotline has been established to help doctors faced with legal medical or logistical issues regarding the donation process.
Support is given to the relatives (whether organ recovery took place or not) and we strive to ensure that relatives are treated with compassion.

Methods and materials

The Donor Action (DA) methodology[7] is based on the principles of quality management as defined by the International Organization for Standardization (ISO). This is a rigorous analytical approach which uses data from individual ICUs to provide insights into all the processes involved in a hospital's donation processes and from there to introduce planned improvements with the objective of achieving quality in those processes. It is composed of three parts: the Medical Record Review (MMR), the Hospital Attitude Survey (HAS) and the DA system database. The MMR is a validated analytical tool used to measure the gap between potential and actual donors and to indicate when and where in the process the potential donors are missed. The HAS is a questionnaire to assess staff attitudes, skills and knowledge in the donation process. The DA system database is used to analyse the existing processes, to pinpoint problem areas and thus provide the basis for managed change.
The DA methodology had been running in a small number of our hospitals since 1999 and was introduced into all of our partner hospitals from 2008. We analysed the data from 3922 medical records, collected from 17 hospitals, which had been entered into the Donor Action database for our region, for the period between January 2007 and December 2010. This includes data on possible, potential, eligible, actual and utilised donors.

The HAS was carried out between 2007 and 2009 in most of the LODP hospitals; 2835 questionnaires were distributed to healthcare professionals in acute hospital areas (emergency room, ICU, anaesthesia, operating room) involved in organ and tissue donation.
The LDCs were specifically trained in the organ donation process with a special emphasis on the implementation of protocols and the organisation of training sessions for hospital staff. They have also been trained to carry out both parts of the Donor Action® programme[7]. This has tool has provided us with a baseline, enabling us to identify the needs and performance of the staff in the different hospitals. The HAS will be repeated during 2012 to find out whether the measures which have been introduced have been useful and /or effective. The findings are reported to the staff concerned and the individual hospital medical directors.

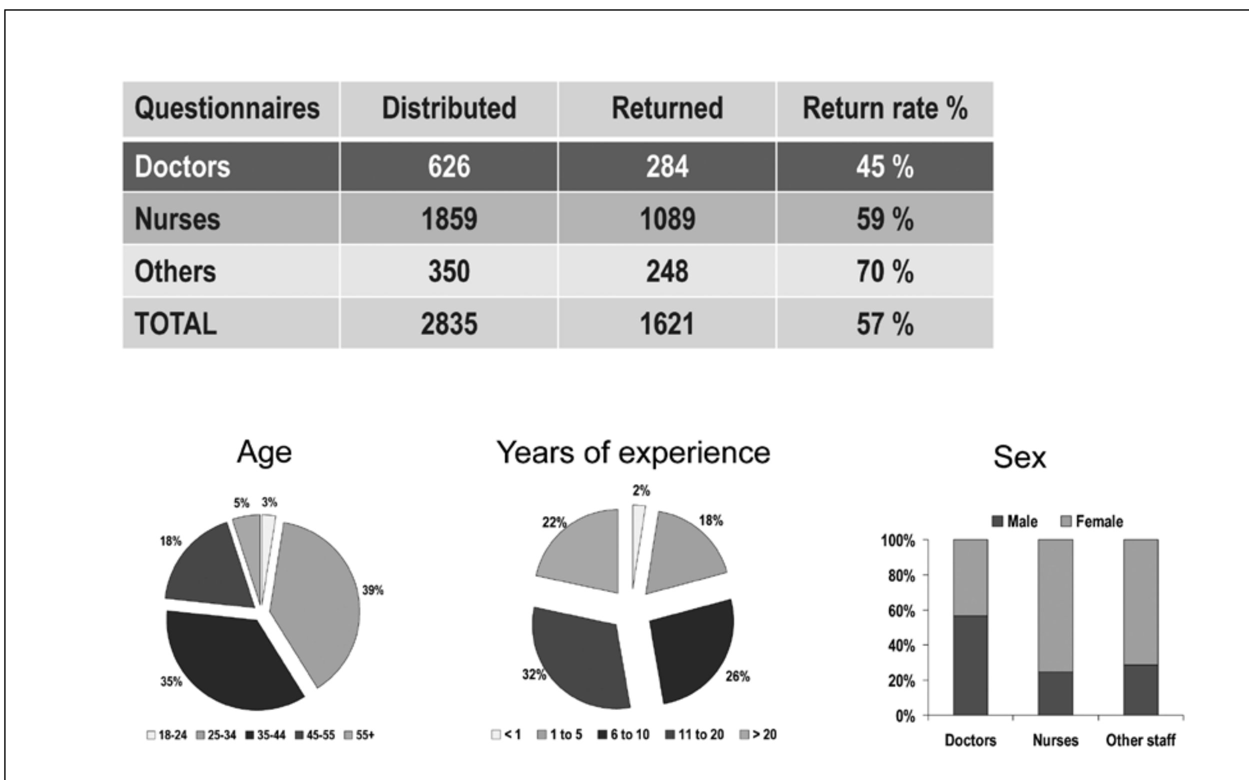
We used the recommended terminology for possible, potential, eligible, actual and utilised donors for Donation after Brain Death (DBD) according to the WHO Resolution (Madrid 2010), as described by Domínguez-Gil et al. 8

- POSSIBLE DECEASED ORGAN DONOR: Mechanically ventilated patient with a devastating brain injury or lesion, apparently medically suitable for organ donation.
- POTENTIAL DBD DONOR: A person whose clinical condition is suspected to fulfil brain death criteria.
- ELIGIBLE DBD DONOR: A medically suitable person who has been declared dead based on neurologic criteria as stipulated by the law of the relevant jurisdiction.
- ACTUAL DBD DONOR: A consented eligible donor in whom an operative incision was made with the intent of organ recovery for the purpose of transplantation and/or from whom at least one organ was recovered for the purpose of transplantation.
- UTILISED DBD DONOR: An actual donor from whom at least one organ was transplanted.

Results

Hospital Attitude Survey

An overall return rate of 57% was obtained from the HAS7. The 45% return rate from doctors was lower than that of 59% of nurses, other professionals replied to 70% of the questionnaires. The return rate was much higher in non university centres (maximum 95%) versus university centres (minimum 39%).
Baseline characteristics were the following: age range (years) 25-34 (39%) and 35-44 (35%), the under 25's and over 44, made up the remaining 26%. The years of experience was divided up into less than five years (20%), six to ten years (26%) 11-20 years (32%), more than 20 years (22%) (Figure 1).



Questionnaires	Distributed	Returned	Return rate %
Doctors	626	284	45 %
Nurses	1859	1089	59 %
Others	350	248	70 %
TOTAL	2835	1621	57 %

Figure 1 - Donor Action - Hospital Attitude Survey 2007-2009. Demographics of hospital staff.

When the healthcare professionals were asked about their attitude: 85% doctors would give their organs and 81% their tissues, 81% nurses would give their organs and 76% their tissues. 78% of other staff would give their organs and 71% their tissues. When asked if brain death is a definition of death, 16% replied negatively, citing three main reasons; insufficient information about brain death (3%); doubts about the scientific definition (6%); religious beliefs and personal values (7%). In conclusion, 90% of healthcare professionals support organ donation in general; 30% have been implicated in the process and 55% requested specific training in the organ donation process (Figure 2).

Medical Records Review

The MMR was carried out over a four year period (2007-2010) in the LODP, the number of deaths in ICU increased slightly but more significantly the number of medically suitable patients with cerebral lesions. Patients with brain death diagnosed increased and consequently the number of relatives approached increased as did the consent for donation. The conversion rates for possible into potential, potential into eligible, eligible into actual and actual into utilised donors can be seen to improve throughout the four year period (Table 1).

The utilised donor (UD) rates rose accordingly and the number of procured organs increased. The number of organs transplanted per donor remained high over the four year period: 3.75 to 4.14. The percentage of UD versus all deaths rose from 3.3% in 2007 to 5.2% in 2010 (Table 1). The definitions are the ones used by Domínguez-Gil et al. The critical pathway for deceased donation: reportable uniformity in the approach to deceased donation[8].

In July 2007 when the Swiss Transplant Law was introduced, organ donation rose during the second half of that year but the final number of donors was similar as during 2006. UD rates for the country showed an improvement in 2008 and 2009, which regressed during 2010. Despite this regression we can see a clear tendency in the LODP network, as there is a steady rise in UD over the past five years (Figure 3).

Discussion

The results of the LODP show that putting into place efficient measures relating to the organ donation process has rapidly increased the number of donors in that area. The collaboration between the ICU staff, the LDCs and the General Coordinator of the LODP is prominent in this success.

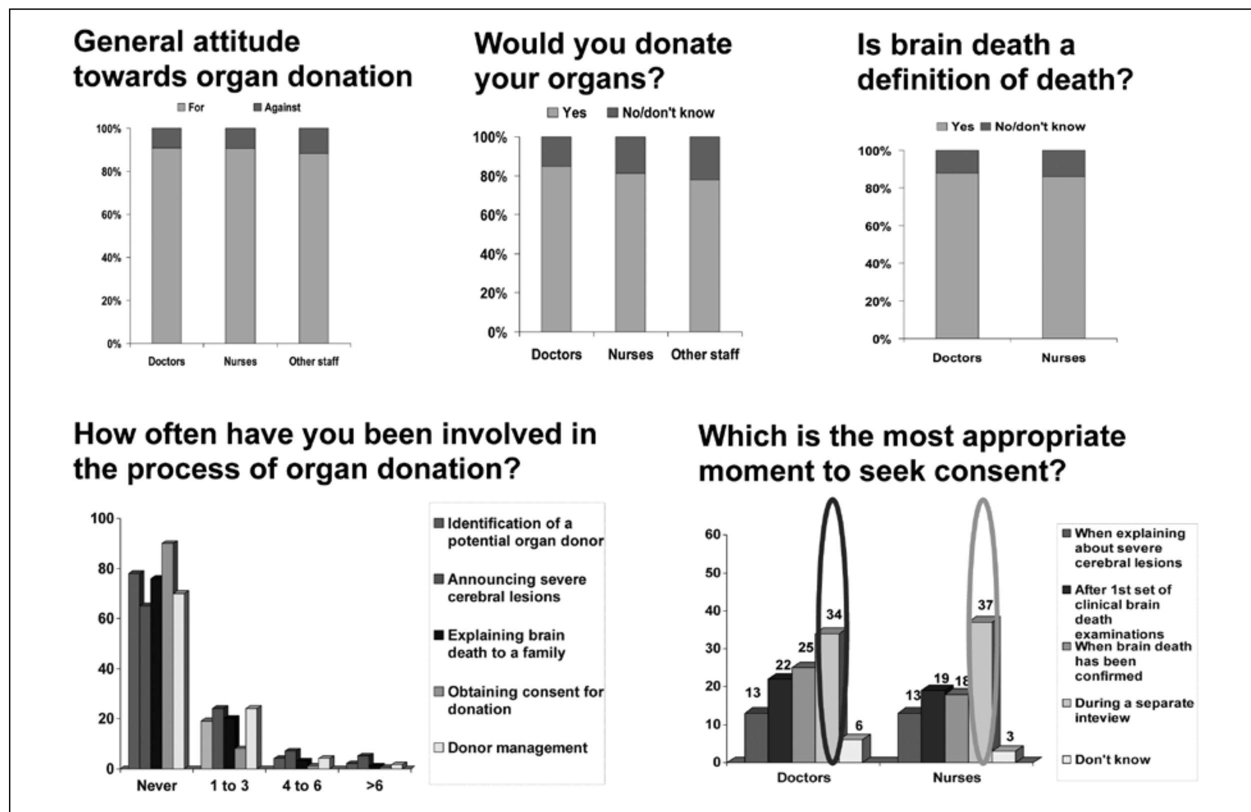


Figure 2 - Hospital Attitude Survey. Opinions and experience of hospital staff.

Medical Records Review in the LODP between 2007 and 2010	2007	2008	2009	2010
Number of deceased patients	963	957	1023	979
POSSIBLE DONORS for DONATION AFTER BRAIN DEATH (DBD)* Mechanically ventilated patient with a devastating brain injury or lesion, apparently medically suitable for organ donation	**233**	**223**	**226**	**266**
Conversion rate - possible to potential (%)	*(34)*	*(28)*	*(39)*	*(37)*
POTENTIAL DBD DONOR* A person whose clinical condition is suspected to fulfil brain death criteria	**80**	**62**	**88**	**98**
Conversion rate - potential to eligible (%)	*(73)*	*(76)*	*(77)*	*(81)*
ELIGIBLE DBD DONOR* A medically suitable person who has been declared dead based on neurologic criteria as stipulated by the law of the relevant jurisdiction	**58**	**47**	**67**	**79**
Conversion rate - eligible to actual (%)	*(57)*	*(68)*	*(64)*	*(65)*
Consent obtained for organ donation (%)	65	68	74	66
ACTUAL DBD DONOR* An actual donor from whom at least one organ was transplanted	**32**	**30**	**43**	**51**
Conversion rate - actual to utilised (%)	*(97)*	*(94)*	*(100)*	*(100)*
UTILISED DBD DONOR* An actual donor from whom at least one organ was transplanted	**32**	**30**	**43**	**51**
Number of deceased patients converted to utilised donors (%)	3.3	3.1	4.2	5.2
Organs procured per utilised DBD	3.75	3.87	3.58	4.14

Definitions based on : Dominguez-Gil B et al. The critical pathway for deceased donation: reportable uniformity in the approach to deceased donation. Transpl Int 2011;24(4):373-8

Table 1 - Medical Records Review in the LODP between 2007 and 2010

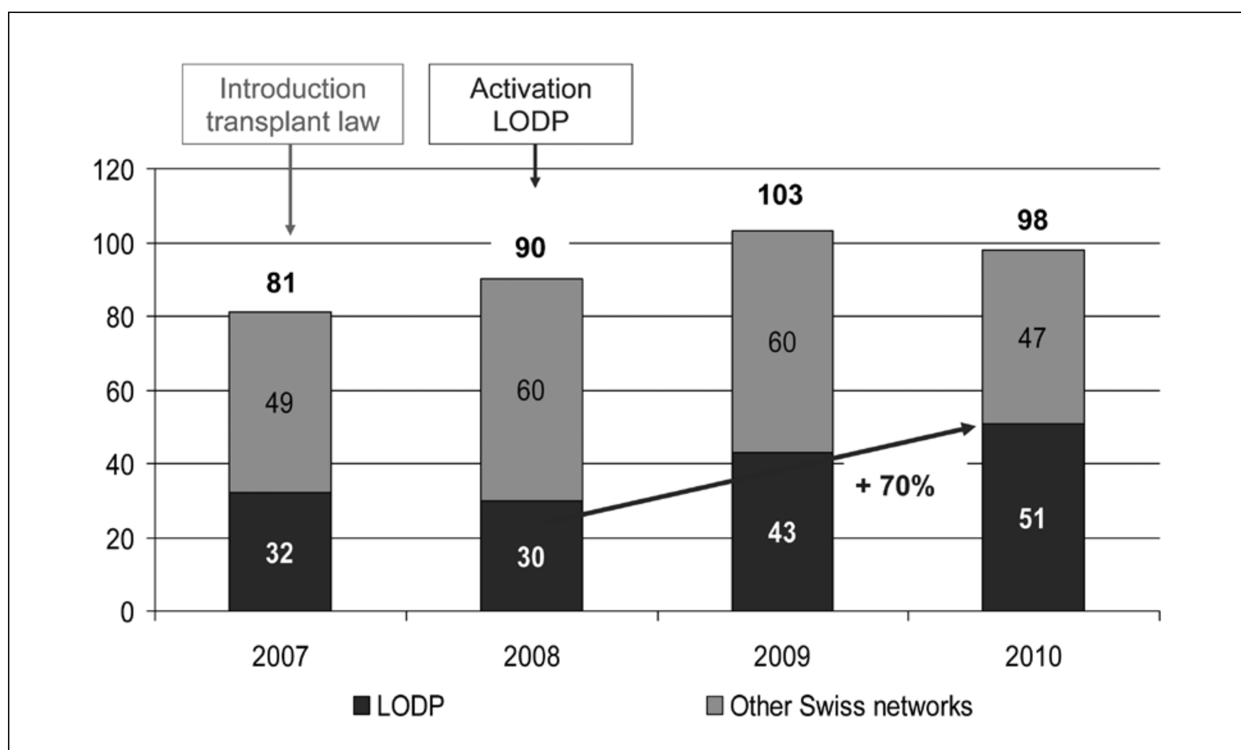


Figure 3 - Number & distribution of deceased organ donors in the LODP and other Swiss networks between 2007 and 2010

The most frequent topic requested in the Hospital Attitude Survey[7] was communication with the relatives; how to break bad news and seeking consent for donation. As a consequence, we have since organized one day seminars[9] addressing the theoretic and practical issues surrounding donation. These courses are organised by the LDCs together with the General Coordinator and take place four to five times a year within the LODP partner hospitals.

Experts in the field of organ and tissue donation have been working together to create regional and national recommendations and protocols, some of which are already available on the LODP website (www.pldo.ch)[10]. For example, the brain death protocol, management of potential donors, information and support for relatives, coordination process, as well as donor care in anaesthesia and organ recovery.

A detailed training programme has been made available to the partner hospitals with a complete set of teaching materials also available on the LODP website.

The increased professional standards in donor management and in caring for relatives has brought about an improvement in UD results since 2008. The LODP direction fixed an objective of 20 donors pmp for 2012; reassuringly we already reached 22.8 pmp in 2010. The LODP covers 29% of the Swiss population and accounted for 52% of all Swiss donors in 2010. We can demonstrate an overall increase of 70% in UD over the period 2008-2010 (Figure 3). It is interesting to note that during 2010, 31 out of 51 organ donors procured within the LODP network were in non university hospitals (in two cases in a non neurosurgery hospital) and 20 donors in university hospitals.

These results have been obtained thanks to the structure and organisation of the LODP which is unique in Switzerland and which will hopefully soon be adopted by the other networks.The regional variations in donation rates in Switzerland are significant, with some networks procuring as few as 4.9 donors pmp. The overall donation rate for Switzerland was 12.6 pmp in 2010, with an average of four organs per donor utilised for transplantation, which largely overtakes the European average of three organs per donor[11] (Figure 4).

If this model is adopted over the rest of Switzerland, we could easily reach 20 donors pmp on a national level, which would mean passing from 98 donors in 2010 to 154 donors in the future, enabling more than 600 transplants with organs from deceased donors. This perspective should be compared with the current number of transplantations from deceased brain dead donors which is below 400 a year.

Measures taken by the Latin Organ Donation Programme since 2008
Recruitment of a project manager to set up the LODP network
Financing of personnel obtained from the cantonal health ministries
Project manager became general coordinator for the LODP network
Creation of an executive committee
Creation of a consultative committee
Identification and inclusion of partner hospitals with recognised ICUs with potential for donation
Recruitment of LDCs in each hospital with potential for donation
Training of LDCs in : data collection for the Donor Action Programme knowledge of national and regional recommendations and protocols organisation and dispensing of training and information sessions in their hospitals
Continuous training for the LDCs with 3 sessions a year
Organisation of a seminaries for braking bad news and seeking consent for organ donation for hospital staff
Creation and updating of the LODP website
Creation and manning of the LODP hotline by experienced ICU doctors in the 2 university hospitals
Creation and financing of posts for TPCs in 2 university hospitals/transplant centres
Organisation of rota system for transfer of TPCs to the partner hospitals for organ recovery
Post donation support for relatives

Table 2 - Measures taken by the Latin Organ Donation Programme since 2008.

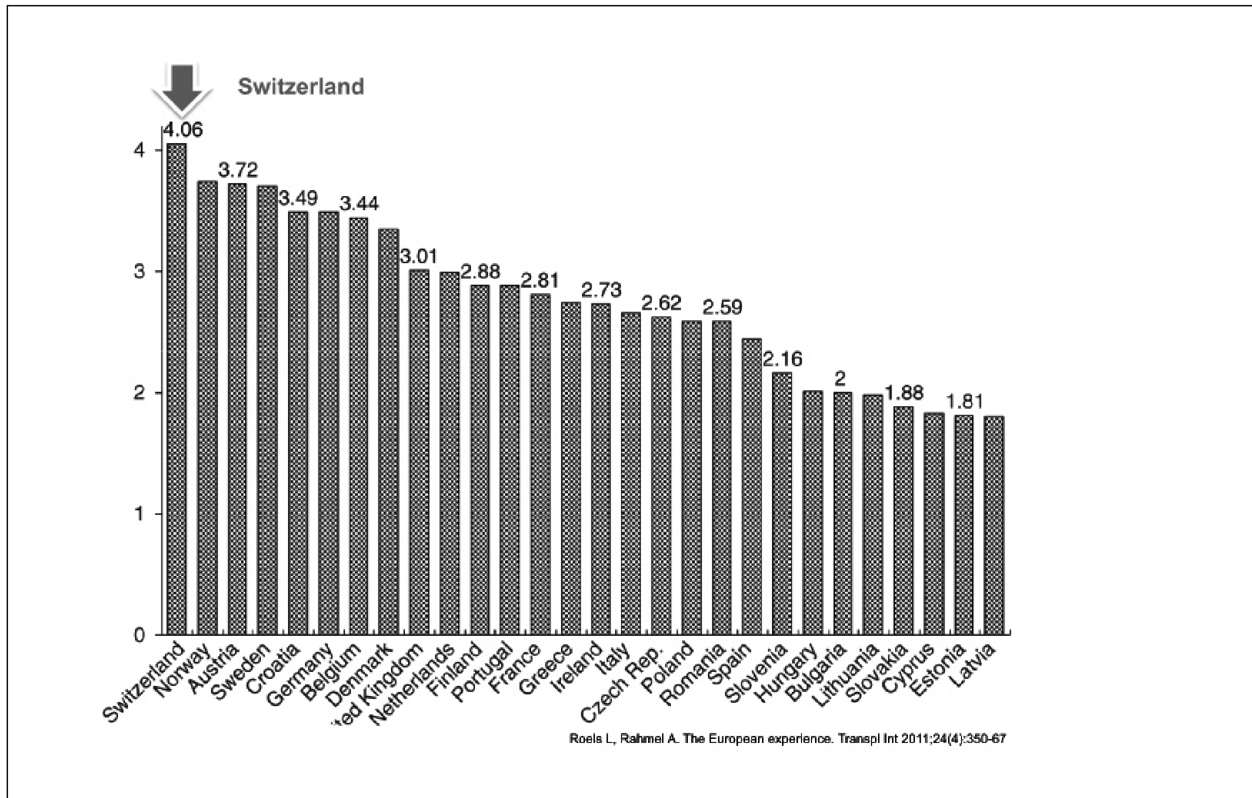


Figure 4 - Transplanted organs/deceased donors in different European countries in 2008.

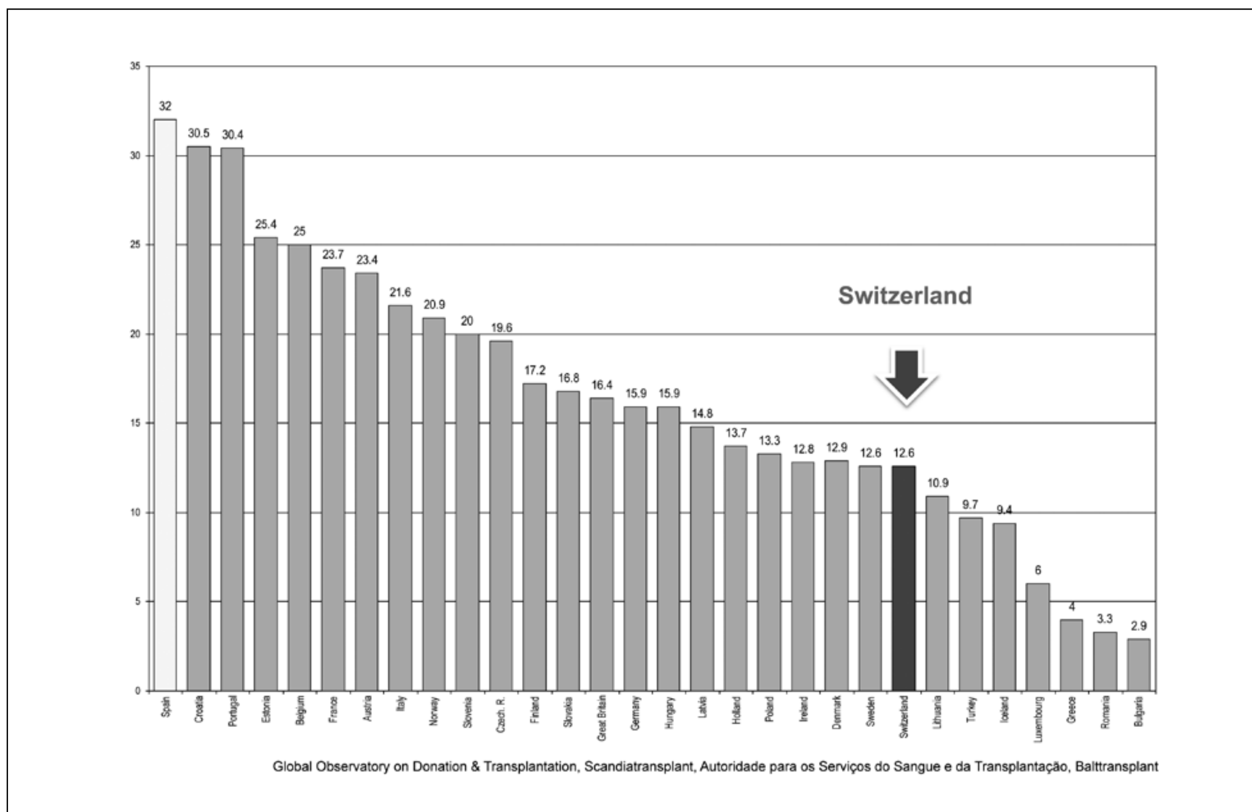


Figure 5 - Deceased organ donation per million population in European countries in 2010.

Conclusions

The training of LDCs was completed in spring 2009 and combined with other measures such as the transfer of Transplant Procurement Coordinators to the outlying hospitals for organ recovery, the start-up of the hotline and the activation of the website, the LODP was fully functional by the second part of 2009.

The Swiss donation rates at 12.6 pmp were still amongst the lowest in Europe in 2010 where the average was 17.7 donors pmp[12] (Figure 5). With the introduction of the federal law in 2007 we saw an initial rise in deceased organ donation but unfortunately this was not sustained. The measures implemented by the LODP have led to a 70% increase in UD in this region but we do realise that the success of this programme has been extremely rapid and concerns very small numbers in a small area of a country such as Switzerland and could be exposed to variable donation rates between different observational periods.

This initiative proves that the professionalization of the donation process can bring about a marked improvement in results. Can we really afford to wait for a longer assessment period before implementing this kind of model throughout Switzerland?

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The opinions of young people on paid organ donation.

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